ABSTRACTS OF WORKING PAPERS IN ECONOMICS

This section contains abstracts and complete bibliographic information for current working papers, listed alphabetically by primary author. Brief entries appear for secondary authors, cross-referenced to the primary author. For more recent as well as historical information, consult the AWPE DATABASE, available online through BRS. (Call 800-345-4277, or 518-783-1161 collect from overseas.)

Abbott, Michael G.

PD November 1986. **TI** Male and Female Earnings in Canadian Manufacturing, 1931. **AU** Abbott, Michael G.; Beck, Ruth M. **AA** Department of Economics, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 669; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 84. **PR** $2.50 Canada; $3.00 United States; $3.50 foreign. **JE** 824, 826, 042, 917. **KW** Earnings Functions. Male-Female Earnings Differentials. Decomposition Analysis. Canada.

AB A cross section sample of industry-level data for 58 "3-digit" Canadian manufacturing industries, assembled from the 1931 Census of Canada and the 1931 Census of Industry, is used to estimate and compare the 1931 interindustry earnings structures of male and female workers in Canada. The critical feature of the sample cross section is that it provides separate industry-level data for males and females on both weekly earnings and several earnings-related worker characteristics. Conventional tests for male-female earnings function coefficient differences produce strong evidence of jointly significant differences between the 1931 interindustry earnings structures of male and female workers. Decomposition analysis reveals that, despite dramatic differences in the observed age and occupational distributions of males and females, male-female differences in mean earnings-related characteristics together account for only a negligible fraction of the gross (unadjusted) male-female logarithmic earnings differential of 0.599. Virtually all of this observed male-female earnings differential is apparently attributable to male-female differences in earnings function coefficients.

PD November 1986. **TI** Alternative Estimates of Union-Nonunion and Public-Private Wage Differentials in Ontario, 1981. **AU** Abbott, Michael G.; Stengos, Thanasis. **AA** Abbott: Department of Economics, Queen's University. Stengos: Department of Economics, University of Guelph. **SR** Queen's Institute for Economic Research Discussion Paper: 670; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 63. **PR** $2.50 Canada; $3.00 United States; $3.50 foreign. **JE** 824, 831. **KW** Sample Selectivity. Sample Selection. Censored Samples. Wage Differentials. Canada.

AB We employ a sample of Ontario paid workers from the 1981 Survey of Work History to compute three alternative sets of wage function coefficient estimates for four groups of workers: unionized and nonunionized private sector workers, and unionized and nonunionized public sector workers. These sets of coefficient estimates are distinguished by whether and how they account for selectivity in the assignment of workers to union or nonunion status and to public or private sector employment. The first set of wage equation estimates, Model 1, is computed using a generalization of the familiar Heckman-Lee two-stage procedure for estimating linear regression equations on censored samples to the case of two distinct sample selection rules, one of which accounts for selectivity in the assignment of workers to union or nonunion status, the other the assignment of workers to public or private sector jobs. The second set of wage equation estimates, Model 2, uses the conventional one-selection-rule Heckman-Lee procedure to adjust only for selectivity in the assignment of workers to union or nonunion status; it does not correct for selectivity in the assignment of workers to public or private sector jobs. The third set of wage equation estimates, Model 3, does not correct for either source of selectivity, and involves simply OLS estimation of each of the four sectoral wage equations. Conditional mean union-nonunion wage differentials for public and private sector workers, and public-private wage differentials for unionized and nonunionized workers, are computed for each set of wage equation coefficient estimates. Our principal empirical finding is that the derived estimates of the conditional mean wage differentials are sensitive to which of the three econometric models and associated estimators is adopted in estimating the sectoral wage equations. In particular, Model 1 implies that the conditional mean union-nonunion wage differential is larger for private sector than for public sector workers, and that the public-private wage differential is smaller for unionized than for nonunionized workers. Models 2 and 3, on the other hand, imply just the opposite rank ordering of these wage differentials.

Abel, Andrew B.

PD July 30, 1986. **TI** Investment and Sales; Some Empirical Evidence. **AU** Abel, Andrew B.; Blanchard, Olivier J. **AA** Abel: Wharton School. Blanchard: Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 428; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PR** No Charge. **JE** 131, 631, 522, 531. **KW** Investment. Sales. Empirical. Manufacturing. Lags. Adjustment Costs.

AB This paper attempts to give a structural interpretation to the distributed lag of sales on investment at the two-digit level in United States manufacturing. It first presents a simple model which captures the various

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sources of lags and their respective implications. It then estimates the model, using both data on investment and sales as well as direct evidence on the sources of lags. The spirit of the paper is exploratory; the model is used mainly as a vehicle to construct, present and interpret the data. We find that the following model can roughly generate the distributed lag structure found in the data. Firms face delivery lags of 3 quarters. They also face adjustment costs, which lead them to take into account expected future sales, with discount factor .9 when constructing the desired capital stock, and to close about 5 per cent of the gap between actual and desired capital per quarter. They pay for orders at a constant rate between the time of order and that of delivery. The model is however not very successful in explaining differences in dynamics across sectors.

PD October 1986. **TI** Investment and Sales: Some Empirical Evidence. **AU** Abel, Andrew B.; Blanchard, Olivier J. **AA** Abel: University of Pennsylvania. Blanchard: MIT. **SR** National Bureau of Economic Research Working Paper: 2050; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 522, 022. **KW** Sales. Investment.

AB This paper attempts to give a structural interpretation to the distributed lag of sales on investment at the two-digit level in United States manufacturing. It first presents a simple model which captures the various sources of lags and their respective implications. It then estimates the model, using both data on investment and sales as well as direct evidence on the sources of lags. The spirit of the paper is exploratory; the model is used mainly as a vehicle to construct, present and interpret the data. We find that the following model can roughly generate the distributed lag structure found in the data. Firms face delivery lags of 3 quarters. They also face adjustment costs, which lead them to take into account expected future sales, with discount factor .9 when constructing the desired capital stock, and to close about 5% of the gap between actual and desired capital per quarter. They pay for orders at a constant rate between the time of order and that of delivery. The model is however not very successful in explaining differences in dynamics across sectors.

Abraham, Katharine G.

PD January 1986. **TI** Job Duration, Seniority, and Earnings. **AU** Abraham, Katharine G.; Farber, Henry S. **AA** Abraham: Massachusetts Institute of Technology and The Brookings Institution. Farber: Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 407; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 63. **PR** No Charge. **JE** 824. **KW** Seniority. Experience. Job Duration.

AB A measure of the completed duration of jobs is developed, based on a Weibull model of job duration using a longitudinal sample from the Michigan Panel Study of Income Dynamics, in order to distinguish between the competing hypotheses regarding both seniority and experience. Earnings functions using this measure of job duration as a regressor are estimated. These yield three main results. First, workers in longer jobs earn significantly more in every year of the job than do workers in shorter jobs. Second, controlling for completed job duration eliminates most of the apparent return to seniority found in standard cross-section models. Thus, it appears that implicit contracts that provide for workers posting bonds through deferred wage payments are less important than has been believed. Third, for blue collar workers there is evidence that a part of the small observed (cross-sectional) return to labor market experience is due to sorting of workers into better jobs over time. There is no evidence of sorting for white collar workers.

Admati, Anat R.

PD September 1986. **TI** Direct and Indirect Sale of Information. **AU** Admati, Anat R.; Pfleiderer, Paul. **AA** Stanford University. **SR** Stanford Graduate School of Business Research Paper: 899; Graduate School of Business, Stanford University, Stanford, CA 94305-2391. **PG** 41. **PR** No Charge. **JE** 022, 026, 522, 611. **KW** Information. Investment Decisions. Portfolio.

AB We compare two methods for a seller to sell information to traders in a financial market. In a direct sale, buyers of the information observe versions of the seller's signal and subsequently use it to make investment decisions. Alternatively, the seller can create a portfolio based on his private information and sell shares to traders. The optimal selling method depends on the extent to which information is revealed by the equilibrium prices of the financial assets. We examine some of the relevant tradeoffs.

Aizenman, Joshua

PD September 1986. **TI** Country Risk and Incentive Schemes. **AA** University of Chicago. **SR** National Bureau of Economic Research Working Paper: 2031; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 430, 443, 026. **KW** Country Risk. Incentive Schemes. Default Penalties.

AB The purpose of this paper is to address the role of endogenous default penalties that are contingent upon the intensity of default on the part of the borrowing nation, and to evaluate the effects of contingency plans that make the interest rate dependent upon variables that are correlated with the default penalty. This is done by considering an economy where a default will trigger a variable cost whose magnitude is determined by the intensity of default. We design alternative incentive schemes by varying the responsiveness of the penalty to the intensity of default, without changing the total cost applied in case of a complete default. At the limit our incentive scheme converges to an exogenous default cost regime. We derive the supply of credit for the case where there is uncertainty regarding the total default cost, and we evaluate the dependency of the supply curve on the incentive scheme. A rise in the elasticity of the penalty with respect to the default intensity is shown to induce a higher default rate and to raise the country risk as reflected in the interest rate associated with a given borrowing, causing a leftward shift in the supply of credit. Using the expected welfare of a representative consumer it is shown that the introduction of partial defaults due to a variable penalty has adverse effects. Thus, our study concludes

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that variable default schemes that tie the penalty to the default rate are disadvantageous. We turn then to an assessment of the welfare effect of plans that make the interest rate contingent upon realization of shocks. In general, such a contingency plan is advantageous. For example, a plan that will index the interest rate such as to correlate it perfectly with the default penalty eliminates the adverse effects of country risk on expected income. For such an economy a contingency plan that will index the effective interest rate to the realization of the terms of trade will be beneficial in reducing the effective magnitude of country risk and the incidence of default.

Akerlof, George A.

PD September 1986. **TI** Do Deferred Wages Dominate Involuntary Unemployment as a Worker Discipline Device? **AU** Akerlof, George A.; Katz, Lawrence F. **AA** Akerlof: University of California Berkeley. Katz: Harvard University. **SR** National Bureau of Economic Research Working Paper: 2025; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 821, 824, 825. **KW** Deferred Wages. Involuntary Unemployment. Worker Discipline Advice. Shirking Model.

AB In the most widely analyzed type of efficiency wage model of involuntary unemployment, firms pay wages in excess of market clearing to give workers an incentive not to shirk. Such payments in excess of market clearing and the resultant equilibrium unemployment act as a worker discipline device. This paper concerns what is usually considered the most important theoretical criticism of such models: the so-called bonding argument. The essence of the bonding critique is that contracts whereby workers pay a bond to the firm upon taking a job (or pay an employment fee to gain employment) can eliminate involuntary unemployment. Explicit upfront bonds are only quite rarely observed. A more subtle form of the bonding critique argues that implicit bonding through upward sloping wage profiles and other deferred payment schemes can perfectly substitute for upfront bonds in providing incentives not to shirk and thereby allow the labor market to clear. This paper shows that upward sloping wage profiles do not act as a perfect substitute for explicit bonds in a natural extension of the shirking model in which workers are finite lived, the monitoring of worker behaviors on the job is costly, and firms have reputations for honesty as employers. In the absence of direct upfront bonding, optimal payment schedules will be in excess of market clearing. The reason why upward sloping wage profiles that are market clearing will not generally be the optimal labor contract is simple: delayed payment may provide sufficient incentive to prevent shirking late in the life of the contract, but in the beginning of the contract it does not prevent shirking. And it turns out in a variety of stylized cases, it is cheaper for the firm to pay a wage premium rather than to accept worker shirking early in the contract. The implications of potential worker malfeasance in the absence of explicit bonds for compensation schedules, job assignments, and firm monitoring strategies over the course of a worker's career are also analyzed.

Alesina, Alberto

PD June 1986. **TI** Political Parties and the Business Cycle in the United States, 1948-1984. **AU** Alesina, Alberto; Sachs, Jeffrey. **AA** Harvard University. **SR** National Bureau of Economic Research Working Paper: 1940; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 130, 311, 122. **KW** Political Business Cycle. United States. Political Parties. Monetary Policies.

AB This paper tests the existence and the extent of a politically induced business cycle in the United States in the post-World War II period. The cycle described in this paper is different from the traditional "political business cycle" of Nordhaus. It is based on a systematic difference between the monetary policies of the two parties in a model with labor contracts. From an explicit optimization problem we derive a system of equations for output and money growth. Then we successfully test the non-linear restriction imposed by the theory on the parameters of the system of equations. We cannot reject the hypothesis that money growth has been systematically different under the two types of administration and that this difference contributes to explain output fluctuations.

Allen, Robert C.

PD August 1986. **TI** The Growth of Labour Productivity in Early Modern English Agriculture. **AA** Department of Economics, University of British Columbia. **SR** University of British Columbia Department of Economics Discussion Paper: 86-40; Department of Economics, University of British Columbia #997-1873 East Mall, Vancouver, B.C. CANADA V6T 1Y2. **PG** 35. **PR** $0.20 per page Canadian to other than educational institutions. **JE** 044, 718. **KW** Labor Productivity. Early Modern English Agriculture. England. English Economic History.

AB There are two theories about the effect of enclosure and large farms on employment and production in English agriculture. Arthur Young's capital intensive farmer theory, through its restatement by Chambers, is the most influential. It contends that enclosures and large farms increased employment and output. The latter increased more, so labour productivity also rose. In Allen (1986a) I measured the impact of enclosures and large farms on crop yields to test the predictions about output. They were false. Indeed, the increase in English corn yields in the seventeenth and eighteenth centuries was mainly accomplished by open field farmers before the general shift to very large farms in the eighteenth century. In this paper, we have examined the predictions about employment. Contrary to Young's theory, employment declined with farm size. Enclosure also reduced employment when it led to conversion to pasture; otherwise it had no effect. This should not have been a surprise to Young since he also observed that employment was generally less than his theory predicted. Since there is no evidence that supports Young's capital intensive farmer theory and much evidence opposed, historians ought to abandon that theory. The second theory about the effects of large farms and enclosures derives from the critics of enclosure who argued that it depopulated the countryside. Before the eighteenth century, enclosure did lower population or stifle its increase, but after 1700 it no longer

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had that effect. (Allen 1986b.) Throughout the eighteenth century, however, enclosure and the increase in farm size reduced agricultural employment. That reduction raised labour productivity above continental levels. We can conceive of productivity growth in early modern English agriculture as a two part development. First was the rise in corn yields in the seventeenth century. Enclosure and capitalist agriculture made no contribution to this advance, which also raised labour productivity. Second was the further rise in labour productivity in the eighteenth century due to the shift to large farms. The release of labour from agriculture was the sole contribution of large farms to England's economic development. Consequently, the transition to capitalist agriculture raised England's gross domestic product if and only if the "freed" labour was reemployed elsewhere in the economy.

PD August 1986. **TI** The Price of Freehold Land and the Interest Rate in the Seventeenth and Eighteenth Centuries. **AA** Department of Economics, University of British Columbia. **SR** University of British Columbia Department of Economics Discussion Paper: 86-37; Department of Economics, University of British Columbia #997-1873 East Mall, Vancouver, B.C. CANADA V6T 1Y2. **PG** 21. **PR** $0.20 per page Canadian to other than educational institutions. **JE** 044, 718. **KW** Freehold Land. England. English Economic History. Property. Interest Rate. Land. Landowners.

AB The remarkable conclusion to follow from these calculations is that freehold land was not trading at a price that exceeded its economic value. This does not imply that economic motives were the only motives influencing the demand for land. It is quite possible that many substantial landowners would have paid a higher price for their land for social reasons. However, such demand was not pervasive enough to raise the price of real estate above its economic value. Moreover, the strict settlement, while undoubtedly preventing some life tenants from selling land, did not raise the price by reducing the supply on the market. Since many life tenants of settled estates also owned unsettled land, Figure 5 is a plausible representation of the way economic and social motives, in conjunction with the strict settlement, interacted to determine the price of freehold land. Any judgement about the price of land relative to its economic value is only as sound as the underlying model of the real estate market and the data to which the model is applied. In both regards I have built on the existing literature. The model of price determination extends that literature by formally integrating risk and the rate of appreciation of rental values. While historians have discussed their importance in passing, it has not been possible, in the absence of an explicit model, to assess their impact relative to the mortgage interest rate and the costs of estate administration and taxes. On the factual level, I have provided a new index of rents. The parameters whose values remain least certain are the mortgage interest rate, the risk premium on mortgages, and the costs of estate administration and taxes. Further research would be useful to measure these parameters as accurately as possible. However, the values I have used are those current in the historical literature. At the least, this paper has shown the full implications of the conventional beliefs.

PD August, 1986. **TI** Enclosure, Capitalist Agriculture and the Growth in Corn Yields in Early Modern England. **AA** Department of Economics, University of British Columbia. **SR** University of British Columbia Department of Economics Discussion Paper: 86-39; Department of Economics, University of British Columbia #997-1873 East Mall, Vancouver, B.C. CANADA V6T 1Y2. **PG** 33. **PR** $0.20 per page Canadian to other than educational institutions. **JE** 044, 718, 716, 717. **KW** Enclosure. Corn. England. English Economic History. Agriculture.

AB For hundreds of years, defenders of enclosure and large farms have argued that they caused economic growth and social advance by raising corn yields. Recently, agricultural historians have questioned the importance of enclosure in causing productivity growth. The evidence examined in this paper extends that view by showing that the yield increase that attended enclosure was at most a small fraction of the growth of yields between the middle ages and the nineteenth century. The evidence of probate inventories and the real rent of open field farm land concur in establishing that most of that increase was accomplished by open field farmers in the late seventeenth and early eighteenth centuries. The effect of increases in farm size on performance has not been studied systematically since Arthur Young's work in the 1770's. While he claimed to detect a positive correlation between farm size and yield, the finding is not credible. Instead, I have used a sample of probate inventories to measure that correlation. This investigation shows that there was no relation. Small farmers were raising yields in early modern England just as rapidly as large farmers. The most persuasive argument in favour of large farms and enclosures was that they raised corn yields. The evidence reviewed in this paper shows that those claims are hollow. If modern, capitalist agriculture advanced the public interest, it did so in some other way.

PD August 1986. **TI** Enclosure, Depopulation, And Inequality In The South Midlands, 1377-1801. **AA** Department of Economics, University of British Columbia. **SR** University of British Columbia Department of Economics Discussion Paper: 86-36; Department of Economics, University of British Columbia #997-1873 East Mall, Vancouver, B.C. CANADA V6T 1Y2. **PG** 31. **PR** $0.20 per page Canadian to other than educational institutions. **JE** 044, 043, 717. **KW** Britain. English History. Depopulation. Enclosure. Inequality. Landownership.

AB In this paper I will deal first with the basic questions of whether enclosure caused depopulation and increased inequality. The questions will be answered by analyzing several data sets describing the population histories and land ownership distributions of large samples of south midlands villages. In accord with the results of Gonner on population and the investigations of the land tax assessments, my investigation shows that parliamentary enclosures had little effect on either population density or inequality. The results are very different for earlier enclosures, however. They increased inequality as well as the rate of emigration from affected villages.

Allen, Steven G.

PD September 1986. **TI** Can Union Labor Ever Cost Less? **AA** North Carolina State University.

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SR National Bureau of Economic Research Working Paper: 2019; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 824, 634, 831. **KW** Union Labor. Construction Costs.

AB This paper examines the effect of unions on efficiency by estimating cost function systems over three different sets of construction projects. The results show that union contractors have greater economies of scale. This gives them a cost advantage in large commercial office buildings, but in school and hospital construction, nonunion contractors have lower costs at all output levels. Despite the cost differences, profits for nonunion contractors in school and hospital construction are no higher than those for union contractors because the burden of higher union costs is shifted to buyers.

Altonji, Joseph

PD September 1986. **TI** Testing the Response of Consumption to Income with (Noisy) Panel Data. **AU** Altonji, Joseph; Siow, Aloysius. **AA** Columbia University. **SR** National Bureau of Economic Research Working Paper: 2012; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 023, 921. **KW** Consumption. Life Cycle Model. Rational Expectations.

AB This paper tests the rational expectations lifecycle model of consumption against (i) a simple Keynesian model and (ii) the rational expectations lifecycle model with imperfect capital markets. The tests are based upon the relative responsiveness of consumption to income changes which can be predicted from past information and income changes which cannot be predicted. Since there is strong evidence that panel data contains substantial measurement error, the tests are especially constructed to allow for measurement error in the income process. They also allow for more general income processes than have been considered to date in the literature. The results reject the Keynesian model and generally support the lifecycle model, although the tests are not sufficiently precise to rule out the possibility that some households are liquidity constrained. Measurement error does have a strong influence on the relationship between consumption and income. When it is ignored our tests do not reject the Keynesian model. We show that consideration of measurement error may also reconcile differences in the results of Hall and Mishkin (1982) and Bernanke (1984). Nevertheless, our most important conclusion is that Hall and Mishkin's, Bernanke's, and Hayashi's (198) qualitative finding that the vast majority of households obey the lifecycle model is not an artifact of failure to account for measurement error in the income data.

Arellano, Manuel

PD November 1986. **TI** The Estimation and Hypothesis Testing of Dynamic Models From Panel Data. **AA** Institute of Economics and Statistics, Oxford. **SR** Oxford Applied Economics Discussion Paper: 17; Institute of Economics and Statistics, Saint Cross Building, Manor Road, Oxford OX1 3UL. **PG** 31. **PR** No Charge. **JE** 211. **KW** Panel Data. Serial Correlation. Minimum Distance. GLS. Covariance Restrictions. Dynamic Models. Unit Roots.

AB This paper proposes efficient methods of estimation for dynamic single equation models from panel data with correlated permanent effects and endogenous explanatory variables when the serial covariance matrix of the disturbances satisfies some set of restrictions. Generalized Wald and minimum chi-square tests of specific forms of serial correlation are also developed. Particular attention is paid to the case of moving average errors and testing for moving average unit roots. Models with constraints linking slope and covariance coefficients are also analyzed. Throughout normality is not imposed.

Auerbach, Alan J.

PD March 1986. **TI** Tax Loss Carryforwards and Corporate Tax Incentives. **AU** Auerbach, Alan J.; Poterba, James M. **AA** Auerbach: University of Pennsylvania. Poterba: Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 413; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 55. **PR** No Charge. **JE** 323, 022. **KW** Corporate Tax Incentives. Loss-offset Constraints. Tax Loss Carryforwards.

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

Babai, Laszlo

PD April 1986. **TI** A Las Vegas-NC Algorithm for Isomorphism of Graphs with Bounded Multiplicity of Eigenvalues. **AA** University of Budapest. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 86416; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, Deutschland. **PG** 12. **PR** No Charge. **JE** 213. **KW** NC-Algorithm. Modular Lattice. Eigenvalues. Pointwise Set Stabilizers.

AB We give a simple Las Vegas-(oracle)-NC algorithm for finding a "fairly large" independent set in a set of nodes of a modular lattice with respect to a certain natural notion of independence. Using this as one of the key ingredients and building heavily on recent NC-algorithms of E. M. Luks for manipulation of permutation groups with restricted primitive constituents 'Lu85, we give Las Vegas-NC solutions to the problem of finding pointwise set

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stabilizers in a permutation group satisfying one of the following restrictions: (i) Each orbit has size polylog(n). (ii) The restriction of the group to each orbit has polynomial size. We then use these algorithms to solve, in Las Vegas-NC, the graph isomorphism problem for the following two classes of graphs: (a) Graphs with colored vertices and O(log n/log log n)-bounded color classes. (b) Graphs with bounded multiplicity of eigenvalues. Luks has simultaneously found a deterministic NC algorithm for the subclass of (a) where the color classes are bounded by a constant. If we allow either the color classes to grow as log-squared (n) in (a) or the multiplicity of the eigenvalues to tend to infinity arbitrarily slowly in (b), the resulting problems are not known to have polynomial time sequential solutions (randomized or not). The polynomial time algorithms previously known for these problems are built from sequential subroutines such as sifting and refinement for which no fast parallel solutions are known. (May we also recall that these classes of graphs were the media on which the applicability of group theoretic techniques to graph isomorphism was first demonstrated.) Except for a vague outline, the algorithms presented here have little in common with the sequential solutions. Natural questions of parallelizability, interesting in their own right, arise in connection with the independent set problem for lattices As a matter of preparing tools, we show that factoring polynomials over finite fields of small characteristic is in Las Vegas-NC.

Backus, David K.

PD August 1986. **TI** The Consistency of Optimal Policy in Stochastic Rational Expectations Models. **AU** Backus, David; Driffill, John. **AA** Backus: Queen's University. Driffill: University of Southampton. **SR** Centre for Economic Policy Research Discussion Paper: 124; 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** 023, 133, 311, 321, 026. **KW** Credibility. Macroeconomic Policy. Optimality. Subgame Perfection. Time Consistency. Rational Expectations.

AB This paper extends the work of Barro and Gordon (1983) to general linear models with rational expectations. We examine the question whether the optimal policy rule, i.e. the one that a government which could pre-commit itself would use, can be sustained as a consistent rule in the sense defined by Kydland and Prescott (1977) if the reputational effects similar to those described by Barro and Gordon operate. The analysis is carried out in the context of an infinite horizon game between the government and private sector agents in the economy. We are able to show that, providing the support of the distribution of shocks hitting the economy is bounded, and providing the discount rate in the government objective function is low enough, the optimal policy rule can be sustained as a consistent policy in general. We obtain solutions for the optimal policy rule and the consistent policy rule using straightforward recursive methods and dynamic programming, and show that control theory can be made applicable to economic planning even when expectations are rational (pace Kydland and Prescott, 1977).

PD October 16, 1986. **TI** Risk Premiums in the Term Structure: Evidence from Artificial Economies. **AU** Backus, David K.; Gregory, Allan W.; Zin, Stanley E. **AA** Department of Economics, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 665; 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** 212, 313. **KW** Forward Prices. Holding-Period Yields. Treasury Bills. Autoregressive Conditional Heteroskedasticity. Monte Carlo. Risk Premium. Term Structure. ARCH.

AB We compare the statistical properties of bond prices in an artificial economy to those in the United States treasury bill market in an attempt to separate market forecasts from risk premiums in forward prices and holding-period yields. In the artificial economy, a dynamic pure-exchange model, risk premiums are known functions of the state so it is a simple matter to control for them. We show, first, that the model is capable of generating data similar to United States treasury bills if we give ourselves enough leeway in choosing parameters. Some of the parameters are different enough from those implied by United States time series that we could probably reject the model in a statistical test, but given the model's rigid structure we think it is useful to interpret the parameters freely. Second, the calibrated model has enough variation in risk premiums to explain the empirical failure of the expectations hypothesis. Third, the same version of the model also exhibits autoregressive conditional heteroskedasticity, most of which can be attributed to forecast errors rather than risk premiums. Both the time-varying risk premium and the ARCH errors can be traced to skewness in the underlying distribution over marginal rates of substitution.

Bagwell, Kyle

PD October 1986. **TI** Equilibrium Price Dynamics for an Experience Good. **AU** Bagwell, Kyle; Riordan, Michael H. **AA** Bagwell: Northwestern University. Riordan: Stanford University, Hoover Institution. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-66; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 56. **PR** No Charge. **JE** 022, 531, 611, 612. **KW** Product Quality. Price Dynamics. Signalling. Experience good.

AB Equilibrium price dynamics for an experience good monopolist depends on the evolution of the ratio of informed to uninformed consumers. Consumers use prices and possibly firm age as signals of quality. Under a variety of informational assumptions, the price of a high-quality good initially lies above the full information monopoly price, never increases, and eventually falls (perhaps gradually) to the full information monopoly price. Kreps' criterion characterizes unique equilibria for a large class of environments.

TI Is Everything Neutral? **AU** Bernheim, B. Douglas; Bagwell, Kyle.

Baldwin, Richard

PD June 1986. **TI** Market Access and International Competition: A Simulation Study of 16K Random Access Memories. **AU** Baldwin, Richard; Krugman, Paul.

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AA Massachusetts Institute of Technology. **SR** National Bureau of Economic Research Working Paper: 1936; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 422, 616, 621, 631, 122. **KW** Market Access. International Competition. Protected Home Markets. Japan. Electronics industry.

AB This paper develops a model of international competition in an oligopoly characterized by strong learning effects. The model is quantified by calibrating its parameters to reproduce the United States-Japanese rivalry in 16K RAMs from 1978-1983. We then ask the following question: how much did the apparent closure of the Japanese market to imports affect Japan's export performance? A simulation analysis suggests that a protected home market was a crucial advantage to Japanese firms, which would otherwise have been uncompetitive both at home and abroad. We find, however, that Japan's home market protection nonetheless produced more costs than benefits for Japan.

PD September 1986. **TI** Persistent Trade Effects of Large Exchange Rate Shocks. **AU** Baldwin, Richard; Krugman, Paul R. **AA** Baldwin: Columbia University. Krugman: Massachusetts Institute of Technology. **SR** National Bureau of Economic Research Working Paper: 2017; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 431, 411, 421. **KW** Exchange Rate Shocks. Trade Effects. Trade Flows. Hysteresis.

AB This paper presents a theoretical basis for the argument that large exchange rate shocks - such as the rise of the dollar from 1980 to 1985 - may shift historical relationships between exchange rates and trade flows. We begin with partial models in which large exchange rate fluctuations lead to entry or exit decisions that are not reversed when the currency returns to its previous level. Then we develop a simple model of the feedback from "hysteresis" in trade to the exchange rate itself. Here we see that a large capital inflow, which leads to an initial appreciation, can result in a persistent reduction in the exchange rate consistent with trade balance.

Baldwin, Robert E.

PD October 1986. **TI** Alternative Liberalization Strategies. **AA** University of Wisconsin. **SR** National Bureau of Economic Research Working Paper: 2045; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 422, 421, 411. **KW** Protectionism. Import Barriers. Trade Liberalization.

AB This paper examines various strategies that have been proposed for halting the recent drift toward protectionism and restoring a more liberal trading regime. A number of groups and individuals propose a multilateral approach aimed at immediately reducing all forms of import barriers and export subsidies on a nondiscriminatory basis across all commodities. Others, who doubt that all major countries are prepared at this time to pursue this approach, favor a bilateral and regional strategy in which those countries willing to liberalize conclude agreements that are left open for others to join. They believe that this approach will eventually lead to multilateral liberalization. Some groups believe that neither of these approaches will succeed and that an aggressive strategy of quickly retaliating against the unfair trade practices of other countries is the best way to bring countries to the bargaining table for multilateral negotiations. The merits and problems of these various strategies are considered as well as their prospects for implementation. The importance of other conditions necessary for trade liberalization such as satisfactory domestic and international macroeconomic conditions are also discussed.

PD October 1986. **TI** Structural Change and Patterns of International Trade. **AA** University of Wisconsin. **SR** National Bureau of Economic Research Working Paper: 2058; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 411, 422. **KW** Trade Patterns. Structure of Trade.

AB This paper focuses on economists' understanding of the basic determinants of trade patterns and, in particular, on the manner in which these underlying factors change over time and are affected by various policies. A brief survey contrasts the determinants of the structure of trade emphasized by the Ricardian, Heckscher-Ohlin, and imperfect competition models and discusses how well the predictions of these various theories are supported by empirical evidence. The main conclusion of the survey is that trade economists have been reasonably successful in explaining the structure of trade at any point in time but much less successful in understanding how the determinants of the patterns of trade change over time. This inability to explain how the basic determinants of the structure of trade change over time can lead both to poor predictions and bad policy advice. Given the increased interest in long-term shifts in trading structures, it is argued that trade economists should enlarge their analytical framework by endogenizing to a greater extent the basic economic factors determining these shifts. They must also recognize the endogenous nature of trade policies in their models, if they are to carry out their predictive and evaluative roles in the best possible manner.

Barro, Robert J.

PD August 1986. **TI** Government Spending, Interest Rates, Prices and Budget Deficits in the United Kingdom, 1701-1918. **AA** University of Rochester. **SR** National Bureau of Economic Research Working Paper: 2005; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 044, 134, 114, 311, 322. **KW** Government Spending. Interest Rates. Prices. Budget Deficits. United Kingdom. Economic History.

AB The British data from the early 1700s through World War I provide an unmatched opportunity for studying the effects of temporary changes in government purchases. In this paper I examine the effects of these changes on interest rates, the quantity of money, the price level, and budget deficits. Temporary increases in government purchases -- showing up in the sample as increases in military outlays during wartime -- had positive effects on long-term interest rates. The effect on the growth rate of money (bank notes) was positive only during the two periods of suspension of the gold standard (1797-1821 and 1914-1918). As long as convertibility of bank notes into specie was maintained,

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there was no systematic relation of government spending to monetary growth. Similarly, the main interplay between temporary government spending and inflation occurred during the periods of suspension. Temporary changes in military spending accounted for the bulk of budget deficits from the early 1700s through 1918. This association explains the main increases in the ratio of the public debt to GNP, as well as the decreases that typically occurred during peacetime. Over the sample of more than two hundred years, I found only two examples of major budget deficits that were unrelated to wartime -- one associated with compensation payments to slaveowners in 1835-36 and the other with a political dispute over the income tax in 1909-10. Because of the "exogeneity" of these deficits, it is interesting that interest rates showed no special movements at these times.

Barsky, Robert B.

PD October 1986. **TI** Why Don't the Prices of Stocks and Bonds Move Together? **AA** University of Michigan. **SR** National Bureau of Economic Research Working Paper: 2047; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 313, 311, 026. **KW** Bond Rates. Equity Values. Stock Prices.

AB The very low real interest rates on bonds in the 1970's were accompanied by a large drop in the value of common stocks relative to dividends and earnings. More generally, a number of authors have demonstrated that the real prices of debt and equity claims do not covary closely, and often move in opposite directions. This paper analyzes the effects of two disturbances - an increase in risk, and a slowing of productivity growth - each of which might rationalize a simultaneous drop in equity values and in real interest rates on bonds. As long as marginal utility is a convex function of consumption, an increase in risk depresses the return on riskless bonds. When all of the wealth of the economy is traded in the stock market, equity values fall with increasing equity risk only if the intertemporal elasticity of substitution in consumption exceeds unity. This same pattern occurs in response to a fall in productivity growth. In a richer two-real-asset model, which takes account of the fact that corporate capital has rarely been more than a quarter of total wealth, it is likely that both increased risk and lower productivity growth in the corporate sector would lead to a fall in stock prices, a drop in real interest rates, and a rise in the price of the second tangible asset the pattern seen in the 1970's.

Bartel, Ann P.

PD October 1986. **TI** Location Decisions of New Immigrants to the United States. **AA** Columbia University. **SR** National Bureau of Economic Research Working Paper: 2049; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 841. **KW** Immigration. Location Decisions of Immigrants.

AB This paper estimates a multinomial logit model of the location decisions of new immigrants to the United States. Data from the 5-percent Public Use Samples of the 1970 and 1980 Censuses of Population are used to study the geographic distribution of immigrants who arrived after 1965. The major findings are as follows: (1) In choosing both initial and subsequent locations, immigrants are considerably more geographically concentrated than native Americans who move to a new city. (2) All of the immigrant groups prefer to live in cities where their countrymen are already located, but this relationship is much weaker for the more educated immigrants. (3) There is ambiguous evidence on the question of whether immigrants learn about economic opportunies as they spend time in this country. On the one hand, with the exception of the Mexicans, distance from the home country has a much weaker negative impact on location choice as time in the United States elapses. On the other hand, the expected wage variable, which should have a larger positive effect over time, only did so for the Asians, and to some extent, the Central and South Americans (excluding Mexicans and Cubans). (4) Within each ethnic group, there are significant differences in the location choice behavior of the 1965-69 and 1975-79 immigrant cohorts. The results are consistent with an increase over time in the quality of Asian immigrants, and a decrease in the quality of Mexican, Cuban and European immigrants.

Beck, Ruth M.

TI Male and Female Earnings in Canadian Manufacturing, 1931. **AU** Abbott, Michael G.; Beck, Ruth M.

Becker, Winfried

PD November 1986. **TI** The Impact of Public Expenditure on Tax Evasion: an Experimental Approach. **AU** Becker, Winfried; Buchner, Heins Jurgen; Sleeking, Simon. **AA** Becker, Sleeking: University of Cologne. Buchner: University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-60; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 14. **PR** No Charge. **JE** 323, 321, 024. **KW** Public Expenditure. Experimental Approach. Tax Evasion. Tax Burden. Tax Auditing.

AB This paper outlines the methodology and results of an experiment undertaken to analyse, primarily, the impact of public expenditures on tax-evasion behaviour. Apart from the use of transfer payment - as an indicator of the individual benefit derived from public sector expenditures - further explanatory variables used were income, expected auditing probability and perceived tax burden. The influence of these variables on both the propensity to evade taxes and the extent of taxes evaded are investigated. In an attempt to add more 'realism', some innovative changes to the experimental approach were incorporated.

Becketti, Sean

PD September 1986. **TI** Limited Countercyclical Policies: An Exploratory Study. **AU** Becketti, Sean; Haltiwanger, John C. **AA** Becketti: Federal Reserve Bank of Kansas City. Haltiwanger: Johns Hopkins University. **SR** Johns Hopkins Department of Political Economy Working Paper: 179; Department of Political Economy, Johns Hopkins University, Baltimore MD 21218. **PG** 34. **PR** No Charge. **JE** 023, 311, 321, 131. **KW** Limited Countercyclical Policies. Consumption

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Tax Model. Contingent Policies.
AB In this paper we present a class of approximately optimal contingent policies that we call limited countercyclical policies (LCP's). These policies call for the government to respond to current economic indicators, sometimes vigorously, however these responses are limited in the econometric sense that policy instruments are allowed to take on only a limited set of values. LCP's are appealing because they approximate the optimal policy well while simultaneously incorporating features favored by those who support non-contingent policies. We illustrate the use of an LCP in the context of a simple consumption tax model. We find that the LCP performs well under a wide variety of assumptions about the structure of the economy. We also present some evidence that suggests that an LCP works well in a more general class of models.

Beider, Perry C.

PD December 1986. **TI** Comparable Worth in a General Equilibrium Model of the U.S. Economy. **AU** Beider, Perry C.; Fuchs, Victor R.; Bernheim, B. Douglas; Shoven, John E. **AA** National Bureau of Economic Research, Stanford. **SR** National Bureau of Economic Research Working Paper: 2090; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 917, 824, 825, 826. **KW** Comparable Worth. Employment. Wages. Hiring Rules. Male-Female Wage Differentials. Productivity.
AB This paper presents a computable general equilibrium model that simulates the effects on employment, output, wages, and economic efficiency of introducing comparable worth into the United States economy. The model calculates economy-wide aggregate impacts and disaggregated results for individuals grouped by sex, marital status, and education. The effects depend on the hiring rules that would accompany comparable worth, the source of existing male-female wage differentials, the extent of coverage of comparable worth, the intra-household behavior of married couples, and demand and supply elasticities. If, after comparable worth is introduced, employers are constrained to employ men and women in historical proportions, the adverse effects on aggregate employment, output, and efficiency would be much larger than if the employment constraint is based on applicant proportions. If existing wage gaps are the result of sex differences in productivity, the adverse effects of comparable worth are relatively large; but if they are the result of discrimination, the efficiency losses are much smaller. If only part of the economy is subject to comparable worth, the efficiency loss is reduced under the productivity gap assumption, but increased if the wage gap is the result of discrimination. The redistributive effects of comparable worth on married men and women are sensitive to assumptions about intra-household behavior and the size of the gains from marriage. By contrast, unmarried women appear to benefit from comparable worth under most sets of assumptions while unmarried men lose.

Belongia, Michael T.

PD September 18, 1986. **TI** The Changing Empirical Definition of Money: Some Estimates from a Model of the Demand for Money Substitutes. **AU** Belongia, Michael T.; Chalfant, James A. **AA** Federal Reserve Bank of Saint Louis, Department of Agricultural and Resource Economics, University of California, Berkeley. **SR** University of California at Berkeley Department of Agricultural and Resource Economics (CUDARE) Working Paper: 425; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 29. **PR** $5.80. **JE** 311, 312, 314. **KW** Monetary Policy. Money Demand. Money Substitutes. Definition of Money. NOW. MMDA. Money Market Mutual Funds. Financial Instruments.
AB The effects of financial innovations have dominated discussions about the implementation of monetary policy since 1981. The nationwide introduction of NOW accounts that year, supplemented by MMDAs in December 1982 and Super NOWs in January 1983, raised a variety of questions concerning which monetary aggregate should be targeted, whether the new accounts were responsible for slower observed velocity growth in 1982-86 and whether the historical link between M1 and Gross National Product has been broken. In short, the question is whether these new accounts possess characteristics of "money" and should be treated as such in the conduct of monetary policy. This paper offers empirical evidence on the "moneyness" of the new interest-bearing checking accounts and how they have affected the operational definition of M1. Our analysis is based on the admissibility criterion of aggregation theory, which states that a collection of commodities is a candidate for an aggregate good if that collection is weakly separable from other arguments in the representative utility function. Thus, for example, if the current definition of M1 is to meet the admissibility criterion, it must be shown that currency, demand deposits, NOWs and Super NOWs represent a block of commodities that is weakly separable from other financial assets. We test the weak separability of M1 and other plausible asset collections by using nonparametric demand analysis (e.g., Varian; Diewert and Parken; Swofford and Whitney) for the components of M1 plus MMDAs, Money Market Mutual Funds (MMMFs) and savings deposits. Using monthly data for May 1983-August 1985, we find evidence to support the notion that M1A (M1 minus other checkable deposits) and the current definition of M1 both satisfy the admissibility criterion of aggregation theory. Subsequent tests within the context of a reduced-form GNP equation indicate that the more narrow definition of money performs better as an intermediate target variable.

Benhabib, Jess

PD August 1986. **TI** On Competitive Cycles in Productive Economies. **AU** Benhabib, Jess; Laroque, Guy. **AA** Benhabib: New York University. Laroque: INSEE. **SR** Unite de Recherche Document de Travail ENSAE/INSEE: 8610; INSEE, Unite de Recherche, 18 Bd. Adolphe Pinard, 75675 Paris cedex 14, FRANCE. **PG** 48. **PR** No Charge. **JE** 021, 023, 131. **KW** Cycles. Competition. Bifurcation. Overlapping Generations. Golden Rule Steady State Equilibrium.
AB In the framework of an overlapping generations economy with production, this paper studies the possible existence of recurrent competitive cycles near the golden

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rule steady state equilibrium. We characterize the set of critical economies in the neighbourhood of which such cycles do exist. We classify these economies according to the nature of the cycle that appears.

Berliant, Marcus

PD December 1986. **TI** A Note on Income Taxation and the Core. **AA** University of Rochester. **SR** University of Rochester Center for Economic Research Working Paper: 63; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 5. **PR** No Charge. **JE** 021, 323, 024, 026. **KW** Income Tax. Core. Optimal Tax Schedule.

AB Since the important work of Mirrlees (1971), economists have been concerned with refining the necessary conditions for a utilitarian-optimal income tax schedule given resource constraints and incentive compatibility constraints. The incentive constraints are based on the notion that individuals' wage levels or characteristics are unknown to the government, so the optimal income tax schedule must separate individuals and is therefore generally second best. The necessary conditions for optimization generally include a zero marginal tax rate for both the highest and lowest wage individuals. Intuitive and algebraic derivations of this result can be found in Seade (1977), whose framework we employ below. The purpose of this note is to examine the core of this model in order to find further necessary conditions on optimal (or core) tax schedules. The utilitarian framework translates directly into a transferable utility framework in the context of cooperative game theory. We retain the incentive constraints for coalitions that may form; coalitions also must separate individuals.

Bernanke, Ben

PD September 1986. **TI** Agency Costs, Collateral, and Business Fluctuations. **AU** Bernanke, Ben; Gertler, Mark. **AA** Bernanke: Princeton University. Gertler: University of Wisconsin. **SR** National Bureau of Economic Research Working Paper: 2015; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 131, 520, 023. **KW** Business Fluctuations. Collateral. Agency Costs. Borrowing.

AB Bad economic times are typically associated with a high incidence of financial distress, e.g., insolvency and bankruptcy. This paper studies the role of changes in borrower solvency in the initiation and propagation of the business cycle. We first develop a model of the process of financing real investment projects under asymmetric information, extending work by Robert Townsend. A major conclusion here is that when the entrepreneurs who borrow to finance projects are more solvent (have more "collateral"), the deadweight agency costs of investment finance are lower. This model of investment finance is then embedded in a dynamic macroeconomic setting. We show that, first, since reductions in collateral in bad times increase the agency costs of borrowing, which in turn depress the demand for investment, the presence of these financial factors will tend to amplify swings in real output. Second, we find that autonomous factors which affect the collateral of borrowers (as in a "debt-deflation") can actually initiate cycles in output.

Bernheim, B. Douglas

PD May 1985. **TI** Pension Funding and Saving. **AU** Bernheim, B. Douglas; Shoven, John B. **AA** Department of Economics, Stanford University. **SR** National Bureau of Economic Research Working Paper: 1622; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 41. **PR** $2.00. **JE** 310, 522. **KW** Pensions. Saving. Investment. Interest Rates. Pension Funding. Loanable Funds.

AB This paper suggests that the nature of the funding of defined benefit pension plans may be an important reason why personal saving has not responded positively to the high real interest rates and tax incentives to encourage saving and investment of the last few years. From a firm's standpoint, funding the promised pension is a target, and higher rates of return permit reaching that target with lower contributions. According to the Flow of Funds Accounts of the Federal Reserve System between 1982 and 1984, net pension contributions declined from 6.02 percent of disposable personal income to 4.02 percent. The paper presents empirical information regarding pension contributions, unfunded liabilities, interest rates, and recent developments in pension funding. It specifies the target saving model of pension funding and derives the theoretical elasticity of pension contributions to changes in interest rates. It then investigates this elasticity with aggregate time series econometrics. In general, the estimated elasticities are consistent with the theory and indicate that one percentage point rise in real interest rates would, in the long run, reduce pension contributions between 20 and 30 percent. Such a large negative elasticity for such an important source of loanable funds in the economy suggests that the pensions funding mechanism should be taken into account in designing policies to increase the economy's saving and investment.

TI Comparable Worth in a General Equilibrium Model of the U.S. Economy. **AU** Beider, Perry C.; Fuchs, Victor R.; Bernheim, B. Douglas; Shoven, John E.

PD December 1986. **TI** Does the Estate Tax Raise Revenue? **AA** Department of Economics, Stanford University. **SR** National Bureau of Economic Research Working Paper: 2087; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 323, 324. **KW** Estate Tax. Taxation. Government Revenue. Intravivos Transfers. Estate Planning. Tax Reform Act. Income Tax. Bequests.

AB Proponents of transfer taxation argue that levies on gifts and estates serve the dual purposes of breaking up large concentrations of private wealth, while raising significant revenues. A number of commentators have recently questioned the first of these purported advantages, on the grounds that a variety of available estate planning techniques allow wealthy individuals to pass on vast resources essentially tax free. Most techniques entail the use of intra vivos transfers, and are particularly effective when these transfers are made as early in life as possible. In this paper, I argue that the use of these same estate planning techniques also largely neutralise the second objective of transfer taxation by depressing income tax revenues. This effect is reinforced by the tendency for estate taxation to encourage charitable bequests.

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Although it is difficult to quantify the indirect revenue effects with a high degree of precision, I find that, prior to the Tax Reform Act of 1986, these effects could easily have offset all revenues collected through the estate tax. The recent Tax Reform Act only partially vitiates this conclusions.

PD December 1986. **TI** Is Everything Neutral? **AU** Bernheim, B. Douglas; Bagwell, Kyle. **AA** Bernheim: Department of Economics, Stanford University. Bagwell: Department of Economics, Northwestern University. **SR** National Bureau of Economic Research Working Paper: 2086; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 023, 311, 321, 322, 323. **KW** Neutrality. Dynastic Family. Ricardian Equivalence. Public Finance. Prices. Distortionary Taxes.
AB In his well-known analysis of the national debt, Robert Barro introduced the notion of a "dynastic family." This notion has since become a standard research tool, particularly in the areas of public finance and macroeconomics. In this paper, we critique the assumptions upon which the dynastic model is predicated, and argue that this framework is not a suitable abstraction in contexts where the objective is to analyze the effects of public policies. We reach this conclusion by formally considering a world in which each generation consists of a large number of distinct individuals, as opposed to one representative individual. We point out that family linkages form complex networks, in which each individual may belong to many dynastic groupings. The resulting proliferation of linkages between families gives rise to a host of neutrality results, including the irrelevance of all public redistributions, distortionary taxes, and prices. Since these results are not at all descriptive of the real world, we conclude that, in some fundamental sense, the world is not even approximately dynastic. These observations call into question all policy related results based on the dynastic framework, including the Ricardian equivalence hypothesis.

Bernstam, Mikhail

PD September 1986. **TI** Competitive Human Markets, Interfamily Transfers, and Demographic Depression. **AA** Stanford University. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-54; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 43. **PR** No Charge. **JE** 841. **KW** Fertility. Interfamily Transfers. Soviet Union. Demographic Depression.
AB In the economic literature on the family, marriage is treated as a competitive market process (Becker, 1981). A similar approach is applied in this paper to reproduction. Various fertility levels are treated as outcomes of a given intensity of competition for the future of own children between families with different incomes, backgrounds and prices of children's upbringing. To secure own children's success in relation to opportunities of other children, parents may be willing to bear an additional expenditure per child. This, in turn, induces an additional substitution of the quality per child for their quantity per family. Intensification of this process by involuntary interfamily transfers may lead to further fertility reduction. These involuntary transfers comprise, among others, social security for the old age, public education, and seniority of earnings on the labor market. These transfers affect both relative incomes of parents and relative prices of children between families. They may reduce opportunities of younger families relative to those of middle-aged families. An additional substitution of the quality of children for their quantity may constitute the difference between replacement and non-replacement fertility. The paper presents cross-sectional and time series evidence from the United States and the Soviet Union to test the above hypothesis. The evidence is concentrated on showing age-specific effects of various interfamily transfers.

Bernstein, Jeffrey I.

PD August 1986. **TI** Research and Development and Intraindustry Spillovers: An Empirical Application of Dynamic Duality. **AU** Bernstein, Jeffrey I.; Nadiri, M. Ishaq. **AA** Bernstein: Carleton University. Nadiri: New York University. **SR** National Bureau of Economic Research Working Paper: 2002; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 621, 024, 522, 631. **KW** Intraindustry Spillover. Dynamic Duality. R&D Spillover.
AB In this paper we estimate a model of production and investment based on the theory of dynamic duality and particularly interested in the the effects of R&D spillovers and in calculating the social and private rates of return. We identify and estimate three effects associated with the intraindustry R&D spillover. First, costs decline as knowledge expands for the externality-receiving firms. Second, production structures are affected, as factor demands change in response to the spillover. Third, the rates of capital accumulation are affected by the R&D spillover. These cost-reducing, factor-biasing and capital adjustment effects of the spillover are estimated for four industries. The existence of R&D spillovers implies that the social and private rates of return to R&D capital differ. We estimate that the social return exceeds the private return in each industry. However, there is significant variation across industries in the differential between the social and private rates of return.

Bester, Helmut

PD November 1985. **TI** The Role of Collateral in Credit Markets with Imperfect Information. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-30; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, Deutschland. **PG** 21. **PR** No Charge. **JE** 310, 026. **KW** Credit Market Equilibrium. Imperfect Information. Collateralization. Credit Rationing.
AB The paper analyzes the structure of credit market equilibrium under imperfect information. Collateralization and credit rationing are compared as alternative means to cope with problems of adverse selection and moral hazard. It is shown that lenders may use collateral as a self-selection and incentive mechanism. Rationing occurs only if the borrowers' collaterizable wealth is too small to allow perfect sorting or to create sufficiently strong incentives. Whenever there is rationing in an equilibrium, some borrowers are charged the maximum amount of collateral.

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PD August 1986. TI Non-Cooperative Bargaining and KW Embedded Networks. Heuristic Techniques. Row

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AB It is well-known that capital can be aggregated in an economy only under very restrictive conditions. Also, it is understood that misleading or even erroneous results can be obtained in either theoretical or empirical research that treats capital as an aggregate when the conditions for aggregation are not satisfied. What is not so widely understood is that these same problems exist when aggregating goods that are efficiently allocated in an economy. For example, suppose there are many types of labour in an economy and each type of labour is efficiently allocated among firms. To form a labour aggregate in the economy requires that certain aggregation restrictions be satisfied; these are the subject of this paper. In this paper, we make two contributions to the literature on aggregating inputs and outputs in economy production functions. First, we present necessary and sufficient conditions for aggregating efficiently allocated goods under general assumptions on the technology. Second, we present a general theorem on the conditions for the existence of aggregates of both efficiently allocated goods and arbitrarily allocated goods. We use this theorem to elucidate the role of efficiency in determining the existence of aggregates.

Blanchard, Olivier J.

PD November 1985. **TI** Monopolistic Competition, Aggregate Demand Externalities and Real Effects of Nominal Money. **AU** Blanchard, Olivier J.; Kiyotaki, Nobuhiro. **AA** Blanchard: Massachusetts Institute of Technology. Kiyotaki: University of Wisconsin-Madison. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 401; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 32. **PR** No Charge. **JE** 023, 022, 131. **KW** Monopolistic Competition. Aggregate Demand Externalities. Real Effects of Nominal Money.

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.

PD November 1985. **TI** The Wage Price Spiral. **AA** Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 400; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 29. **PR** No Charge. **JE** 023, 134. **KW** Wage Price Spiral. Inflation.

AB This paper rehabilitates the old 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, the longer lasting are the effects of aggregate demand on output.

PD April 1, 1986. **TI** Hysteresis and the European Unemployment Problem. **AU** Blanchard, Olivier J.; Summers, Lawrence H. **AA** Blanchard: Massachusetts Institute of Technology. Summers: Harvard University. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 427; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PR** No Charge. **JE** 824, 821, 831, 832, 131, 122. **KW** Hysteresis. Europe. Unemployment. Wage Bargaining. Insiders/Outsiders.

AB European unemployment has been steadily increasing for the last 15 years and is expected to remain very high for many years to come. In this paper, we argue that this fact implies that shocks have much more persistent effects on unemployment than standard theories can possibly explain. We develop a theory which can explain such persistence, and which is based on the distinction between insiders and outsiders in wage bargaining. We argue that if wages are largely set by bargaining between insiders and firms, shocks which affect actual unemployment tend also to affect equilibrium unemployment. We then confront the theory to both the detailed facts of the European situation as well as to earlier periods of high persistent unemployment, such as the Great Depression in the United States.

PD June 1986. **TI** Hysteresis and the European Unemployment Problem. **AU** Blanchard, Olivier J.; Summers, Lawrence H. **AA** Blanchard: Massachusetts Institute of Technology. Summers: Harvard University. **SR** National Bureau of Economic Research Working Paper: 1950; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 023, 133, 122, 824, 832. **KW** Hysteresis. European Unemployment. Wage Bargaining. Persistant Unemployment. Depression.

AB European unemployment has been steadily increasing for the last 15 years and is expected to remain very high for many years to come. In this paper, we argue that this fact implies that shocks have much more persistent effects on unemployment than standard theories can possibly explain. We develop a theory which can explain such persistence, and which is based on the distinction between insiders and outsiders in wage bargaining. We argue that if wages are largely set by bargaining between insiders and firms, shocks which affect actual unemployment tend also to affect equilibrium unemployment. We then confront the theory to both the detailed facts of the European situation as well as to earlier periods of high persistent unemployment, such as the Great Depression in the United States.

TI Investment and Sales; Some Empirical Evidence. **AU** Abel, Andrew B.; Blanchard, Olivier J.

PD September 29, 1986. **TI** Empirical Structural Evidence on Wages, Prices and Employment in the United States. **AA** Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 431; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PR** No Charge. **JE** 134, 131,

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212, 023, 824. **KW** Wages. Prices. Employment. United States. Dynamics. Phillips Curve.
AB In this paper, I investigate United States post war price, wage and employment dynamics by identifying and estimating a price and a wage equation. I reach the following two main conclusions: Nominal wages adjust faster to prices than prices do to nominal wages. This may be taken as evidence that price inertia is more important empirically than nominal wage inertia. The wage equation implies that the effect on wage inflation of a permanent increase in unemployment, given prices, is largely temporary. This can be interpreted in various ways. One is that, if the wage equation is interpreted as a Phillips curve, both the rate of change and the level of unemployment play an important role in wage determination. The methodology of the paper is somewhat different from the traditional approach to the estimation of price and wage equations. Its spirit is to impose on the reduced form a just identifying set of restrictions. In this way, a structural interpretation is made possible, while the data are left free to speak.

PD September 30, 1986. **TI** Fiscal Increasing Returns, Hysteresis, Real Wages and Unemployment. **AU** Blanchard, Oliver J.; Summers, Lawrence H. **AA** Blanchard: Massachusetts Institute of Technology. Summers: Harvard University. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 429; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PR** No Charge. **JE** 824, 131, 133, 321. **KW** Fiscal Policy. Increasing Returns. Hysteresis. Real Wages. Unemployment. Europe.
AB European unemployment is widely regarded as a problem of excessive real wages. This view as it is usually expressed carries the disturbing implication that there is a sharp conflict between the interests of those currently employed and the unemployed because it suggests that increases in employment will require reductions in the real wages of those currently employed. The first part of this paper shows that increases in employment in Europe are likely to be associated with rising real take-home pay for workers because of fiscal increasing returns. Increases in employment and output will make possible reductions in taxes sufficiently large to offset any effects of diminishing returns to labor. The second part of the paper considers alternative explanations for the failure of nominal wages to adjust so as to restore full employment and their implications for the efficacy of fiscal policies. It concludes that under a variety of plausible conditions tax cuts would succeed in stimulating employment.

PD September 30, 1986. **TI** Hysteresis in Unemployment. **AU** Blanchard, Olivier J.; Summers, Lawrence H. **AA** Blanchard: Massachusetts Institute of Technology. Summers: Harvard University. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 430; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PR** No Charge. **JE** 821, 824, 131, 134. **KW** Hysteresis. Unemployment Membership. Wages. Duration Theories.
AB The recent European experience of high persistent unemployment has led to the development of theories of unemployment hysteresis embodying the idea that the equilibrium unemployment rate depends on the history of the actual unemployment rate. This paper summarizes two directions of research on hysteresis that appear especially promising. Membership theories are based on the distinction between insiders and outsiders and explore the idea that wage setting is largely determined by firms' incumbent workers rather than by the unemployed. Duration theories explore the idea that the long term unemployed exert much less downwards pressure on wages than do the short term unemployed.

PD October 1986. **TI** Hysteresis in Unemployment. **AU** Blanchard, Olivier J.; Summers, Lawrence H. **AA** Blanchard: Massachusetts Institute of Technology. Summers: Harvard University. **SR** National Bureau of Economic Research Working Paper: 2035; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 820, 813. **KW** Unemployment Hysteresis. Persistant Unemployment. Europe.
AB The recent European experience of high persistent unemployment has led to the development of theories of unemployment hysteresis embodying the idea that the equilibrium unemployment rate depends on the history of the actual unemployment rate. This paper summarizes two directions of research on hysteresis that appear especially promising. Membership theories are based on the distinction between insiders and outsiders and explore the idea that wage setting is largely determined by firms' incumbent workers rather than by the unemployed. Duration theories explore the idea that the long term unemployed exert much less downwards pressure on wages than do the short term unemployed.

PD October 1986. **TI** Fiscal Increasing Returns, Hysteresis, Real Wages and Unemployment. **AU** Blanchard, Olivier J.; Summers, Lawrence H. **AA** Blanchard: Massachusetts Institute of Technology. Summers: Harvard University. **SR** National Bureau of Economic Research Working Paper: 2034; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 820, 023, 320. **KW** Unemployment. Hysteresis. Real Wages. Fiscal Increasing Returns. Europe.
AB European unemployment is widely regarded as a problem of excessive real wages. This view as it is usually expressed carries the disturbing implication that there is a sharp conflict between the interests of those currently employed and the unemployed because it suggests that increases in employment will require reductions in the real wages of those currently employed. The first part of this paper shows that increases in employment in Europe are likely to be associated with rising real take-home pay for workers because of fiscal increasing returns. Increases in employment and output will make possible reductions in taxes sufficiently large to offset any effects of diminishing returns to labor. The second part of the paper considers alternative explanations for the failure of nominal wages to adjust so as to restore full employment and their implications for the efficacy of fiscal policies. It concludes that under a variety of plausible conditions tax cuts would succeed in stimulating employment.

PD October 1986. **TI** Empirical Structural Evidence on Wages, Prices and Employment in the US.

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AA Massachusetts Institute of Technology. **SR** National Bureau of Economic Research Working Paper: 2044; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 824, 134, 131. **KW** Wage Dynamics. Price Dynamics. Wage Inflation.

AB In this paper, I investigate United States post war price, wage and employment dynamics by identifying and estimating a price and a wage equation. I reach the following two main conclusions: Nominal wages adjust faster to prices than prices do to nominal wages. This may be taken as evidence that price inertia is more important empirically than nominal wage inertia. The wage equation implies that the effect on wage inflation of a permanent increase in unemployment, given prices, is largely temporary. This can be interpreted in various ways. One is that, if the wage equation is interpreted as a Phillips curve, both the rate of change and the level of unemployment play an important role in wage determination. The methodology of the paper is somewhat different from the traditional approach to the estimation of price and wage equations. Its spirit is to impose on the reduced form a just identifying set of restrictions. In this way, a structural interpretation is made possible, while the data are left free to speak.

TI Investment and Sales: Some Empirical Evidence. **AU** Abel, Andrew B.; Blanchard, Olivier J.

Blanchflower, David G.

PD October 1986. **TI** Profit-Sharing - Can It Work? **AU** Blanchflower, David G.; Oswald, Andrew J. **AA** Blanchflower: Department of Economics, University of Surrey. Oswald: Centre for Labour Economics, London School of Economics. **SR** London School of Economics Centre for Labour Economics Discussion Paper: 255; Centre for Labour Economics, London School of Economics, Houghton Street, London, WC2A 2AE, U.K. **PG** 28. **PR** No Charge. **JE** 820, 023. **KW** Profit Sharing.

AB The paper provides a survey of the recent literature on the economic consequences of profit sharing. It concludes that there is little evidence to support the view that profit sharing would have macroeconomic benefits.

Blank, Rebecca M.

PD September 1986. **TI** How Important is Welfare Dependence? **AA** Woodrow Wilson School, Princeton University. **SR** National Bureau of Economic Research Working Paper: 2026; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 910. **KW** Welfare Dependence. AFDC. Income Maintenance Experiment.

AB This paper develops a theoretical model of welfare dependence, in which current participation in AFDC induces greater future use of the program. One prediction is duration dependence in welfare spells. This is tested using 6 years of monthly data on time spent in the AFDC program among female household heads in the control group of the Seattle/Denver Income Maintenance Experiment. A variety of duration dependence models are estimated, investigating the effect of different functional form assumptions, as well as the impact of accounting for time-varying covariates, competing risks, and data heterogeneity in the estimates. Monthly AFDC participation does not show strong evidence of duration dependence. In fact, during the initial months on the program the probability of leaving the program, conditional on past participation, appears to be flat or increasing. After about eight months the probability of leaving starts to decrease, but it becomes virtually flat after 18 to 24 months. There is some indication that there are two distinct groups that utilize welfare: one group, which has a very low probability of leaving welfare and whose rate of exit changes little over time; and a second group, which is more affected by time on the program. The propensity of black women to experience longer AFDC spells appears totally due to their lower probability of leaving AFDC via marriage, rather than any difference in leaving via earnings or other income increases. However, even where duration dependence is present in the data, this is not adequate evidence for program-induced welfare dependence. The final part of the paper presents a model of earnings change and AFDC participation which contains no welfare dependence effects. Welfare spells simulated from this model show duration dependence effects which appear quite similar to those observed in the actual data.

Blinder, Alan S.

PD May 1985. **TI** Credit Rationing and Effective Supply Failures. **AA** Department of Economics, Princeton University. **SR** National Bureau of Economic Research Working Paper: 1619; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 39. **PR** $2.00. **JE** 023, 311, 522, 321, 134, 131. **KW** Credit Rationing. Investment. Monetary Policy. Fiscal Policy. Capital. Crowding Out.

AB This paper presents two macro models in which central bank policy has real effects on the supply side of the economy due to credit rationing. In each model, there are two possible regimes, depending on whether credit is or is not rationed. Starting from an unrationed equilibrium, either a large enough contraction of bank reserves or a large enough rise in aggregate demand can lead to rationing. Monetary (fiscal) policy is shown to be more (less) powerful when there is rationing than when there is not. In the first model, credit rationing reduces working capital. There is a "failure of effective supply" in that credit-starved firms must reduce production below national supply. The resulting excess demand in the goods market may in turn drive prices up and reduce the real supply of credit further, leading to further reductions in supply and a stagflationary spiral. In the second model, credit rationing reduces investment, which cuts into both aggregate demand and supply. Despite the effect on demand, stagflationary instability is still possible. A rise in government spending crowds out investment in the rationed regime but crowds in investment in the unrationed regime.

Blofeld, Mark

PD 1986. **TI** Portfolio Balance, International Debt and Country Risk. **AU** Blofeld, Mark; McKenzie, George; Thomas, Stephen. **AA** University of Southampton. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 8623;

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Department of Economics, University of Southampton, Southampton 509 5NH, England. **PG** 22. **PR** No Charge. **JE** 443, 121. **KW** Loan Risk. Developing Country Loans. Risk Assessment.

AB We construct a logit model to help in the assessment of sovereign risk; it requires variables which are readily available with a short time lag, accurately measured, and possess unambiguous theoretical interpretations acceptable to financial economists. Whatever the underlying macro indicators may suggest for a country, it is the cash-flow position which is of critical importance; to the extent that this is reflected in our liquidity and maturity structure variables, they are clearly superior to the more ambiguous macro variables. We require our model to indicate the likelihood of restructuring within a six-month period; this is obviously a much more demanding requirement than that for a one-year data period. However, the error rates are comparable with other studies which in addition use much longer lists of (largely unobservable) variables. Our approach provides a parsimonious, coherent and practical approach to predicting the probability of developing country debt restructuring which can be easily extended to additional countries since the required data is readily available from the IMF and BIS with a short time lag.

Blomstrom, Magnus

PD November 1986. **TI** The Export Performance of Swedish and United States Multinationals. **AU** Blomstrom, Magnus; Lipsey, Robert E. **AA** Blomstrom: New York University and National Bureau of Economic Research. Lipsey: Queen's College and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2081; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 442, 441, 431, 611, 421, 422. **KW** Multinationals. Sweden. United States. Exports. Export Decline.

AB While the United States and Sweden both lost more than 20 per cent of their shares of world and developed countries' exports of manufactures over the 15 years or so after the mid-1960's, the export shares of their multinational firms stayed fairly stable or even increased. The multinationals, while first increasing and then holding fairly constant their shares of exports by their home countries, raised the proportion of their worldwide exports that they supplied from their overseas affiliates. These developments suggest that the declining trade shares of the United States and Sweden were not due mainly to deterioration in the innovativeness or inventiveness of American and Swedish firms or declines in their management ability or in their technological capabilities, but rather to economic developments in the firms' home countries. The finding that firms have done better as exporters than their home countries is strengthened when we look at different industry groups. In both the United States and Sweden, and in all industry groups, with one exception, the multinationals' export shares increased relative to those of their home countries. The margins were often wide, and were mostly larger for Swedish firms than for United States firms. In general, though the basic story was quite similar for the United States and Sweden, there were some notable differences. One was that the share of exports originating in affiliates was lower for Sweden than for the United States. To a large extent, this difference in the siting of export production reflected the much greater export orientation of Swedish parents relative to United States parents, presumably a consequence of the relatively small size of the Swedish domestic market. Another difference between United States and Swedish multinationals was that while the United States firms' share in world manufacturing exports remained stable over the studied period, the Swedish firms' share rose by 14 per cent. We are so far not in a position to say whether this was because Swedish firms increased their competitiveness more than United States firms or because there was a higher conversion of Swedish firms into multinational status.

PD December 1986. **TI** Firm Size and Foreign Direct Investment. **AU** Blomstrom, Magnus; Lipsey, Robert E. **AA** Blomstrom: C. V. Starr Center for Applied Economics, New York University and National Bureau of Economic Research, New York. Lipsey: Queen's College and Graduate Center, City University of New York and National Bureau of Economic Research, New York. **SR** National Bureau of Economic Research Working Paper: 2092; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 441, 442, 522, 521, 611. **KW** Firm Size. Direct Foreign Investment. Foreign Production. Sweden. United States.

AB This paper examines the importance of firm size in explaining foreign direct investment with data from American and Swedish firms. The results suggest that firm size only has a threshold effect on foreign investment, an effect on the decision to invest abroad. Once, however, a firm has jumped the initial barriers to foreign production, size has no effect on the fraction of the firm's resources devoted to foreign activity. Among firms that invest in foreign production large firms do not appear to have any particular advantage over small investing firms.

Bloom, David E.

PD June 1986. **TI** An Analysis of the Selection of Arbitrators. **AU** Bloom, David E.; Cavanagh, Christopher L. **AA** Bloom and Cavanagh: Harvard University. **SR** National Bureau of Economic Research Working Paper: 1938; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 830, 026. **KW** Selection of Arbitrators. Bargaining. Union-Employer Arbitration.

AB This paper analyses data on union and employer rankings of different panels of arbitrators in an actual arbitration system. A random utility model of bargainer preferences is developed and estimated. The estimates indicate that unions and employers have similar preferences, in favor of lawyers, more experienced arbitrators, and arbitrators who seem to have previously favored their side. Alternative rankings models, which are estimated to test whether bargainers rank arbitrators strategically, reveal no evidence of strategic behavior.

Bonnisseau, Jean Marc

PD July 1986. **TI** Fixed-Point Theorems and Morse's Lemma For Lipschitsian Functions. **AU** Bonnisseau, Jean Marc; Cornet, Bernard. **AA** Centre for Operations

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Research and Econometrics, Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 8628; Centre for Operations Research and Econometrics, Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 16. **PR** No Charge. **JE** 213. **KW** Fixed-Point Theorem. Lipschitzian Functions. Morse's Theory. Generalized Gradients.

AB We prove a fixed-point theorem for set-valued mappings defined on a nonempty compact subset X of IR sup n which can be represented by inequality constraints, f locally Lipschitzian and satisfying a nondegeneracy assumption outside of X. This class of sets extends significantly the class of convex, compact sets with a nonempty interior. Topological properties of such sets X are proved (continuous deformation retract of a ball, acyclicity) as a consequence of a generalization of Morse's lemma for Lipschitzian real-valued function defined on IR sup n a result also of interest for itself.

Bordo, Michael D.

PD August 1986. **TI** Why Did The Bank Of Canada Emerge In 1935? **AU** Bordo, Michael D.; Redish, Angela. **AA** Department of Economics, University of British Columbia. **SR** University of British Columbia Department of Economics Discussion Paper: 86-29; Department of Economics, University of British Columbia #997-1873 East Mall, Vancouver, British Columbia CANADA V6T 1Y2. **PG** 18. **PR** $0.20 per page Canadian to other than educational institutions. **JE** 310, 042. **KW** Central Bank. Canada. Banking System.

AB The Bank of Canada began operations in March 1935, considerably later than the central banks of most other Western industrial economies. This paper examines the two questions suggested by this event, why did Canada not develop a central bank earlier, and, that given, why did the central bank evolve at all?

PD November 1986. **TI** The Global Velocity Curve 1952-1982. **AU** Bordo, Michael D.; Jonung, Lars. **AA** Bordo: University of South Carolina. Jonung: Lund University. **SR** National Bureau of Economic Research Working Paper: 2074; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 311, 441, 112. **KW** Monetization. Velocity of Money. Financial Development.

AB This paper provides evidence and an explanation for an empirical regularity in the income velocity of money. Based on a cross country comparison in the post World War II period of 84 countries arrayed from very low to very high per capita income, velocity displays a U shaped pattern. This observed cross country pattern is very similar to one observed in an earlier study by the authors for a number of advanced countries for over a century. The U-shaped pattern of velocity behavior is explained by an approach which stresses the influence of institutional factors. On a secular basis the downward trend in velocity is due to a process of monetization while the upward trend is explained by financial development. On a cross country basis industrialized countries with well developed financial systems should generally display a rising trend in velocity while poor countries at an earlier stage of economics growth should as a rule have falling trends. Velocity in economies "in between" should exhibit a fairly flat pattern with a weak positive or negative trend.

PD November 1986. **TI** Why Did the Bank of Canada Emerge in 1935? **AU** Bordo, Michael; Redish, Angela. **AA** Bordo: University of South Carolina. Redish: University of British Columbia. **SR** National Bureau of Economic Research Working Paper: 2079; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 042, 311, 312. **KW** Bank of Canada. Canadian Monetary System. Political Pressure. Central Bank.

AB Three possible explanations for the emergence of the Canadian central bank in 1935 are examined: that it reflected the need of competitive banking systems for a lender of the last resort; that it was necessary to anchor the unregulated Canadian monetary system after the abandonment of the gold standard in 1929; and that it was a response to political rather than purely economic pressures. Evidence from a variety of sources (contemporary statements to a Royal Commission, the correspondence of chartered bankers, newspaper reports, academic writings and the estimation of time series econometric models) rejects the first two hypotheses and supports the third.

Borjas, George J.

PD June 1986. **TI** The Self-Employment Experience of Immigrants. **AA** University of California, Santa Barbara. **SR** National Bureau of Economic Research Working Paper: 1942; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 820, 812, 841, 851. **KW** Self-Employment. Immigrants. Experience.

AB Self-employment is an important aspect of the immigrant experience in the labor market. Self-employment rates for immigrants exceed 15 percent for some national groups. This paper addresses three related questions on the self-employment experience of immigrants. First, how do self-employment rates of immigrants compare to those of native-born men? Second, is there an "assimilation" effect on the self-employment propensity of immigrants? Finally, are the more recent waves of immigrants facing different self-employment opportunities than the earlier waves? Using the 1970 and 1980 United States Censuses, the analysis shows that indeed self-employment rates of immigrants exceed those of native-born men; that there is a strong, positive impact of assimilation on self-employment rates; and that more recent waves of immigrants are opting with increasing frequency for the self-employment option.

PD September 1986. **TI** Immigrants, Minorities, and Labor Market Competition. **AA** University of California Santa Barbara. **SR** National Bureau of Economic Research Working Paper: 2028; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 823, 841, 917, 821, 824. **KW** Immigrants. Minorities. Labor Market Competition.

AB This paper analyzes the extent of labor market competition among immigrants, minorities and the native population. The study reveals that immigrants tend to be

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substitutes with some labor market groups, and complements with others. However, all these effects of shifts in immigrant supply on the earnings of native-born men are numerically very small, so that even if immigrants are substitutes with some native-born groups their numerical impact on the native-born wage is trivial. In addition, increases in the supply of immigrants do have a sizable impact on the earnings of immigrants themselves. Increases of 10 percent in the supply of immigrants reduce the immigrant wage by about 10 percent. Thus the main competitors of immigrants in the labor market are other immigrants.

Bos, Dieter

PD May 1986. **TI** Privatisierung offentlicher Unternehmen: Effizienzgewinne oder Preissteigerungen? **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-46; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 13. **PR** No Charge. **JE** 024, 614. **KW** Public Enterprises. Privatization. Profit Maximization. Welfare Maximization.

PD May 1986. **TI** A Theory of the Privatization of Public Enterprises. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-45; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, Deutschland. **PG** 23. **PR** No Charge. **JE** 614, 611. **KW** Privatization. Efficiency. Distributional Effects. Allocative Effects. Public Enterprises.

AB In recent years there has been considerable controversy over the privatization of public enterprises in countries with emphatically conservative governments. The development in Great Britain is well-known; the United States is undergoing a similar experience in its deregulation debates. In both countries the debate has led to political consequences. In Great Britain, the privatization of telecommunications (commencing 1985) constitutes a decisive break with the principle and practice of public provision of vital services and even paves the way for a possible privatization of electricity and gas. In France, the socialist nationalization activities of the early eighties are going to be reversed by the recently installed conservative government. There are many arguments in favor of privatization. The present paper concentrates on those two arguments which have been prevalent in the economic discussion of the topic: increasing efficiency of the relevant firms as an allocational concern, and widespread private ownership as a distributional concern.

Boyd, John H. III

PD October 21, 1986. **TI** Recursive Utility and the Ramsey Problem. **AA** University of Rochester. **SR** University of Rochester Center for Economic Research Working Paper: 60; Department of Economics, University of Rochester, Rochester, NY 14627. **PR** No Charge. **JE** 022, 213. **KW** Optimal Capital Accumulation. Recursive Preferences. Transversality. Optimal Paths. Time Preference. Aggregator.

AB This paper examines the existence, continuity and characterization of optimal paths under Koopmans' "time-stationary" or "recursive" preferences. Such infinite-lived agents have flexible time preference. Their current utility is defined as a fixed function (the aggregator) of current consumption and future utility. Given a suitable aggregator, a useful refinement of the Contraction Mapping Theorem generates the utility function. A limiting argument, analogous to partial summation, constructs an upper semicontinuous utility function for an even broader class of aggregators. The classical Weierstrass method then demonstrates the existence of optimal paths. Under somewhat more stringent conditions on the aggregator and technology, optimal paths are continuous in the initial capital stocks, and are characterized through the Euler equations and a transversality condition.

PD December 3, 1986. **TI** Symmetries, Equilibria and the Value Function. **AA** Department of Economics, University of Rochester. **SR** University of Rochester Center for Economic Research Working Paper: 62; Department of Economics, University of Rochester, Rochester, NY 14627. **PR** No Charge. **JE** 023, 213. **KW** Stochastic Dynamic Programming. Portfolio Choice. Optimal Growth. Dynamic Equilibria. Invariance.

AB This paper presents a geometric approach (symmetries) to dynamic economic problems that integrates the solution procedure with the economics of the problem. Techniques for using symmetries are developed in the context of portfolio choice, optimal growth, and dynamic equilibria. Information on preferences, budget sets, and technology is combined to explicitly compute the solution. By focusing on the geometry of the underlying economic structure, the symmetry method can handle many types of problems with equal ease. Given an appropriate economic structure, it is immaterial whether the problem is in continuous or discrete time, is deterministic or stochastic with a Brownian, Poisson or other process, uses a finite or infinite time horizon, or even whether the rate of time preference is fixed or variable. These details are unimportant as long as the geometry is unchanged. All cases are treated in a unified manner. A major strength of the symmetry technique is its ability to ferret out the solutions to complex models with simple underlying economic structures. For example, a previously unsolved optimal growth model with both time-varying discount rates and technology is easily solved via symmetries.

Brander, James A.

PD October 1986. **TI** International Oligopoly and Asymetric Labor Market Institutions. **AU** Brander, James A.; Spencer, Barbara. **AA** University of British Columbia. **SR** National Bureau of Economic Research Working Paper: 2038; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 442, 611, 421, 422, 823, 821, 822. **KW** International Oligopoly. Asymmetric Labor Markets. Stackelberg Leadership.

AB Asymmetries in labor relations can have important effects on imperfectively competitive rivalries between firms. Such asymmetries are particularly striking in cross-country comparisons and are therefore of greatest interest in international markets. Using a simple duopoly model, we focus on two asymmetries. First, one firm may face a noncooperative union and second, institutional factors may

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allow one firm to commit itself to particular labor input before its rival sets output, giving it a natural Stackelberg leadership role. We examine the trade policy incentives resulting from these labor asymmetries, focusing on profit shifting tariffs, quotas and subsidies.

Buchner, Heinz Jurgen

PD March 1985. **TI** Public Pricing with Disequilibria on the Labor Market. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A 32; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, Deutschland. **PG** 11. **PR** No Charge. **JE** 821, 614, 831. **KW** Public Pricing. Disequilibria. Labor Market. Unemployment. Germany. Unions.

AB One of the most important assumptions in the theory of public sector pricing in the tradition of Boiteux is the assumption, that the labor market is in equilibrium. But welfare maximising public pricing with equilibrium on the labor market does not seem to be a very realistic description of today's economic situation. In January 1985 more than 9 percent of the employees in Germany are unemployed. Some German politicians argue that the public sector has a special responsibility for employment. Trade Unions present their calls for jobs security very strongly especially in the public sector. Therefore, it will necessary to model the influence of unemployment on public pricing, instead of assuming equilibrium on the labor market. In the following I will model public sector pricing in a Keynesian equilibrium with rationed labor and commodity markets.

PD October 1985. **TI** Eine Okonomische Theorie Der Steuerhintersiehung: Der Einflub staatlicher Parameteranderungen auf das Verhalten von Individuen. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-33; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 10. **PR** No Charge. **JE** 024, 323, 321.

PD December 1985. **TI** Positive Wohlfahrtseffekte Eines Ineffisienten Arbeitseinsatzes im Offentlichen Sektor. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-34; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, Deutschland. **PG** 17. **PR** No Charge. **JE** 024, 321, 614.

TI The Impact of Public Expenditure on Tax Evasion: an Experimental Approach. **AU** Becker, Winfried; Buchner, Heins Jurgen; Sleeking, Simon.

Bucovetsky, Sam

PD August 1986. **TI** Nash Equilibrium With Tax Competition. **AA** University of Western Ontario. **SR** University of Western Ontario Department of Economics Research Report: 8610; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, Canada N6A 5C2. **PG** 52. **PR** No Charge. **JE** 022, 026, 323. **KW** Tax Competition. Nash Equilibrium. Jurisdictions.

AB Tax competition is modelled as a game played by a finite number of jurisdictions, among which the tax base is perfectly mobile. Jurisdictions play Nash in tax rates. Existence of equilibrium is established, under fairly strong assumptions. Smaller jurisdictions are shown to levy lower taxes. The convergence to a "small open economy" of a jurisdiction as its share of the population shrinks is analyzed.

Buiter, Willem H.

PD August 1986. **TI** A "Gold Standard" Isn't Viable Unless Supported By Sufficiently Flexible Monetary and Fiscal Policy. **AA** Yale University. **SR** Centre for Economic Policy Research Discussion Paper: 125; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. **PG** 46. **PR** 1 pound ($2.00) individuals; 1.50 pounds ($3.00) companies, libraries, institutions. **JE** 311, 321, 432, 431. **KW** Gold Standard. Monetary Policy. Fiscal Policy. Public Debt. Credit Expansion.

AB The paper studies an idealized gold standard in a two-country setting. Unless national policies for domestic credit expansion (dce) are flexible enough to offset the effect of money demand shocks on international gold reserves, the gold standard collapses with certainty in finite time through a speculative selling attack against one of the currencies. Various policies for postponing a collapse are considered. When a dce policy is sufficiently responsive and eliminates the danger of a run on a country's reserves, the exogenous shocks disturbing the system, which previously were reflected in reserve flows, now show up in the behaviour of the public debt. Unless the primary (non-interest) government deficit is permitted to respond to these shocks, the public debt is likely to rise (or fall) to unsustainable levels. The idealized gold standard analysed in this paper is only viable through the active and flexible use of monetary and fiscal policy.

PD September 1986. **TI** Death, Population Growth and Debt Neutrality. **AA** Yale University. **SR** National Bureau of Economic Research Working Paper: 2027; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 320, 841, 820, 023. **KW** Death. Population Growth. Debt Neutrality. Public Spending.

AB Debt neutrality is said to occur if, given a program for public spending on current goods and services over time, the real equilibrium of the economy (private consumption, investment, relative prices, etc.) is independent of the pattern of government borrowing and lump-sum taxation over time. The paper brings together work of Blanchard on individual uncertain lifetimes and debt neutrality and Weil on population growth and debt neutrality. It is shown that there will be debt neutrality if and only if the sum of the rate of growth of population and the individual probability of death equals zero. If this condition holds, non-zero rates of growth of labor productivity will not destroy debt neutrality.

PD September 1986. **TI** Structural and Stabilization Aspects of Fiscal and Financial Policy in the Dependent Economy. **AA** Yale University. **SR** National Bureau of Economic Research Working Paper: 2023; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 133, 311, 321, 023. **KW** Stabilization. Fiscal Policy. Financial Policy. Dependent Economy. Balanced Budget Rules.

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AB The paper considers the response of a small, open dependent economy to a variety of fiscal and financial shocks as well as the influence of alternative budget balancing rules on the response of the system to such external shocks as a change in the world interest rate. The approach allows for both uncertain individual lifetimes and population growth, using a slightly generalized version of the Yaari-Blanchard model of consumer behavior. Debt neutrality does not prevail unless the sum of the population growth rate and the individual's probability of death equals zero. The government spends on traded and non-traded goods and raises tax revenue both through a lump sum tax and through a distortionary tax on the production of traded goods. Even though the tax on the production of traded goods is the only conventional distortion in the model, changes in this tax rate will have first order real income effects even when the distortion is evaluated at a zero tax rate, as long as the individual's subjective pure rate of time preference differs from the interest rate. This can occur even in well-behaved steady states of the Yaari-Blanchard model, as long as the population growth rate plus the probability of death differ from zero. This "intrinsic" distortion effectively causes second-best arguments to apply even when there is only one conventional distortion. Even in the absence of government budget deficits, fiscal choices relating to the composition of public spending and the structure of taxation have important short-term and long-term consequences for the real exchange rate, the sectoral allocation of production, the level and composition of private consumption, the current account (in the short run) and the nation's stock of claims on the rest of the world in the long run.

PD October 1986. **TI** Granger Causality and Policy Ineffectiveness: A Rejoinder. **AA** Yale University. **SR** National Bureau of Economic Research Technical Paper: 61; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 211, 311, 321, 023. **KW** Granger Causality. Policy Ineffectiveness Tests.

AB In an earlier paper "Granger-causality and Policy Effectiveness," Economica '1984, I showed that for a policy instrument x to Granger-cause some target variable y, it is not necessary for x to be useful in controlling y. (The argument that it is not sufficient was already familiar, e.g. from the work of Sargent). Using a linear rational expectations model I showed that x would fail to Granger-cause y (while y did, in some cases, Granger-cause x) if x were set by a variety of optimal, time-consistent or ad hoc policy feedback rules. Yet in all the examples, x was an effective policy instrument. In response to some comments by Professor Granger, I now show that my earlier results are unaffected when the following 3 concessions to "realism" are made: 1. Controllers do not have perfect control of the instruments (this was already allowed for in my earlier paper). 2. Governments may use a different information set to determine instruments than that used by the public. 3. The controller may not have perfect specifications and estimates of models of the economy. The analysis confirms that Granger-causality tests are uninformative about the presence, absence, degree or kind of policy (in)effectiveness.

PD October 1986. **TI** Fiscal Prerequisites for a Viable Managed Exchange Rate Regime: A Non-Technical Eclectic Introduction. **AA** Yale University. **SR** National Bureau of Economic Research Working Paper: 2041; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 023, 430, 320. **KW** Budget Identities. Solvency Constraint. Inflation. Managed Exchange Rate Regime.

AB The paper first reviews the budget identities of the fiscal and monetary authorities and the solvency constraint or present value budget-constraint of the consolidated public sector, for closed and open economies. It then discusses the new conventional wisdom concerning the fiscal roots of inflation and the budgetary prerequisites for generating and stopping hyperinflation. The popular rational expectations "Unpleasant Monetarist Arithmetic" model of Sargent and Wallace has ambiguous inflation implications from an increase in the fundamental deficit and is incapable of generating hyperinflation. The only runaway, explosive or unstable behavior it can exhibit is "hyperdeflation" In the open economy, the need to maintain a managed exchange rate regime does not impose any constraint on the growth rate of domestic credit, arising through the government's need to remain solvent. Obstfeld's proposition to the contrary is due to the omission of government bonds and borrowing. There is not yet any "deep structural" theory justifying the (exogenous) lower bounds on the stock of foreign exchange reserves characteristic of the collapsing exchange rate literature. Absent such a theory of "international liquidity," one cannot model satisfactorily a foreign exchange crisis that is not at the same time a government solvency crisis. Given such a lower bound, the existence or absence of a pecuniary opportunity cost to holding reserves is shown to condition the fiscal and financial actions consistent with prolonged survival of the managed exchange rate regime.

Bulow, Jeremy

PD December 1986. **TI** A Constant Recontracting Model of Sovereign Debt. **AU** Bulow, Jeremy; Rogoff, Kenneth. **AA** Bulow: Graduate School of Business, University of Chicago. Rogoff: Department of Economics, University of Wisconsin. **SR** National Bureau of Economic Research Working Paper: 2088; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 433, 443, 441, 432, 312. **KW** Recontracting. Sovereign Debt. Debt Repudiation. Debt Defaut. Bargaining. Interest Rates.

AB Few sovereign debtors have repudiated their obligations entirely. But despite the significant sanctions at the disposal of lenders, many borrowers have been able to consistently negotiate for reduced repayments. This paper presents a model of the on-going bargaining process that determines repayment levels. We derive a bargaining equilibrium in which countries with large debts achieve negotiated partial default. The ability to credibly threaten more draconian penalties in the event of repudiation may be of no benefit to lenders. Furthermore, unanticipated increases in world interest rates may actually help the borrowers by making lenders more impatient for a negotiated settlement. Finally, Western governments may be induced to make payments to facilitate reschedulings

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even though efficient agreements will be reached without their intervention.

Burgess, Simon M.

PD November 1986. **TI** Employment Adjustment In UK Manufacturing. **AA** Saint Antony's College and Institute of Economics and Statistics. **SR** Oxford Applied Economics Discussion Paper: 16; Institute of Economics and Statistics, Saint Cross Building, Manor Road, Oxford, OX1 3UL. **PG** 67. **PR** No Charge. **JE** 820, 831, 631. **KW** Labor Demand. Adjustment Costs. Hiring/Firing Rate. Employment Protection Legislation. Britain.

AB The analysis differs from previous studies of labour demand in its explicit inclusion of the costs to the firm of adjusting its workforce. These costs include institutional factors such as employment protection legislation and unions, and market factors such as the degree of slack in the labour market. Two questions were addressed: firstly, what is the quantitative impact of these forces and secondly, does their inclusion improve the fit of a labour demand function. The results showed these factors to have a strong influence on the rate of hiring/firing and to improve significantly on conventional labour demand functions.

Calomiris, Charles W.

PD November 1986. **TI** Growing in Debt: The 'Farm Crisis' and Public Policy. **AU** Calomiris, Charles W.; Hubbard, R. Glenn; Stock, James H. **AA** Calomiris and Hubbard: Northwestern University. Stock: Hoover Institution, Stanford University. **SR** National Bureau of Economic Research Working Paper: 2085; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 710, 421, 312, 315, 521. **KW** Farms. Farm Crisis. Agricultural Debt. Agricultural Policy.

AB United States farms, and with them agricultural lending institutions, are currently experiencing their most severe stress since the 1930s. As international trade in farm products has expanded, so has the sensitivity of farm incomes to fluctuations in domestic and world economic conditions. Thus, while price stabilization, acreage reduction, and related policies in place since the 1930s were relatively successful in stabilizing farm income during the 1950s and 1960s, they are likely to be less effective in achieving this goal in the future. Our analysis of state-level panel data indicates that disruptions in agricultural credit markets can have real effects on farm output. That finding is consistent with the conventional wisdom that, unlike credit markets for large firms or for firms for which monitoring is less costly, agricultural financial markets require close customer arrangements. Local financial institutions, for which such relationships are best developed, are often unable for institutional reasons to diversify their loan risks either within agriculture or across other geographically separated activities. The deviations from perfect markets indicate an economic rationale -- in addition to the usual political, social, and national defense rationales -- for government intervention in agricultural credit markets. Our empirical evidence supports the view that maintaining customer relationships in agricultural finance is important. Because of the Farm Credit System's ability to pool agricultural loan risks nationally and its access to national capital markets, it will continue to be an important lender in agricultural credit markets.

Campbell, John Y.

PD May 1986. **TI** Are Output Fluctuations Transitory? **AU** Campbell, John Y.; Mankin, N. Gregory. **AA** Campbell: Princeton University. Mankin: National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 1916; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 130, 211, 023. **KW** Output Fluctuations. Persistence of Output Shocks. Long Run Forecasts.

AB According to the conventional view of the business cycle, fluctuations in output represent temporary deviations from trend. The purpose of this paper is to question this conventional view. If fluctuations in output are dominated by temporary deviations from the natural rate of output, then an unexpected change in output today should not substantially change one's forecast of output in, say, ten or twenty years. Our examination of quarterly post-war United States data leads us to be skeptical about this implication. We find that a unexpected change in real GNP of one percent should change one's forecast by over one percent over a long horizon. While it is obviously imprudent to make definitive judgments regarding theories on the basis of one stylized fact alone, we believe that the great persistence of output shocks documented in this paper is an important and often neglected feature of the data that should more widely be used for evaluating theories of economic fluctuations.

PD June 1986. **TI** The Term Structure of Euromarket Interest Rates: An Empirical Investigation. **AU** Campbell, John Y.; Clarida, Richard H. **AA** Campbell: Princeton University. Clarida: Yale University. **SR** National Bureau of Economic Research Working Paper: 1946; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 310, 430, 122, 026. **KW** Term Structure. Euromarket Interest Rates. Risk Pemia. Foreign Assets.

AB This paper is an empirical investigation of the predictability and comovement of risk premia in the term structure of Euromarket interest rates. We show that variables which have been used as proxies for risk premia on uncovered foreign asset positions also predict excess returns in Euromarket term structures, while variables which have been used as proxies for risk premia in the term structure also predict excess returns on taking uncovered foreign asset positions. These findings suggests that risk premia in the Euromarket term structures and on uncovered foreign asset positions move together. We test formally the hypothesis that risk premia on uncovered 3-month EuroDM and Eurosterling deposits move in proportion to a single latent variable. We are unable to reject this hypothesis. We are also unable to reject the hypothesis that the risk premia on these three strategies and those on rolling over 1-month Eurosterling (EuroDM) deposits versus holding a 3-month Eurosterling (EuroDM) deposit move in proportion to a single latent variable. The single latent variable model can be interpreted

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atheoretically, as a way of characterizing the extent to which predictable asset returns "move together"; or it can be interpreted as in Hansen and Hodrick (1983) and Hodrick and Srivastava (1983) as a specialization of the International Capital Asset Pricing Model in which assets have constant betas on a single, unobservable benchmark portfolio.

PD December 1986. **TI** The Dividend-Price Ratio and Expectations of Future Dividends and Discount Factors. **AU** Campbell, John Y.; Shiller, Robert J. **AA** Campbell: National Bureau of Economic Research. Shiller: Yale University. **SR** Yale Cowles Foundation Discussion Paper: 812; Cowles Foundation for Research in Economics, 30 Hilhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 38. **PR** No Charge. **JE** 313, 213, 522. **KW** Dividend-Price Ratio. Rational Expectations. Present Value. Vector Autoregression. Dividends. Stock Prices. Discount Rate.

AB A linearization of a rational expectations present value model for corporate stock prices produces a simple relation between the log dividend-price ratio and mathematical expectations of future log real dividend changes and future real discount rates. This relation can be tested using vector autoregressive methods. Three versions of the linearized model, differing in the measure of discount rates, are tested for United States time series 1871-1986: versions using real interest rate data, aggregate real consumption data, and return variance data. The results yield a metric to judge the relative importance of real dividend growth, measured real discount rates and unexplained factors in determining the dividend-price ratio.

Card, David

PD May 1986. **TI** Efficient Contracts With Costly Adjustment: Short-Run Employment Determination For Airline Mechanics. **AA** Department of Economics, Princeton University. **SR** National Bureau of Economic Research Working Paper: 1931; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 58. **PR** $2.00. **JE** 824, 832, 831, 615, 635. **KW** Labor Contracts. Airline Mechanics. Employment. Airline Industry. Wages. Adjustment Costs.

AB This paper presents an empirical analysis of firm-specific employment and wage outcomes for mechanics in the domestic airline industry. A dynamic contracting model is presented that incorporates both costly employment adjustment and potential gaps between contract wage rates and the opportunity value of workers' time. The model gives a useful description of the employment-output linkage in the data, but is less successful in capturing the dynamic relation between employment, contract wage rates, and wage rates outside the airline industry.

Carruth, Alan A.

PD October 1986. **TI** Wage Inflexibility in Britain. **AU** Carruth, Alan A.; Oswald, Andrew J. **AA** Carruth: University of Kent London School of Economics and Centre for Labour Economics. Oswald: Centre for Labour Economics, London School of Economics. **SR** London School of Economics Centre for Labour Economics Discussion Paper: 258; Centre for Labour Economics, London School of Economics, Houghton Street, London, WC2A 2AE, U.K. **PG** 51. **PR** No Charge. **JE** 824, 122. **KW** Wage Inflexibility. Britain. Unemployment. Rigid Wages.

AB The paper studies wage inflexibility in Britain. It considers existing microeconomic models of 'rigid' wages, examines various kinds of microeconomic data on movements in real pay, and uses aggregate data to estimate real consumption earnings and real product wage rate equations. The paper's first main point is that the unemployment elasticity of real wages is small (a little under - 0.1), and that it rises or falls with the unemployment rate, depending on the wage series to be explained. The second is that profits enter positively and significantly into real wage and earnings equations (with an elasticity of approximately 0.05). The distinction between these two forces - we term them external pressure and internal pressure - is used throughout the paper. Industrial relations data suggest that extreme internal pressure, as in the form of the threat of bankruptcy, can greatly influence wages. Some recent cases are discussed. Finally, the short-term unemployment rate appears to depress pay neither less effectively nor more effectively than the total unemployment rate.

PD October 1986. **TI** On Union Preferences and Labour Market Models: Insiders and Outsiders. **AU** Carruth, Alan A.; Oswald, Andrew J. **AA** Carruth: University of Kent, and London School of Economics. Oswald: Centre for Labour Economics, London School of Economics. **SR** London School of Economics Centre for Labour Economics Discussion Paper: 256; Centre for Labour Economics, London School of Economics, Houghton Street, London, WC2A 2AE, U.K. **PG** 30. **PR** No Charge. **JE** 831, 821, 023. **KW** Unions. Outsiders. Insiders. Labor Market. Wages. Wage Rigidity.

AB The paper constructs a model of trade union behaviour in which there is a distinction between 'insiders' and 'outsiders'. This is used to examine one of the most troublesome issues in macroeconomic theory, namely, the extent to which a rise in aggregate demand might generate wage increases rather than growth in employment. A generalisation of the most widely used union utility function is presented. The analysis reveals the conditions under which insiders will agree to let outsiders into employment, derives two-step wage preference paths, and proves a new result on wage rigidity.

PD November 1986. **TI** Testing for Multiple Natural Rates of Unemployment in the British Economy: A Preliminary Investigation. **AU** Carruth, Alan A.; Oswald, Andrew J. **AA** Carruth: University of Kent and Centre for Labour Economics, London School of Economics. Oswald: Centre for Labour Economics, London School of Economics. **SR** London School of Economics Centre for Labour Economics Discussion Paper: 265; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, U.K. **PG** 43. **PR** No Charge. **JE** 824, 122, 023. **KW** Unemployment. Natural Rate of Unemployment. Britain. Labor Demand. Nash Equilibrium. Wages.

AB This paper devises two ways in which to test for the existence of multiple natural rates of unemployment, and

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applies those methods using quarterly data for post-war Britain. Although important non-linearities are uncovered, the empirical results support the view that there is a unique natural rate of unemployment which has risen over time. The first method leads to the estimation of an S-shaped labour demand function for the British economy. The second approach applies a non-cooperative Nash equilibrium model, based on union wage reaction functions, which is used to explain the simultaneous determination of real wages in the manufacturing and non-manufacturing sectors. Both models are subjected to a number of diagnostic tests (for parameter stability, autocorrelation, predictive power, instrument validity, normality of errors, and heteroscedasticity), and appear to encompass the models of the literature.

Cataquet, Harold

PD September 1986. **TI** Rent Seeking and Bank Lending to Developing Countries: The Implications of Derivative Business. **AA** American Express Research Fellow, Institute of Economics and Statistics. **SR** Oxford Applied Economics Discussion Paper: 14; Institute of Economics and Statistics, Saint Cross Building, Manor Road, Oxford OX1 3UL. ENGLAND. **PG** 46. **PR** No Charge. **JE** 442, 312, 432, 441. **KW** Derivative Business. Bank Lending. Developing Countries. International Loans.

AB From an international bank's point of view, there are only two types of business in a foreign country: primary business (which is risky but readily available to the bank) and derivative business (which, although possibly risky, is nonetheless considerably more profitable and thus more desirable than the primary business). Unfortunately for the bank, the allocation of derivative business is under the direct control of the country. More specifically, derivative business is that business in a country which the bank would like to have but can not get without the country's permission which in turn can only be obtained by the bank first establishing a primary business relationship. This very desirable class of business could take the form of a huge loan to the country for the purpose of undertaking an indigenous development project promising its investors lower risks and higher returns (than the primary business). Or it could be some form of off-balance sheet activity -- foreign exchange transactions, standby letters of credit, interest rate swaps, options and futures, securities transactions, etc. -- or any combination of these activities and the more traditional banking activities of deposit taking and check issuance. Or it could be something considerably less tangible such as permission to open a local branch in the country or the authority to expand the bank's local operations. However, regardless of the physical form that it may take, if the bank wants this derivative business, it must first attract the country's attention and favor. In my analysis, the bank is modelled as doing this by making primary business loans, i.e., by lending to 'less desirable' projects within the country. The essence of the story told in this paper is that bank lending to developing countries is not a straightforward exchange of money today for more money tomorrow. Banks are interested in establishing and maintaining a business relationship with the country, and a loan to the country is the mechanism by which this goal is accomplished. The country, of course, realizes that the bank is looking beyond the loan and at the derivative business, so the country takes advantage of the situation by tying the amount of derivative business given to the bank to the amount of primary business lending. It really is a case of "You scratch my back, and I'll scratch yours" as the bank exchanges bigger primary business loans for the additional derivative business opportunies, an investment which is more profitable (and/or less risky) than the primary business.

Cavanagh, Christopher L.

TI An Analysis of the Selection of Arbitrators. **AU** Bloom, David E.; Cavanagh, Christopher L.

Chalfant, James A.

PD August 1986. **TI** A Globally Flexible, Almost Ideal Demand System. **AA** Department of Agricultural and Resource Economics, University of California, Berkeley. **SR** University of California at Berkeley Department of Agricultural and Resource Economics (CUDARE) Working Paper: 340 Rev. 2; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 42p. **PR** $8.40. **JE** 920, 022. **KW** Almost Ideal Demand System. Food Consumption. Flexible Functional Forms. Fourier Flexible Form. Consumer Demand. Meat. Fish.

AB The almost ideal demand system is combined with the Fourier expenditure system. Subject to the assumption that preferences are of the price-independent, generalized-logarithmic class, the resulting demand system has the desirable features of each of its components. Aggregate demand equations are consistent with preferences of a representative consumer, and consistent estimates of elasticities are obtained for all observed prices. Application of the new demand system to United States consumption of meats and fish reveals that it fits the data well and that the restriction to the usual specification is rejected.

TI The Changing Empirical Definition of Money: Some Estimates from a Model of the Demand for Money Substitutes. **AU** Belongia, Michael T.; Chalfant, James A.

TI Monetary Policy and Relative Farm Prices. **AU** Stamoulis, Kostas G.; Chalfant, James A.; Rausser, Gordon C.

Chaykowski, Richard P.

TI Merit Pay for School Superintendents? **AU** Ehrenberg, Ronald G.; Chaykowski, Richard P.; Ehrenberg, Randy A.

Chew, Soo Hong

PD June 1985. **TI** An Axiomatization of the Rank Dependent Quasilinear Mean Generalizing the Gini Mean and the Quasilinear Mean. **AA** Department of Political Economy, Johns Hopkins University. **SR** Johns Hopkins Department of Political Economy Working Paper: 156; Department of Political Economy, Johns Hopkins University, Baltimore, MD 21218. **PG** 21. **PR** No Charge. **JE** 026, 022. **KW** Gini Mean. Quasilinear Mean. Rank Dependent Quasilinear Mean.

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AB This paper provides an axiomatization of the rank-dependent quasilinear mean Mg. The Mg mean corresponds to the class of L-estimators in robust statistics and generalizes both the quasilinear mean and the Gini mean from which the Gini index of income inequality is derived. As a model of a decision maker's certainty equivalence, it contains Quiggin's (1982) generalization of expected utility as well as Yaari's (1984) model.

PD June 1985. **TI** Implicit-Weighted and Semi-Weighted Utility Theories, M-Estimators, and Non-Demand Revelation of Second-Price Auctions for an Uncertain Auctioned Object. **AA** Department of Political Economy, Johns Hopkins University. **SR** Johns Hopkins Department of Political Economy Working Paper: 155; Department of Political Economy, Johns Hopkins University, Baltimore, MA 21218. **PG** 23. **PR** No Charge. **JE** 026, 022. **KW** Weighted Utility Theories. M-Estimators. Auctions. Second-Price Auctions.
AB This paper develops the implications of three successive weakenings of the substitution principle following some recent works in generalizing expected utility. The main result is an axiomatic characterization of mixture-monotone utility in terms of a utility function v of a lottery and an implicit weight function w which depends on the lottery as well as the level of utility attained. We also accomplish an intermediate representation, called semi-weighted utility where the implicit weight function is derived from an upper weight function and a lower weight function defined on outcomes depending on whether receiving the outcome for sure is less or more preferred to the lottery under consideration. We discuss the relation between implicit weighted utility and the class of M-estimators in robust statistics and show that the demand-revelation property of the second-price auction for an auctioned object of uncertain valuations breaks down when bidders have implicit weighted utility preferences and possess private nondeterministic valuations.

Chirinko, Robert S.

PD August 1986. **TI** Tobin's Q and Financial Policy. **AA** University of Chicago. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-45; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 34. **PR** No Charge. **JE** 522, 311, 023. **KW** Investment. Financial Policy. Tobin's Q.
AB Recent research in macroeconomics has emphasized the importance of linking the financial and real sectors and the need for working with optimizing models. Tobin's Q model of investment would appear to provide a framework that can satisfy these two criteria. In contrast to the original presentation of the Q model, the formal development has not recognized that the firm actively participates in a number of financial markets; in this broader context, we show that Q is likely to be an uninformative and possibly misleading signal for investment expenditures. We then endeavor to turn this negative theoretical result to positive advantage in resolving a number of empirical problems with Q models, but the modifications dictated by the theory receive little support from the data.

PD October 1986. **TI** Investment, Tobin's Q, and Multiple Capital Inputs. **AA** University of Chicago. **SR** National Bureau of Economic Research Working Paper: 2033; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 522, 023. **KW** Investment. Tobin's Q. Multiple Capital Inputs.
AB Despite their solid theoretical basis, models of business investment based on Tobin's Q theory have recorded a generally disappointing empirical performance. This paper examines one possible source of misspecification. When the firm's technology is expanded to include two or more capital inputs, the investment equation following from maximizing behavior includes Q as well as a series of additional explanatory variables. The importance of these omitted variables is assessed, and the econometric evidence is mixed, as the Multi-Capital Q model clearly dominates the Conventional specification but empirical problems remain. In addition, the implications of the parameter estimates from the Conventional and Multi-Capital models for tax policy are noted.

PD November 1986. **TI** Tobin's Q and Financial Policy. **AA** University of Chicago. **SR** National Bureau of Economic Research Working Paper: 2082; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 522, 311, 521, 023. **KW** Financial Policy. Investment. Tobin's Q.
AB Recent research in macroeconomics has emphasized the importance of linking the financial and real sectors and the need for working with optimizing models. Tobin's Q model of investment would appear to provide a framework that can satisfy these two criteria. In contrast to the original presentation of the Q model, the formal development has not recognised that the firm actively participates in a number of financial markets; in this broader context, we show that Q is likely to be an uninformative and possibly misleading signal for investment expenditures. We then endeavor to turn this negative theoretical result to positive advantage in resolving a number of empirical problems with Q models, but the modifications dictated by the theory receive little support from the data.

Christensen, M.

TI Macroeconomic Policy Games and Reputational Equilibria in a Contracting Model. **AU** Blackburn, K.; Christensen, M.

Christiano, Lawrence J.

PD September 1986. **TI** Temporal Aggregation and Structural Inference in Macroeconomics. **AU** Christiano, Lawrence J.; Eichenbaum, Martin. **AA** Christiano: Federal Reserve Bank of Minneapolis. Eichenbaum: Carnegie-Mellon University. **SR** National Bureau of Economic Research Technical Paper: 60; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 211, 023, 311. **KW** Temporal Aggregation Bias. Structural Inference. Granger Causality. Stock Adjustment Models.
AB This paper examines the quantitative importance of temporal aggregation bias in distorting parameter estimates and hypothesis tests. Our strategy is to consider

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two empirical examples in which temporal aggregation bias has the potential to account for results which are widely viewed as being anomalous from the perspective of particular economic models. Our first example investigates the possibility that temporal aggregation bias can lead to spurious Granger causality relationships. The quantitative importance of this possibility is examined in the context of Granger causal relations between the growth rates of money and various measures of aggregate output. Our second example investigates the possibility that temporal aggregation bias can account for the slow speeds of adjustment typically obtained with stock adjustment models. The quantitative importance of this possibility is examined in the context of a particular class of continuous and discrete time equilibrium models of inventories and sales. The different models are compared on the basis of the behavioral implications of the estimated values of the structural parameters which we obtain and their overall statistical performance. The empirical results from both examples provide support for the view that temporal aggregation bias can be quantitatively important in the sense of significantly distorting inference.

Clarida, Richard H.

PD June 1986. **TI** International Lending and Borrowing in a Stochastic Sequence Equilibrium. **AA** Yale University. **SR** National Bureau of Economic Research Working Paper: 1944; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 021, 023, 431, 441, 131. **KW** International Lending and Borrowing. Stochastic Sequence Equilibrium. International Capital Flows.

AB This paper is a theoretical investigation of international lending and borrowing in the context of a general equilibrium model in which national productivities are subject to random fluctuations and rates of time preference differ among countries. International capital flows arise from the efforts of risk-averse households situated in different countries to self-insure against random productivity fluctuations. We establish the existence of a rational expectations equilibrium in which the world interest rate is constant and strictly less than the rate of time preference of the least impatient countries. The rate of time preference, solvency restrictions on borrowing, and balanced-budget fiscal policies are rigorously analysed.

PD June 1986. **TI** The Balance of Payments. Adjustment Mechanism in a Rational Expectations Equilibrium. Prices. **AA** Yale University. **SR** National Bureau of Economic Research Working Paper: 1945; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 431, 021, 023, 131. **KW** Balance of Payments Adjustment Mechanism. Rational Expectations Equilibrium.

AB This paper provides a choice theoretic, general equilibrium account of the balance of payments adjustment process and the determination of national price levels in a world comprised of countries populated by rational households. Balance of payments adjustment dynamics arise in the equilibrium of this model from the precautionary saving behavior of risk-averse households who self-insure against random productivity fluctuations by accumulating, via balance of payments surpluses in productive periods, buffer stocks of domestic money which can be drawn down to finance payments deficits, and thus a less variable profile of consumption relative to output, when productivity is unexpectedly low. Precautionary saving is shown to exhibit the partial-adjustment-to-target behavior typically postulated in the monetary approach literature. The existence of a rational expectations equilibrium in which the distribution of international reserves among central banks is stationary is established.

TI The Term Structure of Euromarket Interest Rates: An Empirical Investigation. **AU** Campbell, John Y.; Clarida, Richard H.

Coles, Melvyn G.

PD June 1986. **TI** Neo-Classical Adjustment Rules with Time Varying Discount Rates - Theory and Applications. **AU** Coles, Melvyn G.; Farrow, Raymond J. **AA** Coles: Department of Economics, Princeton University. Farrow: Department of Economics, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 666; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 31. **PR** $2.50 Canada; $3.00 United States; $3.50 foreign. **JE** 022, 213, 522, 721, 821. **KW** Adjustment Costs. Investment. Irreversability Control Costs. Durable Goods. Resource Extraction.

AB Dynamic models with linear control costs naturally arise in economic environments where adjustment costs take the form of a price per unit installed, which price is taken as given by a competitive firm. We analyse such a model with irreversable controls deriving the singular control trajectories and explicit solutions for determining the timing and duration of blocked intervals. Applications to investment theory, a labour hiring and firing model, a durable goods consumption model and a natural resource extraction model are presented to illustrate the widespread applicability of the techniques developed. The relevance of these results to recent deep parameter estimation techniques is briefly discussed.

Cook, William

PD March 1985. **TI** Sensitivity Results In Integer Linear Programming. **AU** Cook, W.; Gerards, A. M. H.; Schrijver, A.; Tardos, E. **AA** Cook, Schrijver and Tardos: University of Bonn. Gerards: Tilberg University. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85369; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, Deutschland. **PG** 14. **PR** No Charge. **JE** 213. **KW** Integer Linear Programming. Sensitivity.

AB We consider integer linear programming problems with a fixed coefficient matrix and varying objective function and right-hand-side vector. Among our results, we show that, for any optimal solution to a linear program max(wx: Ax <= b), the distance to the nearest optimal solution to the corresponding integer program is at most the dimension of the problem multiplied by the largest subdeterminant of the integral matrix A. Using this, we strengthen several integer programming "proximity" results of Blair and Jeroslow; Graver; and Wolsey. We also show that the Chvatal rank of a polyhedron (x: Ax <= b) can be bounded above by a function of the matrix

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A, independent of the vector b.

PD April 1986. **TI** Cutting-Plane Proofs in Polynomial Space. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 86414-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 9. **PR** No Charge. **JE** 213. **KW** System of Linear Inequalities. Polynomial Workspace. Cutting Planes.

AB Following Chvatal, cutting planes may be viewed as a proof system for establishing that a given system of linear inequalities has no integral solution. We show that such proofs may be carried out in polynomial workspace.

Cooper, Russell

PD October 1986. **TI** Optimal Labor Contracts, Imperfect Competition and Underemployment Equilibria: A Framework for Analysis. **AA** University of Iowa. **SR** National Bureau of Economic Research Working Paper: 2060; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 821, 023, 822. **KW** Coordination. Imperfect Competition. Contract Theory. Labor Market.

AB This paper examines the macroeconomic properties of imperfectly competitive economies. The focus is on the coordination failures that might arise in these economies, a study of alternative policies and the comparative static properties of these models. This paper differs from others in this area by modeling the labor market from the perspective of optimal contract theory. This permits an evaluation of the role of labor market behavior in producing these coordination failures and a study of labor market policies (such as unemployment insurance and alternative compensation schemes).

Cornet, Bernard

TI Fixed-Point Theorems and Morse's Lemma For Lipschitzian Functions. **AU** Bonnisseau, Jean Marc; Cornet, Bernard.

Cothren, Richard D.

PD August 1986. **TI** Reserve Requirements with Irrational and Rational Bank Runs. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Paper in Economics: E86-10-1; Working Paper Coordinator, Department of Economics Sandy Hall, Blacksburg, Virginia 24061. **PG** 20. **PR** Free by request. **JE** 311, 312, 314. **KW** Reserve Requirements. Rational Bank Runs. Irrational Bank Runs.

AB One traditional argument in favor of bank reserve requirements holds that requirements are needed because a run on one bank inducing this bank to liquidate some assets will trigger such runs and liquidations at other banks. This argument is analyzed when runs are irrational responses to exogenous events and when they are rational responses. Counterintuitively, it is shown that the argument is not voided when runs are rational responses to exogenous events correlated with bank portfolios.

Crampton, Peter

PD November 1985. **TI** Dissolving a Partnership Efficiently. **AU** Crampton, Peter; Gibbons, Robert; Klemperer, Paul. **AA** Crampton: Yale University. Gibbons: Massachusetts Institute of Technology. Klemperer: Oxford. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 406; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 24. **PR** No Charge. **JE** 510. **KW** Partnerships. Trading Mechanisms. Dissolution.

AB Several partners jointly own an asset that may be traded among them. Each partner has a valuation for the asset; the valuations are known privately and drawn independently from a common probability distribution. We characterise the set of all incentive-compatible and interim-individually-rational trading mechanisms, and give a simple necessary and sufficient condition for such mechanisms to dissolve the partnership ex post efficiently. A bidding game is constructed that achieves such dissolution whenever it is possible. Despite incomplete information about the valuation of the asset, a partnership can be dissolved ex post efficiently provided no single partner owns too large a share; this contrasts with Myerson and Satterthwaite's result that ex post efficiency cannot be achieved when the asset is owned by a single party.

Cramton, Peter C.

PD October 1986. **TI** Cartel Enforcement with Uncertainty about Costs. **AU** Cramton, Peter C.; Palfrey, Thomas R. **AA** Cramton: Yale School of Organization and Management. Palfrey: California Institute of Technology. **SR** Caltech Social Science Working Paper: 619; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 36. **PR** No Charge. **JE** 026, 611. **KW** Cartels. Collusion. Private Information. Revelation Principle.

AB What cartel agreements are possible when firms have private information about production costs? In order for a cartel agreement to work it must take into account the incentives for firms to misrepresent their cost information and it must provide sufficient reward so that no firm wishes to defect. For private cost uncertainty we characterise the set of cartel agreements with side payments that can be supported as Bayesian Nash equilibria. We show that if defection results in either Cournot or Bertrand competition the incentive problems in large cartels are severe enough to prevent the cartel from achieving the monopoly outcome. In contrast, with common cost uncertainty, the incentive problems become less severe in large cartels, allowing perfect collusion.

de Janvry, Alain

PD July 1986. **TI** Agricultural Price Policy in General Equilibrium Models: Results and Comparisons. **AU** de Janvry, Alain; Sadoulet, Elisabeth. **AA** Department of Agricultural and Resource Economics, University of California, Berkeley. **SR** University of California at Berkeley Department of Agricultural and Resource Economics (CUDARE) Working Paper: 342 Rev. 3; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 41p. **PR** $8.20. **JE** 713, 711, 121. **KW** Agricultural Price Policy. General Equilibrium

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Model. Food Subsidies. Land Reform. Investment Allocation. Agriculture.

AB A number of alternative policies toward agricultural prices, food subsidies, and intersectoral allocation of investment are analysed with computable general equilibrium models for six countries. The models generally allow to trace out the intersectoral and intertemporal growth effects of these policies as well as their income distribution effects across social groups. The results obtained are shown to be eventually quite different from those derived from partial equilibrium and multimarket approaches. Sensitivity analysis to alternative specifications of the mechanism of wage determination shows that the real income effects of price policies are critically dependent upon the particular theory of wage determination used.

TI Compatible Investment Strategies and Income Policies for Equitable Growth. **AU** Sadoulet, Elisabeth; de Janvry, Alain.

Dehez, Pierre

PD August 1986. **TI** Competitive Equilibria With Increasing Returns. **AU** Dehez, Pierre; Dreze, Jacques. **AA** Dehez: European University Institute. Dreze: Centre for Operations Research and Econometrics, Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 8623; Centre for Operations Research and Econometrics, Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 29. **PR** No Charge. **JE** 021. **KW** Competitive Equilibria. Increasing Returns.

AB This paper proposes a concept of competitive equilibrium at which firms maximise profits given the prices and the demand for their outputs. The equilibrium is called "competitive" because it combines voluntary trading with a minimality condition on output prices. When production sets are convex, the set of equilibria as defined here coincides with the usual set of competitive equilibria. Existence is proved without imposing convexity assumption on either individual or aggregate technologies.

Demski, Joel S.

PD August 1986. **TI** The Disciplinary Role of Switching Suppliers: A Regulatory Interpretation. **AU** Demski, Joel S.; Sappington, David E. M.; Spiller, Pablo T. **AA** Demski: Yale University. Sappington: Bell Communications Research. Spiller: Stanford University. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-44; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 37. **PR** No Charge. **JE** 611, 512. **KW** Switching Suppliers. Entry. Auditing.

AB To illustrate the general disciplinary role of a second production source, we examine how source switching is optimally structured. The model focuses on a purchaser (e.g., regulator) who manages the acquisition process, an incumbent supplier, and a potential supplier (e.g., an entrant). Because the costs of the incumbent and second source are correlated, "entry" can provide an informative signal about the incumbent's costs, and thereby limit his rents. Entry also provides an alternative source of production. This latter role creates important distinctions between the optimal entry policy and the optimal auditing policy. We find, for example, entry may occur more or less often than auditing. Furthermore, the entrant may optimally succeed the incumbent in the industry even when the entrant's production costs are known to exceed those of the incumbent. Also, regulated prices can be either higher or lower under entry than under auditing.

PD October 1986. **TI** Incentive Schemes with Multiple Agents and Bankruptcy Constraints. **AU** Demski, Joel S.; Sappington, David E. M.; Spiller, Pablo T. **AA** Demski: Yale University. Sappington: Bell Communications Research. Spiller: Hoover Institution. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-67; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 24. **PR** No Charge. **JE** 022, 511, 026. **KW** Incentive Schemes. Multiple Agents. Bankruptcy Constraints.

AB We explore the effects of bankruptcy constraints on incentive schemes when two risk-neutral agents operate in correlated environments. Our focus is on the subgame equilibrium in which each agent is induced via a direct mechanism to truthfully reveal his private information as a Nash response to truth-telling by his counterpart. We identify a class of examples in which, in contrast to the case where the agents are risk-averse, the Nash constraints induce a subgame dominant strategy equilibrium. Thus implementation via direct mechanisms is feasible for this class. More generally, however, the truth-telling Nash equilibrium may be subgame dominated, so the question of implementation remains a delicate one.

Deprins, Dominique

PD May 1986. **TI** Modified Least-Squares Estimators For Deterministic Frontier Functions. **AU** Deprins, Dominique; Simar, Leopold. **AA** Centre for Operations Research and Econometrics, Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 8619; Centre for Operations Research and Econometrics, Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 15. **PR** No Charge. **JE** 211. **KW** Least-Squares Estimators. Deterministic Frontier Model. Inefficiency Factors.

AB In this paper, the least-squares procedure is used to derive consistent estimators in a deterministic frontier model, allowing the introduction of exogenous inefficiency factors. A modified least-squares procedure (inspired from the work of Greene '1980) is also presented. It allows, in some cases, to compute the estimators with the usual linear least-squares computations.

PD August 1986. **TI** Modelling Technical Inefficiencies With Log-Linear Regression For One-Sided Residuals. **AA** CORE, Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 8617; Centre for Operations Research and Econometrics, Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, Belgium. **PG** 14. **PR** No Charge. **JE** 211, 631, 512. **KW** Log-linear Regression. One-Sided Residuals. Technical Inefficiencies. Production Function. Maximum

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Likelihood Estimation.
AB The technical inefficiency of a production unit can be viewed as resulting in a one-sided residual with respect to a production function which has been estimated. In order to take into account some exogenous information (describing e.g. the environment of a particular firm), new explanatory variables are introduced through a log-linear regression of the one-sided residuals on those exogenous factors of inefficiency. Several specifications are considered for the distributions of those residuals: Gamma, Weibull, Log-Normal and Log-Logistic. For each of those models, a maximum likelihood procedure of estimation is proposed including the estimation of the production function and of the parameters of the log-linear regression. It appears that the variance-covariance matrix of the scores has the same structure in each case. The asymptotic variance of the M.L.E. of the parameters is also computed. Finally, in connections with a least squares estimation, a scoring method is presented for computing algebraically estimators of the parameters of the model having the same asymptotical properties as the M.L.E.

Diamond, Peter

PD December 1985. **TI** Consumer Differences and Prices in a Search Model. **AA** Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 404; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 17. **PR** No Charge. **JE** 023, 022, 921. **KW** Search Model. Consumer Differences.
AB *Distributions of prices for homogeneous goods* are widespread 'Pratt, Wise, and Zeckhauser, 1979. Yet in Walrasian theory all purchases of a homogeneous good occur at the same price. Search theorists have explored a variety of models having nondegenerate distributions of equilibrium prices. Here, we explore a model where consumers differ in their willingness to pay for the single unit they are trying to buy. With two classes of consumers, equilibrium can have a single price or a pair of prices. In a two price equilibrium, the lower price equals the lower willingness to pay of the two types of consumers, while the higher price is the reservation price of the type with higher willingness to pay. The price charged at high price stores increases and the fraction of low price stores decreases with the following changes in the exogeneous parameters: an increase in the ratio of the flows of consumers with high willingness to pay to those with low willingness to pay, a decrease in the speed of search, an increase in the departure rate of consumers, an increase in the discount rate of consumers, a decrease in the willingness to pay of those with low willingness to pay, an increase in the willingness to pay of those with high willingness to pay, an increase in the marginal cost of production. An extension of the model to more general demand curves is briefly considered.

Diba, Behzad

PD August 1986. **TI** Rational Inflationary Bubbles. **AU** Diba, Behzad T.; Grossman, Herschel I. **AA** Brown University. **SR** National Bureau of Economic Research Working Paper: 2004; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 134, 431, 313. **KW** Rational Inflationary Bubbles. Exchange Rate Bubbles.
AB This paper analyzes the possible inception of rational inflationary bubbles under the assumption that the empirically relevant environment precludes the existence of rational deflationary bubbles. The analysis shows that if a rational inflationary bubble exists, then it must have started on the date of initial issuance of the fiat money. Moreover, the existence of a rational inflationary bubble would imply that, prior to the initial issuance of the fiat money, agents who anticipated its introduction expected a rational inflationary bubble to occur. The analysis also shows that once a rational inflationary bubble bursts it cannot restart. The analysis, however, does not preclude the existence of a rational inflationary bubble that shrinks periodically, but never bursts. The limitations on the inception and existence of rational inflationary bubbles also apply to rational exchange-rate bubbles.

PD November 1986. **TI** Market Fundamentals, Rational Bubbles, and the Stationary Properties of Stock Prices. **AU** Diba, Behzad; Grossman, Herschel I. **AA** Brown University. **SR** National Bureau of Economic Research Working Paper: 2069; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 313, 441. **KW** Stockprices. Market Fundamentals. Rational Bubbles. Stationarity. Cointegration.
AB This paper reports empirical tests of a simple model of stock prices that defines market fundamentals to be the sum of an unobservable variable and 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. Because dividends are first-difference stationary and no other nonstationary variables seem to enter market fundamentals, the hypothesis that stock prices conform to market fundamentals implies that a specific linear combination of stock prices and dividends should be stationary in levels -- that is, stock prices and dividends should be "cointegrated" of order (1,1). This implication of the model holds even if expected capital gains and expected dividends are valued differently. The empirical tests in the main fail to reject the hypothesis that stock prices and dividends are not cointegrated. The apparent absence of cointegration cannot be attributed to the existence of rational bubbles that burst and restart repeatedly, because simulated time-series of such bubbles do not exhibit a nonstationary mean unless the expected duration of a rational bubble is implausibly long (longer than five years). Rational bubbles that do not burst could account for the absence of cointegration, but the existence of such bubbles is not consistent either with the finding that stock prices are first-difference stationary or with the further finding that the relevant linear combination of undifferenced stock prices and dividends does not possess an explosive mean. In sum, the failure of this specification of market fundamentals to explain stock-price fluctuations does not seem to be evidence of the existence of rational bubbles.

Dickens, William T.

PD June 1986. **TI** Are Efficiency Wages Efficient?

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AU Dickens, William T.; Katz, Lawrence; Lang, Kevin. **AA** Dickens: Massachusetts Institute of Technology. Katz: University of California, Berkeley. Lang: University of California, Irvine. **SR** National Bureau of Economic Research Working Paper: 1935; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 820, 811, 510, 022. **KW** Efficiency Wages. Monitoring Workers. Worker Malfeasance.

AB Efficiency wage models have been criticized because worker malfeasance can be prevented in a Pareto efficient manner by requiring workers to post a bond which they lose if they are caught cheating. However, since it is costly to monitor workers and costless to demand a larger bond, firms should pay nothing for monitoring and demand very large bonds. Since we observe that firms devote considerable resources to monitoring workers, bonds must be limited. Therefore firms must use second best alternatives -intensive monitoring and/or efficiency wages. The payment of efficiency wages cannot be ruled out on a priori theoretical grounds.

PD September 1986. **TI** Interindustry Wage Differences and Industry Characteristics. **AU** Dickens, William T.; Katz, Lawrence F. **AA** Dickens: National Bureau of Economic Research. Katz: Harvard University. **SR** National Bureau of Economic Research Working Paper: 2014; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 630, 820, 831. **KW** Interindustry Wage Differences. Industry Characteristics.

AB This paper examines the extent of interindustry wage differences for nonunion workers and finds that even after controlling for a wide range of individual characteristics and geographic location a substantial amount of individual wage variation can be accounted for by industry differences. In the aggregate industry effects explain at least 6.7 per cent of inter-personal wage variation. At most they explain 30 per cent. While the importance of industry differences is clear, the reasons for the differences are more difficult to establish. Independent of the problems of interpreting the correlates of industry differences, even the sign of the relation of many variables with wages is difficult to establish when other variables are included as controls. This conclusion is suggested by a literature review and confirmed by an analysis of a large number of alternative specifications of an industry wage equation using individual wage data from the CPS and industry characteristics from a number of recent sources. Only industry average education and industry profitability have the same (positive) sign in every specification and in all the studies reviewed. Of these two only average education was nearly always significantly related to wages. Average establishment size had a nearly consistent positive relation. What does emerge from the analysis is a pattern of correlations. There appears to be one major dimension (and perhaps other less important dimensions) along which industries differ. A principal components analysis of an industry characteristics data set is used to demonstrate this. High wage industries have lower quit rates, higher labor productivity, fewer women, more educated workers, longer work weeks, a higher ratio of nonwage to wage compensation, higher unionization rates, larger establishments and firms, higher concentration ratios and are more profitable. An analysis of a limited number of industry characteristics in 1939 yields a similar pattern. The implications of these results for alternative theories of wage determination are considered.

Diewert, Erwin W.

PD August 1985. **TI** Group Cost Of Living Indexes: Approximations And Axiomatics. **AA** Department of Economics, University of British Columbia. **SR** University of British Columbia Department of Economics Discussion Paper: 86-32; Department of Economics, University of British Columbia #997-1873 East Mall, Vancouver, British Columbia CANADA V6T 1Y2. **PG** 18. **PR** $0.20 per page Canadian to other than educational institutions. **JE** 227, 225, 022. **KW** Index Numbers. Cost of Living. Consumer Price Index.

AB This is a brief review of the alternative approaches to the construction of a consumer price index. It should be noted that with the exceptions of Pollak '1981, Jorgenson and Slesnick '1982 and Diewert '1983, the economic approach has centered around the single household case. Thus one of the main purposes of this paper will be to extend the economic theory to the many household case. The other main purpose of this paper will be to provide an axiomatic approach to the various concepts of group cost of living indexes.

PD August 1986. **TI** Index Numbers. **AA** Department of Economics, University of British Columbia. **SR** University of British Columbia Department of Economics Discussion Paper: 86-33; 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** 022, 227. **KW** Index Numbers. Price Index. Multilateral Indexes.

AB This paper is a survey article on index numbers prepared for The New Palgrave: A Dictionary of Economic Theory and Doctrine.

PD August 1986. **TI** Export Supply and Import Demand Functions: A Production Theory Approach. **AU** Diewert, Erwin W.; Morrison, Catherine J. **AA** Diewert: University of British Columbia. Morrison: Tufts University. **SR** National Bureau of Economic Research Working Paper: 2011; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 431, 420, 022. **KW** Import Demand. Export Supply. Production Theory. Duality Theory. Trade Balance. Devaluation Elasticity.

AB In this paper we theoretically and empirically model import demand and export supply behavior of firms for the United States economy from 1967-1982. A producer theoretic approach based on duality theory is used to derive econometric systems of producer supply and demand functions that are consistent with profit maximizing behavior. This system is then empirically implemented and the resulting estimates used to construct a full set of supply and demand elasticities characterizing import demand and export supply functions as well as domestic output supply and labor demand. These elasticities are in turn used to derive devaluation elasticities and some estimates of the equilibrium real exchange rate that would cause the United States trade surplus to reach zero.

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PD September 1986. **TI** Cost Functions. **AA** Department of Economics, University of British Columbia. **SR** University of British Columbia Department of Economics Discussion Paper: 86-35; Department of Economics, University of British Columbia #997-1873 East Mall, Vancouver, British Columbia, CANADA V6T 1Y2. **PG** 15. **PR** $0.20 per page Canadian to other than educational institutions. **JE** 022, 024. **KW** Cost Functions. Expenditure Functions. Duality. Welfare Gain.

AB Cost and expenditure functions are widely used in both theoretical and applied economics. Cost functions are often used in econometric studies which describe the technology of firms or industries while their consumer theory counterparts, expenditure functions, are frequently used to describe the preferences of consumers. Cost and expenditure functions also play an important role in many theoretical investigations. This is due to the fact that a cost function embodies the consequences of cost minimizing behaviour on the part of a consumer or producer and so it is not necessary to spell out the details of the primal minimization problem that defined the cost function. This may seem like a very minor advantage, but when one is dealing with, say, the comparative statics of a general equilibrium problem, the use of cost functions leads to the analysis of a much smaller system of equations and hence the structure of the problem can be more easily understood. Sections 2 - 5 develop the theoretical properties of cost functions while sections 6 - 8 are devoted to empirical applications of cost functions in the producer and consumer contexts.

Dominguez, Kathryn M.

TI Forecasting the Depression: Harvard Versus Yale. **AU** Fair, Ray C.; Shapiro, Matthew D.; Domingues, Kathryn M.

Domowitz, Ian

PD October 1986. **TI** Business Cycles and Oligopoly Supergames: Some Empirical Evidence on Prices and Margins. **AU** Domowits, Ian; Hubbard, R. Glenn; Peterson, Bruce C. **AA** Northwestern University. **SR** National Bureau of Economic Research Working Paper: 2057; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 611, 022. **KW** Supergames. Business Cycles. Oligopoly Behavior. Price-Cost Margins. Price Rigidity.

AB There has been a significant interest on a theoretical level in the application of supergames to oligopoly behavior. Implications for pricing behavior in trigger-strategy models in response to aggregate demand are of particular importance for public policy considerations. We contrast the predictions for the movements of industry prices over the business cycle of two such models -- put forth by Edward Green and Robert Porter and by Julio Rotemberg and Garth Saloner -- and test the predictions using a panel data set of United States manufacturing industries. Our principal findings are four. First, the levels of price-cost margins of concentrated, homogeneous-goods industries, while higher than those of unconcentrated counterparts, appear to be closer to those predicted by a single-period Cournot-Nash equilibrium than monopoly. Second, there is little evidence to support the idea that price-cost margins of these industries have different cyclical patterns from other industries apart from effects by level of industry concentration. Maximum price declines for concentrated industries give little support for the occurrence of price wars during either recessions or booms. Finally, consistent with the predictions of the Rotemberg-Saloner model, the industries with high price-cost margins have more countercyclical price movements than those exhibited by other industries. That gradual price adjustment is quantitatively important for those industries, suggests, however, that other factors may lie behind the apparent rigidity of prices.

Donsimoni, Marie Paule

PD 1986. **TI** Is International Trade Profitable to Oligopolistic Industries? **AU** Donsimoni, Marie Paule; Gabszewicz, Jean Jaskold. **AA** Centre for Operations Research and Econometrics, Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 8627; Centre for Operations Research and Econometrics, Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 15. **PR** No Charge. **JE** 611, 420, 441, 442. **KW** International Trade. Oligopoly. Profitability. Autarky.

AB In the framework of a simple class of examples, we examine whether oligopolistic autarkic industries, operating in two different countries, would gain from the opening of trade. Our findings can be summarized as follows: (i) under homogeneous oligopoly, there is always at least one of the two countries where firms make higher profits under autarky than under free trade; (ii) under homogeneous oligopoly, if the industries are of the same size and demand is the same in both countries, then all firms in both countries have higher profits under autarky than under free trade; (iii) the same conclusion as in (ii) follows when there are fixed costs and the industry in each country has a number of firms entailing zero-profits at the autarkic Cournot Equilibrium; (iv) by contrast, under differentiated duopoly, with one firm in each country selling a product of different quality, there are cases where both firms make higher profits under international competition than under autarkic monopoly.

Dooley, Michael

TI International Capital Mobility in Developing Countries vs. Industrial Countries: What do Saving-Investment Correlations Tell Us? **AU** Frankel, Jeffrey A.; Dooley, Michael; Mathieson, Donald.

Dornbusch, Rudiger

PD November 1986. **TI** Exchange Rate Economics: 1986. **AA** Massachusetts Institute of Technology. **SR** National Bureau of Economic Research Working Paper: 2071; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 431, 432, 441. **KW** Exchange Rates. Expectations. Mundell-Fleming Model. Capital Mobility. Portfolio Approach.

AB In the past fifteen years key exchange rates have moved in larger and more persistent ways than advocates of flexible rates in the late 1960s would have left anyone

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free to imagine. Certainly there was no expectation of constancy for nominal exchange rates. But real exchange rate movements of 30 or forty percent were definitely not suggested as a realistic possibility. Moreover where these large movements did occur they did not obviously appear to be connected with fundamentals, and hence seemed difficult to explain in terms of the exchange rate theories at hand. The persistence of rate movements was as surprising as the rapid unwinding of apparent misalignments when they did ultimately occur. The past fifteen years provide a natural dividing line between the Keynesian and monetary approaches of the 1960s, and the more recent analysis that takes into account exchange rate expectations and portfolio issues, which took off in the early 1970s as well as the brand-new approaches that concentrate on (partial equilibrium) microeconomics. To review these ideas the paper starts with a brief look at the United States experience with flexible exchange rates. From there it proceeds to the Mundell-Fleming model as a comprehensive framework of analysis. The following sections deal with persistent effects of policy disturbances, links between exchange rates and prices, the political economy of exchange rate movements and the question of policies toward excess capital mobility.

Drazen, Allan

PD August 1986. **TI** Inflationary Consequences of Anticipated Macroeconomic Policies. **AU** Drazen, Allan; Helpman, Elhanan. **AA** Tel Aviv University. **SR** National Bureau of Economic Research Working Paper: 2006; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 134, 023, 311. **KW** Anticipated Macroeconomic Policies. Inflation.

AB We consider a model in which the level of taxes and seignorage are too low to finance government expenditures and debt service. Government debt will therefore grow without bound, implying the eventual need to change policy. Starting with utility maximisation, we analyze the effect of the expected switch on equilibrium time paths before the switch takes place. We analyze stabilization via increasing taxes, increasing money growth rates, or cutting expenditures, both under certainty and under uncertainty about the composition or timing of a stabilization. Under full certainty, inflation may rise, fall, or remain constant before the stabilization, depending on which policy tool is used to stabilize. Uncertainty solely about the composition of the stabilization will yield paths in between the above cases, with a price jump at the time of stabilization. In general there is no simple correlation between changes in the budget deficit and inflation. With uncertainty about the timing of a stabilization, the inflation rate will most likely exhibit fluctuations and may overshoot its steady state value, even when real balances move monotonically. Uncertainty about the timing of a stabilization can therefore itself induce fluctuation in inflation, even if underlying utility and subjective probability functions are smooth.

PD November 1986. **TI** Stabilization with Exchange Rate Management. **AU** Drazen, Allan; Helpman, Elhanan. **AA** Department of Economics, Tel-Aviv University. **SR** Tel Aviv Foerder Institute for Economic Research Working Paper: 41-86; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, Israel. **PG** 73. **PR** No Charge. **JE** 431, 133, 322. **KW** Stabilization. Exchange Rates. Regime Switches. Budget Deficit.

AB Stabilization programs in open economies typically consist of two stages. In the first stage the rate of currency devaluation is reduced without a sufficient fiscal adjustment to eliminate the deficit that causes continued growth of debt and loss of reserves. Only later, at a second stage, is this followed by either an abandonment of exchange rate management or by a sufficiently large cut in the fiscal deficit. We study how different second-stage policy changes affect economic dynamics during the first stage, both when the timing of a change is known, and when it is uncertain. These changes include tax increases, budget cuts on traded and nontraded goods, and increases in the growth rate of money.

Dreze, Jacques

TI Competitive Equilibria With Increasing Returns. **AU** Dehez, Pierre; Dreze, Jacques.

Driffill, John

TI The Consistency of Optimal Policy in Stochastic Rational Expectations Models. **AU** Backus, David; Driffill, John.

Dubin, Jeffrey A.

PD October 17, 1986. **TI** An Empirical Analysis of Federal Income Tax Auditing and Compliance. **AU** Dubin, Jeffrey A.; Wilde, Louis L. **AA** California Institute of Technology. **SR** Caltech Social Science Working Paper: 615; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 22. **PR** No Charge. **JE** 323, 916. **KW** Tax Compliance. Auditing. Simultaneity. Income Tax. IRS.

AB This paper provides empirical evidence on the relationship between compliance with the Federal Income Tax and auditing by the Internal Revenue Service. It relys heavily on a cross-section data set related to 1969 individual returns assembled by the IRS. We find strong support for an economic approach to tax compliance, but one that incorporates the IRS as a strategic actor. In particular, audits have an unambiguous deterrent effect on noncompliance, but are themselves, in many cases, responsive to the pattern of compliance.

Duffie, Darrell

PD November 1986. **TI** Optimal Innovation of Futures Contracts. **AU** Duffie, Darrell; Jackson, Matthew O. **AA** Stanford University. **SR** Stanford Graduate School of Business Research Paper: 917; Graduate School of Business, Stanford University, Stanford, CA 94305-2391. **PG** 21. **PR** No Charge. **JE** 021, 313, 026. **KW** Futures Contracts. Innovation. Equilibrium. Finance. Nash Equilibria.

AB This paper provides a closed form expression for the revenue-maximising and open interest maximizing design of futures contracts by exchanges in incomplete markets under uncertainty, with quadratic Von Neumann-Morgenstern preferences, a single commodity, and proportional transactions costs. As a by-product we

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obtain a testable equation for open interest. We extend the analysis by characterizing the set of Nash equilibria when a number of exchanges simultaneously or sequentially choose contracts. The optimal monopolistic contract design is shown to be Pareto optimal, while an example shows the failure of Pareto optimality for a set of contracts forming a Nash equilibrium of the multi-exchange design game. Likewise, in a monopolistic multi-period setting, an example shows failure of Pareto optimality, given an incentive for the exchange to induce churning.

PD November 1986. **TI** Money in General Equilibrium Theory. **AA** Stanford University. **SR** Stanford Graduate School of Business Research Paper: 920; Graduate School of Business, Stanford University, Stanford, CA 94305-2391. **PG** 22. **PR** No Charge. **JE** 021, 023, 213. **KW** General Equilibrium. Money.

AB This paper establishes the existence of monetary equilibrium in a static economy with a finite number of agents, each described by a preference relation, an endowment of commodities and pure fiat money, and a transactions technology. In addition to typical regularity, the assumption: not trading is Pareto inefficient provides demand for pure outside fiat money as a medium of exchange, and thereby a positive value for money in equilibrium. The paper includes a discussion of money in general equilibrium theory, including the issues of inefficiency, indeterminacy, non-convexities, and incomplete markets.

PD November 10, 1986. **TI** Equilibrium and the Role of the Firm in Incomplete Markets. **AU** Duffie, Darrell; Shafer, Wayne. **AA** Duffie: Stanford University. Shafer: University of Southern California. **SR** Stanford Graduate School of Business Research Paper: 915; Graduate School of Business, Stanford University, Stanford, CA 94305-2391. **PG** 50. **PR** No Charge. **JE** 021, 022, 514, 611. **KW** General Equilibrium. Incomplete Markets. Production. Finance. Modigliani-Miller Invariance Principle.

AB This paper studies the role of the firm in incomplete markets. Stock market equilibria are shown to exist generically in economies with "smooth" preferences and production sets. The set of equilibrium allocations is generically infinite. The stochastic setting is described by an arbitrary event tree. At each state and date agents trade on markets for spot commodities, common stocks, and other general securities. The goal of share value maximization by firms is shown to be generically strictly sub-optimal in equilibrium for all but (at most) a single shareholder. The Modigliani-Miller Invariance Principle, showing the irrelevance of the financial policy of the firm, is re-examined in the light of incomplete markets.

Dufour, Jean Marie

PD July 1986. **TI** Nonlinear Hypotheses, Inequality Restrictions and Non-Nested Hypotheses Exact Simultaneous Tests in Linear Regressions. **AA** Universite de Montreal and CORE. **SR** Universite Catholique de Louvain CORE Discussion Paper: 8616; Centre for Operations Research and Econometrics, Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 24. **PR** No Charge. **JE** 211. **KW** Nonlinear Hypotheses. Non-Nested Hypotheses. Inequality Restrictions. Exact Simultaneous Tests. Bounds Tests.

AB In the context of the classical linear model, the problem of comparing two arbitrary hypotheses on the regression coefficients is considered. Problems involving nonlinear hypotheses, inequality restrictions and non-nested hypotheses are included as special cases. Exact bounds on the null distribution of likelihood ratio statistics are derived. The bounds are based on the central Fisher distribution and are very easy to use. In an important special case, a bounds test similar to the Durbin-Watson test is proposed. Multiple testing problems are also studied. The bounds obtained for a single pair of hypotheses are shown to enjoy a simultaneity property which allows one to combine any number of tests. This result extends to nonlinear hypotheses a well-known result given by Scheffe for linear hypotheses. A method of building bounds induced tests is also proposed.

Dumas, Bernard

PD September 1986. **TI** Two-Person Dynamic Equilibrium: Trading in the Capital Market. **AA** University of Pennsylvania. **SR** National Bureau of Economic Research Working Paper: 2016; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 313, 521, 026. **KW** Capital Market Trade. Portfolio Choice. Hedging.

AB When several investors with different risk aversions trade competitively in a capital market, the allocation of wealth fluctuates randomly between them and acts as a state variable against which each market participant will want to hedge. This hedging motive complicates the investors' portfolio choice and the equilibrium in the capital market. Although every financial economist is aware of this difficulty, to our knowledge, this issue has never been analysed in detail. The current paper features two investors, with the same degree of impatience, one of them being logarithmic and the other having an isoelastic utility function. They face one risky constant-return-to-scale stationary production opportunity and they can borrow and lend to and from each other. The behavior of the allocation of wealth is characterised, along with the behavior of the rate of interest and that of the security market line. The two main results are: (1) investors in equilibrium do revise their portfolios over time so that some trading takes place, (2) provided some conditions are satisfied, the allocation of wealth admits a steady-state distribution at an interior point; this is in contrast to the certainty case, where one investor in the long run holds all the wealth. The existence of trading opens the way to a theory of capital flows and market trading volume.

Eaton, B. Curtis

PD June 1986. **TI** Wealth - The Support of Institutions and the Limits of Control. **AU** Eaton, B. Curtis; White, William D. **AA** Eaton: University of Toronto. White: University of Illinois. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-26; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305.

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PG 29. **PR** No Charge. **JE** 914, 916, 824, 826, 024. **KW** Wealth. Systems of Economic Control. Crime. Punishment. Income Redistribution.

AB This paper focuses on the rules which society's wealth and its distribution play in systems of economic control. The analysis focuses on some simple models of crime and punishment. We show that the wealthier an individual is the less costly it is to devise a control mechanism which induces the individual to obey the law. We discover situations in which redistribution of income is Pareto-improving because the redistribution reduces the cost of inducing all individuals to respect the rights of property, teaching individuals to conduct their private affairs more efficiently.

PD June 1986. **TI** Product Differentiation. **AU** Eaton, B. Curtis; Lipsey, Richard G. **AA** Eaton: University of Toronto. Lipsey: Queen's University. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-27; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 72. **PR** No Charge. **JE** 022, 611. **KW** Product Differentiation. Monopolistic Competition. Spatial Competition.

AB This paper reviews two strands of the theoretical literature on product differentiation. One strand begins with Chamberlin's work on monopolistic competition, the other with Hotelling's work on spatial competition.

Edison, Hali J.

PD October 1986. **TI** The Structure and Properties of the FRB Multicountry Model Part I: Model Description and Simulation Results. **AU** Edison, Hali J.; Marques, Jaime R.; Tryon, Ralph W. **AA** Division of International Finance, Board of Governors of the Federal Reserve System. **SR** Board of Governors of the Federal Reserve System International Finance Discussion Paper: 293; Division of International Finance Board of Governors of the Federal Reserve System, Washington, DC 20551. **PG** 313. **PR** No Charge. **JE** 212, 132, 421, 431, 441. **KW** Econometric Models. Multicountry Models. United States. Canada. Germany. Japan. United Kingdom. Trade. Exchange Rates.

AB The FRB Multicountry Model (MCM) is a linked system of five quarterly national macroeconometric models of the United States, Canada, Germany, Japan, and the United Kingdom. The MCM emphasizes international linkages, and has equations for trade in goods and services, investment income flows, and exchange rates. This paper documents the current version of the MCM. The paper describes the theoretical structure of the model, and presents the empirical estimation results. The paper also describes a series of simulations of fiscal and monetary policy scenarios and external shocks. A complete listing of the model is given in an appendix.

Ehrenberg, Randy A.

TI Merit Pay for School Superintendents? **AU** Ehrenberg, Ronald G.; Chaykowski, Richard P.; Ehrenberg, Randy A.

Ehrenberg, Ronald G.

PD June 1986. **TI** Merit Pay for School Superintendents? **AU** Ehrenberg, Ronald G.; Chaykowski, Richard P.; Ehrenberg, Randy A. **AA** Ehrenberg, R. G.: Cornell University. Chaykowski: Queen's University. Ehrenberg, R. A.: DeWitt Middle School. **SR** National Bureau of Economic Research Working Paper: 1954; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 912, 820, 812. **KW** Merit Pay. School Superintendents.

AB Given the important role that school district administrators play in the educational process, one might expect their "performance" to be of fundamental importance in determining both how much students learn and the cost of public education to taxpayers. Yet, while public debate has considered the issue of merit pay plans for teachers, virtually no attention has been directed to the methods by which school administrators are compensated. This paper provides evidence on whether school superintendents are explicitly or implicitly rewarded for their "performance" by higher compensation and/or greater opportunities for mobility. We analyze panel data from over 700 school districts in New York State during the 1978-79 to 1982-83 period. Measures of performance are defined and then entered into salary level, salary change, and mobility equations. While evidence is provided that school superintendents are rewarded for "performance", the magnitude of the rewards appear to be quite small.

Eichenbaum, Martin S.

TI Temporal Aggregation and Structural Inference in Macroeconomics. **AU** Christiano, Lawrence J.; Eichenbaum, Martin.

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

Eichengreen, Barry

PD November 1986. **TI** The Economic Consequences of the Franc Poincare. **AU** Eichengreen, Barry; Wyplosz, Charles. **AA** Eichengreen: Harvard University. Wyplosz: INSEAD. **SR** National Bureau of Economic Research Working Paper: 2064; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 044, 122, 321, 131, 431. **KW** Franc. France. Depression. Investment. Fiscal Policy.

AB In this paper we reassess the cyclical performance of the French economy in the 1920s, focusing in particular on the period 1926-1931 and on France's resistance to the Great Depression. France expanded rapidly after 1926 and, unlike the other leading industrial economies, resisted the onset of the Depression until 1931. We find strikingly little support for the conventional explanation for these events, which emphasizes an undervalued French franc and an export-led boom. While French exports as a share of GDP turned down as early as 1928, the economy continued to expand for several subsequent years. Investment, not exports, emerges as the proximate source of the French economy's resistance to the Great Depression. And fiscal policy emerges as the major determinant of the surge in French investment spending. Previous accounts have emphasized the role of monetary policy in determining the real and nominal exchange rates

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ostensibly responsible for French economic fluctuations in the decade after 1921. In contrast, we argue here for a more balanced view of the roles of monetary and fiscal policies in French macroeconomic fluctuations over that critical decade.

Eldor, Rafael

PD August 1986. **TI** Trade Liberalization and Imperfect Competition: A Welfare Analysis. **AU** Eldor, Rafael; Levin, Dan. **AA** Eldor: Department of Economics, Tel-Aviv University. Levin: Department of Economics, University of Houston. **SR** Tel Aviv Foerder Institute for Economic Research Working Paper: 36-86; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. **PG** 24. **PR** No Charge. **JE** 411, 611. **KW** Trade. Imperfect Competition. Welfare. Outarky.

AB This paper identifies sufficient conditions for an increase/decrease in a country's welfare when we deviate from autarky towards free trade. It considers monopoly or Cournot oligopoly in the industry which imports its product in free trade.

PD November 1986. **TI** Productivity Shocks and Home Asset Preference. **AU** Eldor, Rafael; Pines, David; Schwartz, Abba. **AA** Eldor: School of Management, Boston University. Pines: Department of Economics, University of Western Ontario. Schwartz: Ohio State University, Department of Economics. **SR** Tel Aviv Foerder Institute for Economic Research Working Paper: 42-86; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. **PG** 22. **PR** No Charge. **JE** 026, 022, 313. **KW** Assets. Nontraded Good. Portfolio. Productivity Shocks.

AB This paper elaborates on the (sufficient) conditions for the domestic investor/consumer to hedge against uncertainty by holding in equilibrium a disproportionate share of domestic assets (real equities and indexed bonds). The analysis is carried out in a framework of a general equilibrium of the products and assets markets, when the source of the uncertainty is productivity shocks. The sufficient condition for home asset preference suggested in the literature are derived when either no market for real equities exists, or the price elasticity of the demand for the nontraded good is unitary. But when real equities are traded and the demand for the nontraded good is not unitary, the above condition for home asset preference is not sufficient. Instead it is shown that when the relative measure of risk aversion exceeds the income elasticity of the demand for the domestic montraded good and, simultaneously, this demand is price inelastic, then the share in the equilibrium portfolio of at least one of the two domestic assets (i.e. indexed bonds or real equities) are disproportionally high.

Ellis, Gregory M.

PD October 1986. **TI** Valuing the Environment as Input. **AU** Ellis, Gregory M.; Fisher, Anthony C. **AA** Department of Agricultural and Resource Economics, College of Natural Resources, University of California, Berkeley. **SR** University of California at Berkeley Department of Agricultural and Resource Economics (CUDARE) Working Paper: WP: 427; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 23p. **PR** $4.60. **JE** 722, 721, 024. **KW** Valuation. Environment. Inputs. Welfare. Environmental Change.

AB The purpose of this paper is to suggest and then illustrate an approach to environmental valuation which we feel has considerable theoretical and practical appeal: valuation of the environment as an input to the production of a marketed good. This approach differs from the usual one in the economics literature in which demand is directly estimated for the environment as a final good. Some noneconomists have suggested using impacts of an environmental change on product revenues as a measure of the value of the change. We show how to use these kinds of product data in a way that is rooted (as estimates of revenue impacts are not) in the welfare theory generally accepted by economists.

Engel, Charles

PD October 1986. **TI** A Test of International CAPM. **AU** Engel, Charles; Rodrigues, Anthony. **AA** Engel: National Bureau of Economic Research. Rodrigues: Fordham University. **SR** National Bureau of Economic Research Working Paper: 2054; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 313, 441, 311. **KW** Capital Asset Pricing Model. International Capital Asset Pricing Model.

AB We propose and implement a Wald test of the international capital asset pricing model. Ex post asset returns are regressed on asset supplies. The Capital Asset Pricing Model requires that the matrix of coefficients from a regression of n rates of return on n asset supply shares be proportional to the covariance matrix of the residuals from those regressions. We test this restriction in the context of a model that aggregates all outside financial assets for each of ten countries. We do not find strong support for the restrictions of CAPM.

Epple, Dennis

PD October 1986. **TI** Cooperation and Punishment Under Repeated Majority Voting. **AU** Epple, Dennis; Riordan, Michael H. **AA** Epple: Carnegie-Mellon University. Riordan: Stanford University; National Fellow, Hoover Institution. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-63; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 41. **PR** No Charge. **JE** 025, 026. **KW** Cooperation. Majority Voting. Repeated Game.

AB We study the collective enforcement of agreements under the institution of majority rule. We explore the types of sanctions that can be credibly invoked by majority enforcement, and we investigate the types of cooperative agreements that can be supported by these sanctions. In addition, we contrast allocations achievable under private enforcement with those that can be sustained by collective enforcement.

Faigle, Ulrich

PD April 1986. **TI** Setup Optimisation Problems With Matroid Structure. **AU** Faigle, Ulrich; Schrader, Rainer. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85399; Sonderforschungsbereich 303 an der Universitat Bonn,

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Adenauerallee 24-42, D-5300 Bonn 1, Deutschland. **PG** 13. **PR** No Charge. **JE** 213. **KW** Setup Minimisation Problems. Matroid Independence Systems.

AB A class of ordered sets is investigated for which the setup minimisation problem gives rise to matroid independence systems. This class includes in particular all N-free ordered sets and all M-free ordered sets of height at most one. The matroid structure can be recognized efficiently; whence the matroid greedy algorithm may be used to solve the weighted minimisation problem.

Fair, Ray C.

PD November 13, 1986. **TI** Forecasting the Depression: Harvard Versus Yale. **AU** Fair, Ray C.; Shapiro, Matthew D.; Domingues, Kathryn M. **AA** Yale University. **SR** Yale Cowles Foundation Discussion Paper: 808; Cowles Foundation for Research in Economics, 30 Hilhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 36. **PR** No Charge. **JE** 042, 031, 130. **KW** Depression. Forecasting.

AB Was the Depression forecastable? After the Crash, how long did it take contemporary economic forecasters to realise how severe the downturn was going to be? How long should it have taken them to come to this realization? These questions are addressed by studying the predictions of the Harvard Economic Service and Yale's Irving Fisher during 1929 and the early 1930's. The data assembled by the Harvard and Yale forecasters are subjected to modern statistical analysis to learn whether their verbal pronouncements were consistent with the data. We find that both the Harvard and Yale forecasters were systematically too optimistic, yet nothing in the data suggests that the optimism was unwarranted.

PD December 1986. **TI** Interest Rate and Exchange Rate Determination. **AA** Yale University. **SR** Yale Cowles Foundation Discussion Paper: 810; Cowles Foundation for Research in Economics, 30 Hilhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 35. **PR** No Charge. **JE** 431, 212, 132, 313. **KW** Interest Rate. Exchange Rates. Multicountry Econometric Model.

AB It is well known that modeling exchange rates is difficult. Meese and Rogoff's (1983) results show that a random walk model performs as well as or better than a variety of structural models, where the forecasts from the structural models are based on the actual values of the future explanatory variables. Because of these and other results, the view has become fairly widespread that structural models of exchange rates are not very good. There is, however, somewhat of a dichotomy in the literature between those who deal with small models, where the focus is almost exclusively on exchange rates, and those who deal with large macroeconometric models, where exchange rates make up only a small subset of the endogenous variables. One might have thought, for example, that in a survey like Levich's (1985) both types of models would be considered, but the large models are given only one footnote (fn. 19, p. 1001). It may be that exchange rate determination within the context of large models has not been given a sufficient hearing. Exchange rate and interest rate equations are estimated and analysed for 17 countries in this paper. This study is part of a larger project of constructing a multicountry econometric model. One of the aims of this paper is to see if the exchange rate equations that are part of my multicountry model also suffer from the Meese and Rogoff criticism. The results show that the view that structural exchange rate models are not very good may be too pessimistic. The theory upon which the multicountry econometric model is based is outlined in Section II. The exchange rate and interest rate equations are estimated in Section III and tested in Section IV.

Farber, Henry S.

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

Farrell, Joseph

PD February 1986. **TI** Installed Base and Compatibility: Innovation, Product Preannouncements and Predation. **AU** Farrell, Joseph; Saloner, Garth. **AA** Farrell: GTE Laboratories Incorporated. Saloner: Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 411; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 44. **PR** No Charge. **JE** 022, 611, 621. **KW** Innovation. Installed Base. Compatibility. Predation.

AB A good is often more valuable to any user, the more others use compatible goods. We show that this effect may inhibit innovation. If an installed base exists and transition to a new standard must be gradual, early adopters bear a disproportionate share of transient incompatibility costs. This can produce "excess inertia". The installed base, however, is "stranded" if the new standard is adopted: this may create "excess momentum". These dynamic effects have strategic implications. Temporary price cutting can permanently prevent entry; and product preannouncements can be critical in innovation. These strategic actions have ambigous welfare effects.

Farrow, Raymond J.

PD April 1986. **TI** Labour Contracts with Firms Subject to Debt Default Penalties. **AA** Department of Economics, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 667; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 26. **PR** $2.50 Canada; $3.00 United States; $3.50 foreign. **JE** 022, 832, 821, 511, 026. **KW** Debt Default. Incentive Compatibility. Labor Contracts. Wage Concessions.

AB When risk neutral firms face costly debt default penalties they will be unwilling to fully insure their workers against all variations in their productivity. Under asymmetric information feasible contracts produce ex post productive inefficiency as a result of attempts to avoid default in poor states of nature. Under some circumstances, however, it is possible that productive efficiency and local insurance of workers (ie., sticky wages) in good states for the firm is maintained. The immediate cause of this inefficiency is traceable to the operation of the credit market, and therefore the cure for the unemployment here identified is to be found in interventions on the credit market. Finally it is shown

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that ex ante workers may be unwilling to make wage concessions so as to save the firm from default.

TI Neo-Classical Adjustment Rules with Time Varying Discount Rates - Theory and Applications. **AU** Coles, Melvyn G.; Farrow, Raymond J.

Feenberg, Daniel R.

PD September 1986. **TI** Tax Structure and Public Sector Growth. **AU** Feenberg, Daniel R.; Rosen, Harvey S. **AA** Feenberg: National Bureau of Economic Research. Rosen: Princeton University. **SR** National Bureau of Economic Research Working Paper: 2020; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 322, 323, 324. **KW** Tax Structure. Public Sector Growth. Taxes.

AB It has been hypothesized that a jurisdiction's tax structure exerts an independent effect upon the growth of its public sector. We test this hypothesis by examining the relationship between the growth of state general expenditure and the elasticity of tax revenues with respect to income. The work takes advantage of a very careful set of income elasticities for the personal income and sales tax systems for each state, for every year from 1978 to 1983. The main conclusion is that the data do not support the notion that the form of the tax structure exerts an independent effect on public sector growth.

Feldstein, Martin

PD October 1986. **TI** New Evidence on the Effects of Exchange Rate Intervention. **AA** National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2052; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 431. **KW** Exchange Rate Intervention. Dollar Decline. Coordinated Intervention. G-5 Agreement.

AB The September 1985 decision of the G-5 countries to pursue coordinated intervention has been widely credited with the subsequent sharp decline of the dollar relative to other major currencies. On the surface, the dollar's decline appears as evidence that coordinated intervention can be an effective instrument of economic policy, contrary to most of the previous economic analysis of this issue. The evidence in the present paper shows that such a conclusion is unwarranted. The dollar's decline in the nine months after the G-5 agreement was generally no faster than it had been since the beginning of its decline in the spring of 1985. The only indication of discontinuity in the overall behavior of the dollar was a drop of about 4 percent that occurred immediately after the G-5 meeting and that has largely persisted. Although this evidence cannot be taken as a conclusive indication that coordinated intervention had no effect on the dollar's rate of decline, it does show the inappropriateness of interpreting the dollar's decline after September 1985 as evidence that coordinated intervention was effective. The special case of the Japanese yen is more ambiguous. Unlike all of the other G-5 currencies, the yen did appreciate more rapidly after the G-5 meeting than it did before. But the Japanese government was also unique in making a major shift in monetary policy immediately after the G-5 meeting to strengthen the yen and the yen was also the major currency that could be expected to appreciate most as a result of the massive and unexpected decline of the price of oil in the first half of 1986.

PD November 1986. **TI** International Debt Service and Economic Growth: Some Simple Analytics. **AA** National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2076; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 443, 433, 432, 111, 431. **KW** International Debt. Economic Growth. Debt Management. Argentina. Brazil. Mexico. International Loans.

AB Any arrangement that is to serve as a long-term framework for international debt management must permit a politically acceptable rate of economic growth in the debtor countries while gradually improving the financial positions of the creditor banks. In addition, a realistic debt management strategy must maintain enough new lending to the debtor countries to provide an incentive for continued compliance with debt service responsibilities. This paper establishes the conditions under which these three goals are compatible. The analysis indicates that Argentina, Brazil and Mexico are now all capable of achieving significant rates of economic growth without debt write-downs or interest rate reductions. They do require additional amounts of credit but the resulting increases in the absolute size of their debts is compatible with declining ratios of debt to their own exports and to the total earnings of the creditor banks. Stated differently, limiting the ratio of debt service payments to GNP to country-specific standards, whether by long-term agreements or by annual negotiations, can achieve economic growth while improving the financial conditions of the creditor banks.

PD November 1986. **TI** The Effects of Fiscal Policies When Incomes are Uncertain: A Contradiction to Ricardian Equivalence. **AA** National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2062; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 023, 321, 026. **KW** Fiscal Policy. Ricardian Equivalence. Uncertainty. Bequest Motive.

AB This paper shows that when earnings are uncertain the substitution of deficit finance for tax finance or the introduction of an unfunded social security program will raise consumption even if all bequests reflect intergenerational altruism. Thus, contrary to the theory developed by Barro and a number of subsequent writers, an operative bequest motive need not imply Ricardian equivalence. Since there is no uncertainty in the present analysis about the date of each individual's death, this conclusion does not depend on imperfections in annuity markets. Nor does it depend on the existence of non-lump-sum taxes and other distortions. Rather it follows from the result derived in the paper that, when an individual's future earnings are uncertain, his future bequest is also uncertain and his consumption therefore rises more in response to an increase in his current disposable income than to an equal present value increase in the disposable income of his potential heirs.

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Fischer, Stanley

PD April 1986. **TI** Paul Samuelson. **AA** Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 416; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 35. **PR** No Charge. **JE** 031. **KW** Paul Samuelson.

AB This paper describes the major analytic contributions of Paul Samuelson in several areas, concluding with a description of his role at and through Massachusetts Institute of Technology.

Fishelson, G.

PD August 1986. **TI** On the Simultaneous Determination of the Exchange Rate and the Domestic Price Level - A Note. **AA** Department of Economics, Tel-Aviv University. **SR** Tel Aviv Foerder Institute for Economic Research Working Paper: 38-86; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. **PG** 15. **PR** No Charge. **JE** 431, 134, 023. **KW** Domestic Prices. Exchange Rates. Inflation. Open Economy.

AB A simultaneous equations model consisting of two equations is suggested to describe the cross effects between the two endogeneous variables, the exchange rate, and the domestic price level. The two equations are estimated using only lagged values of the endogeneous variables. The estimated relations follow a priori expectations. When the stability of the system is checked for, it is found to be stable in all countries except Germany.

PD August 1986. **TI** Adoption of Agricultural Innovation: The Case of Drip Irrigation of Cotton in Israel. **AU** Fishelson, G.; Rymon, D. **AA** Fishelson: Department of Economics, Tel-Aviv University. Rymon: Department of R and D Economics, The Volcani Center. **SR** Tel Aviv Foerder Institute for Economic Research Working Paper: 35-86; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, Israel. **PG** 28. **PR** No Charge. **JE** 621, 716. **KW** Adoption. Irrigation. Cotton. Ceiling. Israel. Profitability. Kibbutzim. Logistic Function.

AB The adoption parameters of drip irrigation in cotton growing in the collective farms sector, kibbutzim, in Israel are estimated. The classical logistic function is perfectly retrieved. The estimated parameters are then explained by a variable that represents profitability, the change of yield. In spite of the small number of data points it again appears that profitability is the major explanatory variable for the adoption of a new technology. A hypothesis of dynamic ceiling is described and estimates are drawn.

TI Economic Analysis of Cotton Irrigation Technologies. **AU** Rymon, D.; Fishelson, G.

Fisher, Anthony C.

TI Valuing the Environment as Input. **AU** Ellis, Gregory M.; Fisher, Anthony C.

PD October 27, 1986. **TI** Whither Oil Prices: The Evidence from Theory. **AA** Department of Agricultural and Resource Economics, University of California, Berkeley. **SR** University of California at Berkeley Department of Agricultural and Resource Economics (CUDARE) Working Paper: 428; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 29p. **PR** $5.80. **JE** 723, 721, 421, 632, 611. **KW** Oil Prices. Discount Rate. World Oil Market. Organization of Petroleum Exporting Countries. Supply and Demand. OPEC.

AB This paper suggests a likely course of oil prices over the next several years on the basis of theoretical models of the world oil market calibrated to pre-1973 levels of prices, production, and reserves. The current competitive environment, with price in the $10-$15 per barrel range and increasing very gradually, should prevail until the early 1990s. At that time excess supply and excess capacity in the industry will all but disappear, making a jump to the Organization of Petroleum Exporting Countries cartel's joint wealth-maximizing price of about $25 per barrel likely.

Fisher, Franklin M.

TI On Stability Analysis with Disequilibrium Awareness. **AU** Stahl, Dale O. II; Fisher, Franklin M.

PD October 20, 86. **TI** The Formation of Economic Magnitudes: Disequilibrium and Stability. **AA** Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 433; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 45. **PR** No Charge. **JE** 021, 022, 031. **KW** General Equilibrium. Disequilibrium. Stability.

AB The analysis of disequilibrium, and especially, stability is essential if equilibrium economics is to be a useful tool and the formation of economic magnitudes understood. The subject is surveyed, with an eye to the "key question" of whether a competitive economy is necessarily driven to equilibrium by the actions of arbitraging agents. Too often analysis has rested with equilibrium modes of thought, being strongest when considering the formulation of plans by individual agents and weakest when analyzing what happens when those plans are frustrated. A more extensive treatment can be found in Fisher, Disequilibrium Foundations of Equilibrium Economics (Cambridge: Cambridge University Press, 1983).

Flood, Eugene Jr

PD July 1986. **TI** Operating Exposure to Exchange Rates: A Synthesis. **AA** Stanford University. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-43; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 18. **PR** No Charge. **JE** 431, 521, 442. **KW** Exchange Rates. Firm's Operation.

AB The volatile real value of the United States dollar has sent shocks through both United States and non-United States businesses. Not only have these exchange rate changes affected financial decisions of firms, but they have also affected the cash flows that result from their day-to-day business operations. This article provides a brief synthesis of recent research on the measurement and management of the impact of exchange rate changes on firms' operations.

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PD July 1986. **TI** U.S. Taxation of Foreign-Source Earnings and Intrafirm Financing and Remittance Decisions. **AA** Stanford University. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-42; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 33. **PR** No Charge. **JE** 521, 442, 323. **KW** External Financing. Multinationals. Foreign Subsidiary.

AB It has long been recognized that a firm can affect the taxes it pays by altering the amount of external financing it takes in the form of borrowing. This can, in turn, affect the value of the firm to shareholders. By altering the amount of foreign subsidiary borrows from a parent, a United States-based multinational firm can also affect its value to shareholders. The reason behind this is that dividend and interest payments from subsidiary to parent are treated differently for tax purposes. Hence, taxes will affect the choice of channels through which a firm will want to move profits internally. Another way of viewing this is to recognize that, for capital budgeting purposes, the tax rate on an investment in a foreign subsidiary is a function of which channels are used to remit profits. This article describes the major components of the United States tax rules for foreign source income of United States-based multinational companies. Using a multi-period model, optimal subsidiary financing and remittance rules are developed.

PD July 1986. **TI** Global Competition and Exchange Rate Exposure. **AA** Stanford University. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-41; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 35. **PR** No Charge. **JE** 431, 227, 611. **KW** Exchange Rates.

AB In recent years international trade and international factors such as foreign currency exchange rate have grown in importance in firm-level decisions. The purpose of this paper is to analyse the primary economic factors which determine the way in which prices, production and cash flows adjust when exchange rate change. In addition, the impact on the cash flow adjustment to exchange rate changes of some strategic responses to increased global competition are considered. For example, it is shown that firms involved in monopolistic competition which (in an attempt to become more competitive) lower their marginal costs will reduce the sensitivity of their output prices to exchange rate changes, but increase the sensitivity of their total profits to exchange rates.

PD July 1986. **TI** An Empirical Analysis of the Effect of Exchange Rate Changes on Goods Prices. **AA** Stanford University. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-40; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 27. **PR** No Charge. **JE** 431, 027. **KW** Exchange Rates. Prices.

AB It is widely believed that changes in foreign currency exchange rates can affect the prices of goods in domestic markets as well as the prices of traded goods. A question of interest to economists, businesses and policymakers is: What determines which industries are most affected by exchange rate changes? This article examines the importance of two factors on the responsiveness of individual goods prices to exchange rate changes: the distribution of consumption and production of a particular good across countries.

Fourer, F.

TI Finding Embedded Network Rows in Linear Programs I: Extraction Heuristics. **AU** Bixby, R. E.; Fourer, F.

Frank, Andras

PD June 1986. **TI** On Connectivity Properties of Eulerian Digraphs. **AA** University of Budapest. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 86419; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, Deutschland. **PG** 23. **PR** No Charge. **JE** 213. **KW** Eulerian Graphs. Theorem of Rothschild and Whinston. Two Commodity Flow Problem. Theorem of Lovasz.

AB Directed counterparts of theorems of Rothschild and Whinston and of Lovasz concerning Eulerian graphs are proved. As a consequence, a polynomial time algorithm is presented to solve the integral two-commodity flow problem in directed graphs provided that the capacities are "Eulerian".

Frank, Richard G.

PD September 1986. **TI** The Impact of Medicare's Prospective Payment System on Psychiatric Patients Treated in Scatterbeds. **AU** Frank, Richard G.; Lave, Judith R.; Taube, Carl; Rupp, Agnes; Goldman, Howard H. **AA** Frank: Johns Hopkins University. Lave: University of Pittsberg. Taube, Rupp and Goldman: National Institute of Mental Health. **SR** National Bureau of Economic Research Working Paper: 2030; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 913. **KW** Medicare. Prospective Payment System. Psychiatric Care.

AB Medicare's Prospective Payment System (PPS) for hospitals was phased-in during the 1984 Federal Fiscal Year. While many providers of psychiatric in-patient care were exempted from PPS patients treated in general hospital beds outside of psychiatric units (scatterbeds) were not. This allows for an initial assessment of the impact of PPS on psychiatric patients. We use a single equation model of hospital length of stay to estimate the impact of PPS. We allow for the possibility of both anticipating behavior and slow adjustment to the new payment scheme. The results indicate a substantial response to PPS over the first year of implementation. The estimated response includes sizable anticipatory and slow adjustment components. The findings suggest that policy discussions may be weighted too heavily in the direction of concern over hospital financial status given the ability of hospitals to change their behavior.

Frankel, Jeffrey A.

PD May 1985. **TI** The Implications of Mean-Variance Optimization for Four Questions in International Macroeconomics. **AA** Department of Economics, University of California, Berkeley. **SR** National Bureau

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of Economic Research Working Paper: 1617; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 36. **PR** $2.00. **JE** 431, 441, 313, 442, 023. **KW** Risk Aversion. Exchange Rates. Forward Rates. Risk Premiums. Current Account. Capital Flows. Mean-Variance Optimization.

AB The hypothesis that investors optimize with respect to the mean and variance of their end-of-period wealth has powerful implications for some standard questions of interest to international macroeconomists. The implications transcend the particular econometric technique used to estimate the return variance-covariance matrix. (1) For conventional estimates of risk-aversion, substitutability between domestic and foreign securities is close to perfect in the sense that risk premiums are small in magnitude (a few basis points), and thus cannot explain much bias in forward rates. (2) Nevertheless, as long as risk-aversion is not zero, foreign exchange intervention still affects the level of the exchange rate. If interest rates are held constant, the effect is proportionate to the contemporaneous change in asset supplies, and is more-than-proportionate if the expectations of future asset supplies also change. (3) Current account deficits have effects that are comparable to, though smaller in magnitude than, the effects of equal-sized changes in asset supplies through intervention or government borrowing. (4) The perceived tendency for dollar depreciation to be associated with appreciation of the mark against the franc is not consistent with the implication of mean-variance optimisation that the franc should be a closer substitute for the dollar than is the mark.

PD September 1986. **TI** Short-term and Long-term Expectations of the Yen/Dollar Exchange Rate: Evidence from Survey Data. **AU** Frankel, Jeffrey A.; Froot, Kenneth A. **AA** Frankel: University of California, Berkeley. Froot: Massachusetts Institute of Technology. **SR** Board of Governors of the Federal Reserve System International Finance Discussion Paper: 292; International Finance Division, Board of Governors of the Federal Reserve System, Washington, D.C. 20551. **PG** 32. **PR** No Charge. **JE** 431, 132, 131. **KW** Expectations. Survey. Exchange Rates. Yen. Forward Rates. Random Walk. Depreciation.

AB Three surveys of exchange rate expectations allow us to measure directly the expected rates of return on yen versus dollars. Expectations of yen appreciation against the dollar have been (1) consistently large, (2) variable, and (3) greater than the forward premium, implying that investors were willing to accept a lower expected return on dollar assets. At short-term horisons expectations exhibit bandwagon effects, while at longer-term horisons they show the reverse. A 10 percent yen appreciation generates the expectation of a further appreciation of 2.4 percent over the following week, for example, but a depreciation of 3.4 percent over the following year. At any horison, investors would do better to reduce the absolute magnitude of expected depreciation. The true spot rate process behaves more like a random walk.

PD October 1986. **TI** International Capital Mobility in Developing Countries vs. Industrial Countries: What do Saving-Investment Correlations Tell Us? **AU** Frankel, Jeffrey A.; Dooley, Michael; Mathieson, Donald. **AA** Frankel: University of California, Berkeley. Dooley; Mathieson: IMF. **SR** National Bureau of Economic Research Working Paper: 2043; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 123, 023, 441, 442. **KW** International Capital Mobility. Investment Rates. National Savings Rates.

AB The finding of Feldstein and Horioka (1980) that countries' investment rates are highly correlated with their national saving rates has by now been confirmed by many subsequent studies, even though their inference that international capital mobility must be low has not been as widely accepted. This paper examines the statistical relationship between national saving and investment in a sample that includes not only 14 industrialized countries, but also 50 developing countries. The paper addresses some of the econometric critiques that have been aimed at the Feldstein-Horioka work. Contrary to what one would expect from consideration of capital mobility, the coefficient appears higher for industrialized countries than for developing countries, and higher after 1973 than before. Our interpretation of the saving-investment evidence is that the hypothesis of a high degree of substitutability for claims on physical capital located in different countries is not supported by the data. International substitutability for financial capital may be high, but this is a separate condition (which is properly tested by looking directly at rates of return). High international substitutability for bonds would imply high international substitutability for physical capital if capital were perfectly substitutable for bonds within each country, but there is no reason for this to hold, any more than there is for all goods to be perfect substitutes.

PD October 1986. **TI** International Macroeconomic Policy Coordination When Policy-Makers Disagree on the Model. **AU** Frankel, Jeffrey; Rockett, Katherine. **AA** University of California, Berkeley. **SR** National Bureau of Economic Research Working Paper: 2059; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 423, 023. **KW** Macro Policy Coordination. Model Disagreement.

AB The existing literature on international macroeconomic policy coordination makes the unrealistic assumption that policy-makers all know the true model, from which it follows in general that the Nash bargaining solution is superior to the Nash non-cooperative solution. But everything changes once we recognise that policy-makers' models differ from each other and therefore from the "true" model. It is still true that the two countries will in general be able to agree on a cooperative policy package that each believes will improve the objective function relative to the Nash non-cooperative solution. However, the bargaining solution is as likely to move the target variables in the wrong direction as in the right direction, in the light of a third true model. This paper illustrates these theoretical points with monetary and fiscal multipliers taken from simulations of eight leading international econometric models. (It is a sequel to National Bureau of Economic Research Working Paper 1925, which considered coordination between the domestic monetary and fiscal authorities.) Here we first consider coordination between United States and non-United States central banks. We find that out of 512 possible

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combinations of models that could represent United States beliefs, non-United States beliefs and the true model, coordination improves United States welfare in only 289 cases, reducing it in 206, and improves the welfare of other OECD countries in only 297 cases, reducing it in 198. Then we consider coordination with both monetary and fiscal policy. We find that out of 512 combinations, coordination improves United States welfare in 183 cases, reducing it in 228, and improves the welfare of other OECD countries in 283 cases, reducing it in 219. A final section of the paper considers possible extensions of the framework, dealing with uncertainty.

Freeman, Richard B.

PD September 1986. **TI** Permanent Homelessness in America? **AU** Freeman, Richard B.; Hall, Brian. **AA** Freeman: London School of Economics. Hall: National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2013; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 914, 930, 921. **KW** Homeless Persons. Poverty. Housing. United States.

AB This paper seeks to determine the approximate number of homeless persons in the United States, the rate of change in the number, and whether or not the problem is likely to be permanent or transitory. It makes particular use of a new 1985 survey of over 500 homeless people in New York City. It finds: (1) that the much maligned 1984 Department of Housing and Urban Affairs study was roughly correct in its estimate of 250,000 - 350,000 homeless persons for 1983; (2) the number of homeless has grown since 1983, despite economic recovery, with the number of homeless families growing especially rapidly; (3) homelessness is a relatively long-term state for homeless individuals, who average 6-8 years of homelessness; (4) much of the homeless problem can be attributed to increases in the number of the poor in the 1980s and declines or rough constancy in the number of low-rent rental units; (5) relatively few homeless individuals receive welfare or general assistance money; a large proportion have spent time in jail. Overall, the study suggests that economic recovery will not solve the problem of homelessness, and that in the absence of changes in the housing market or in the economic position of the very poor, the United States will continue to be plagued with a problem of homelessness for the forseeable future.

Frenkel, Jacob A.

PD November 1986. **TI** Deficits with Distortionary Taxes: International Dimensions. **AU** Frenkel, Jacob A.; Razin, Assaf. **AA** Frenkel: University of Chicago. Razin: Tel-Aviv University. **SR** National Bureau of Economic Research Working Paper: 2080; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 431, 441, 323, 322, 421. **KW** Budget Deficit. Distortionary Tax. Interest Rates. External Borrowing.

AB This paper deals with the international effects of budget deficits arising from distortionary tax and transfer policies. The analysis demonstrates that the consequences of tax policies and the characteristics of the international transmission mechanism depend critically on the precise composition of taxes. Specifically, the international effects of budget deficits of a given size differ sharply according to the types of taxes used to generate the deficit. We show that in determining the effects of taxes it is useful to divide the various distortionary taxes into two groups: those that stimulate current external borrowing (national dissaving) and those that stimulate current external lending (national saving). A pro-borrowing tax policy raises the world rate of interest while a pro-lending tax policy lowers it. The resulting change in the rate of interest is the channel through which the effects of budget deficits are transmitted to the rest of the world. The key propositions are illustrated by a series of examples involving consumption taxes (VAT), taxes on income of labor and capital and taxes on international borrowing.

PD November 1986. **TI** Fiscal Policies and Real Exchange Rates in the World Economy. **AU** Frenkel, Jacob A.; Razin, Assaf. **AA** Frenkel: University of Chicago. Razin: Tel-Aviv University. **SR** National Bureau of Economic Research Working Paper: 2065; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 50. **PR** $2.00. **JE** 431, 321, 023. **KW** Exchange Rates. Fiscal Policy. World Economy. Deficit. Government Debt.

AB This paper examines the effects of fiscal policies on the evolution of real rates of interest and real exchange rates in the interdependent world economy. We construct an analytical framework suitable for a detailed examination of the various channels through which these variables are influenced by government spending and by tax policies. The analytical framework employs a general equilibrium approach highlighting the roles played by wealth effects and by temporal and intertemporal substitution effects. The general principle illustrated by the analysis of the dynamic effects of budget deficits is that the consequences of temporary tax policies stretch beyond the period during which the temporary policies are in effect. The counterpart to these dynamic implications is the rise in the economy's external debt induced by the budget deficit the service of which stretches into the indefinite future. By series of examples, allowing for both distortionary and non-distortionary taxes and for various patterns of government spending, it is shown that the quantitative and qualitative effects of fiscal policies on real exchange rates, real interest rates, debt accumulation and the like depend critically on the commodity composition of government spending and its intertemporal allocations on the one hand, and on the details of government debt issue and tax structure, including the timing of taxes and borrowing and the types of taxes used to finance the budget, on the other hand.

Friedman, Benjamin M.

PD November 1986. **TI** Increasing Indebtedness and Financial Stability in the United States. **AA** Harvard University. **SR** National Bureau of Economic Research Working Paper: 2072; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 133, 134, 311, 315, 321, 322. **KW** Debt. Financial Stability. United States. Monetary Policy. Inflation. Recession.

AB The United States economy's nonfinancial debt ratio has risen since 1980 to a level that is extraordinary in

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comparison with prior historical experience. Approximately one-half of this rise has consisted of increased indebtedness (relative to income) of borrowers in the economy's private sector, including both individuals and businesses, and it therefore at least potentially represents an increase in the economy-wide exposure to debt default. The United States household sector as a whole has increased its holdings of liquid and other readily marketable assets, so that in the aggregate its balance sheet is no less sound than before, but available data make it doubtful that the distribution of the additional assets matches the distribution of the additional debt closely enough to avoid debt service problems in the event of a general economic contraction. By contrast, in the case of businesses, including especially the corporate sector, there are no additional assets to match the additional liabilities, so that balance sheets as well as incomes have become more leveraged. The chief implication of this increased exposure to the threat of financial instability is not only that the United States economy is likely to be more prone to financial instability in the event of a major business contraction, but also -- and perhaps more importantly -- that, as a result, United States economic policymakers are likely to be more reluctant either to seek or to tolerate a business recession in the first place. Experience suggests that it will be difficult to balance the desire to avoid economic downturns with the ability to avoid occasional periods of aggregate excess demand, so that this increased reluctance to tolerate recessions probably implies a more expansionary monetary policy on average than would otherwise be the case. Experience also suggests that a plausible result of such a no-recession monetary policy, sustained over time, is price inflation. This process is self-limiting, however, in that over time inflation reduces the real value of the private sector's outstanding nominal indebtedness, hence reducing the risk of financial instability, and thereby removing the source of policymakers' increased reluctance to tolerate recessions.

Froot, Kenneth A.

TI Short-term and Long-term Expectations of the Yen/Dollar Exchange Rate: Evidence from Survey Data. **AU** Frankel, Jeffrey A.; Froot, Kenneth A.

Fuchs, Victor R.

PD June 1986. **TI** The Feminization of Poverty? **AA** National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 1934; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 914, 917, 841. **KW** Feminization of Poverty. Women.

AB This paper uses Census of Population and Current Population Survey data to describe and analyze the sex-incidence of poverty in 1959, 1969, 1979, and 1984 according to a fixed standard and a standard that changes with national per capita real income. The popular view that there was a large increase in the percent of adult poor who are women and that this trend has accelerated in recent years is not supported by the data. There was considerable feminisation of poverty in the 1960s, but in the 1970s the sex mix of poverty was relatively constant, and between 1979 and 1984 women's share decreased. The trend in feminization was more severe for blacks than for whites, primarily as a result of disparate trends in the 1970s. Statistical decomposition of the changes shows that an increase in the proportion of women in households without men was the principal source of feminization of poverty and the principal reason why the trend was more adverse for blacks than whites.

TI Comparable Worth in a General Equilibrium Model of the U.S. Economy. **AU** Beider, Perry C.; Fuchs, Victor R.; Bernheim, B. Douglas; Shoven, John E.

PD December 1986. **TI** Employee Response to Compulsory Short-Time Work. **AU** Fuchs, Victor; Jacobsen, Joyce. **AA** National Bureau of Economic Research, Stanford. **SR** National Bureau of Economic Research Working Paper: 2089; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 824, 825, 826. **KW** Employees. Short-Time Work. Leisure. Underemployment.

AB This paper reports the results of a survey of over 1500 employees who faced compulsory reductions of 10 percent in hours of work and earnings during the second half of 1985. The workers were asked how they used the free time and how they viewed the program, and their answers were analyzed in relation to their economic and social characteristics. On average, the workers spent 12 percent of the free time in uncompensated work for the company, 45 percent in other work (mostly housework, childcare, and other nonmarket chores), and 45 percent in leisure-time activities such as resting, reading, and hobbies. Ceteris paribus, education and income were positively related to percentage of time spent in company work, and age was negatively related. Time spent in other work rose with the presence of children, especially for women. Employee reaction to the program was generally favorable; married women were most positive and married men least positive. Workers 45 years of age and over were significantly more positive than those 35-44. There was a strong connection between time use and reaction to the program; workers who spent more of their free time working without pay at the company or in home production were much less positive than those who spent more time in leisure activities.

Fudenberg, Drew

PD February 1985. **TI** Sequential Bargaining With Many Buyers. **AU** Fudenberg, Drew; Levine, David; Tirole, Jean. **AA** Fudenberg: University of California, Berkeley. Levine: University of California at Los Angeles. Tirole: Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 366; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 18. **PR** No Charge. **JE** 026, 022. **KW** Sequential Bargaining. Many Buyers.

AB We study bargaining between a single seller and a number of potential buyers of an indivisible object. The seller bargains with one buyer at a time, but may break off negotiations to bargain with someone else. We show that if switching buyers is costless the seller can credibly commit to a single take-it-or-leave it price, while if

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switching is costly the equilibrium may involve "haggling".

Fuss, Melvyn

PD June 1986. **TI** The Canada-U.S. Auto Pact of 1965: An Experiment in Selective Trade Liberalization. **AU** Fuss, Melvyn; Waverman, Leonard. **AA** Fuss; Waverman: University of Toronto. **SR** National Bureau of Economic Research Working Paper: 1953; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 420, 431, 440, 631. **KW** Trade Liberalization. The Canada-United States Auto Pact of 1965. Efficiency Gains. Tariffs. Freetrade. Oligopoly.

AB In this paper we analyse the Canada-United States Auto Pact, a selective trade liberalization agreement which created a duty-free North American market for the major United States multinational automobile producers, but continued to protect them from offshore producers. The new international trade/I.O. literature predicts that, given the probable unexploited economics of scale and specialization in the tariff-protected small Canadian economy prior to 1965, rationalization leading to large efficiency gains in Canadian production vis a vis United States production would occur in a free trade environment. We estimate that the Auto Pact did not induce a substantial improvement in Canadian relative production efficiency. The missing ingredient seems to have been the competition-increasing effects of free trade in an oligopolistic setting that is emphasized by the new trade/I.O. literature. The Auto Pact did not increase the number of rivals in the oligopolistic Canadian industry since the major players in the industry had production facilities on both sides of the Canada-United States border before 1965, and no significant new entry into Canada occurred. In the 1962-64 period, Canadian automotive production was 27 per cent less efficient than United States production. By 1970-72 this deficiency had been reduced to 19 per cent, but was not further reduced by the end of the 1970's. Of the 8 percentage points reduction in the Canadian disadvantage, we attribute only 3 percentage points to the rationalization process induced specifically by the Auto Pact.

Gabszewicz, Jean Jaskold

TI Is International Trade Profitable to Oligopolistic Industries? **AU** Donsimoni, Marie Paule; Gabszewicz, Jean Jaskold.

PD September 1986. **TI** Vertical Product Differentiation and Competitive Discriminatory Pricing. **AU** Gabszewicz, Jean J.; Thisse, Jacques Francois. **AA** Centre for Operations Research and Econometrics, Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 8626; Centre for Operations Research and Econometrics, Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 22. **PR** No Charge. **JE** 611, 022. **KW** Product Differentiation. Discriminatory Pricing.

AB This paper investigates the impact of price discrimination in a vertically differentiated market. We show that: (i) a discriminatory pricing equilibrium exists under rather general conditions; (ii) the equilibrium qualities coincide with the Pareto-optimal qualities; and (iii) all consumers are better off under discriminatory pricing than under uniform pricing.

Gale, Ian

PD November 1986. **TI** Multiple Stock Offerings and the Financing of New Firms. **AU** Gale, Ian; Stiglitz, Joseph E. **AA** Gale: University of Wisconsin. Stiglitz: Princeton University. **SR** Princeton Financial Research Center Memorandum: 73; Financial Research Center, Department of Economics, Princeton University, Princeton, NJ 08544. **PG** 22. **PR** $3.00. **JE** 313, 521. **KW** Equity Markets. Information. Stock Offerings. Finance. Signalling.

AB This paper examines the ability of equity markets to distinguish good firms from bad. When an entrepreneur has the option of selling equity more than once, he does not signal the value of his project with his first trade. In the equilibrium, bad firms mimic the good. As a result, good projects may not get equity funding whereas projects that are not socially beneficial may receive funding. Such results strengthen the arguments for the use of other financial instruments by firms raising capital for the first time.

Gerards, A. M. H.

TI Sensitivity Results In Integer Linear Programming. **AU** Cook, W.; Gerards, A. M. H.; Schrijver, A.; Tardos, E.

Geroski, P. A.

PD July 1986. **TI** Dynamic Market Models in Industrial Organization. **AU** Geroski, P. A.; Masson, R. T. **AA** Geroski: University of Southampton. Masson: Cornell University. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 8619; Department of Economics, University of Southampton, Southampton 509 5NH, ENGLAND. **PG** 19. **PR** No Charge. **JE** 611. **KW** Market Dynamics. Market Structure. Market Performance.

AB It seems desirable to empirically analyse market dynamics, explicitly incorporating market feedback into models which describe long run equilibrium configurations. The type of extension which needs to be considered is that which traces feedback from the current state of market structure and performance to current and near future changes in these states. Building in these dynamics produces a model which describes long run industry equilibrium and systematic variations in performance around it over time. There are, in fact, two types of dynamic extension which have been explored in the literature, but neither has been used to analyse equilibrium paths over time. Our goal in this paper is to combine these two types of model to make some inferences about the speed of the competitive process, and to compare their relative merits to modelling dynamics.

Gertler, Mark

TI Agency Costs, Collateral, and Business Fluctuations. **AU** Bernanke, Ben; Gertler, Mark.

Giavazzi, Francesco

PD August 1986. **TI** Monetary Policy Interactions Under Managed Exchange Rates. **AU** Giavazzi,

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Francesco; Giovanni, Alberto. **AA** Giavazzi: Centre for Economic Policy Research. Giovanni: Columbia University. **SR** Centre for Economic Policy Research Discussion Paper: 123; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. **PG** 31. **PR** 1 pound ($2.00) individuals; 1.50 pounds ($3.00) companies, libraries, institutions. **JE** 431, 311, 432, 026. **KW** Exchange Rates. Monetary Policy. Mundell-Fleming Model.

AB This paper studies monetary policy games in a two-period Mundell-Fleming model, under a regime of managed exchange rates. A regime of managed exchange rates is defined as one where exchange rates are pegged but bilateral parities can be changed from time to time. The paper argues that such a regime is the most appropriate description of the Bretton Woods system and many arrangements currently in existence. We show that Cournot-Nash equilibria under managed rates differ significantly from those under fixed or floating rates. Under managed rates the world-wide efficiency losses from lack of coordination are not equally shared by all countries.

Gibbons, Robert

TI Dissolving a Partnership Efficiently. **AU** Crampton, Peter; Gibbons, Robert; Klemperer, Paul.

PD July 1986. **TI** Piece-Rate Incentive Schemes. **AA** Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 424; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 23. **PR** No Charge. **JE** 821, 824, 825, 026. **KW** Piece Rates. Incentive Schemes. Mechanism Design. Internal Organization.

AB This paper uses recent results from incentive theory to study heretofore informal critiques of piece-rate compensation schemes. The informal critiques are based on the history of failed attempts to install piece-rate compensation schemes at the turn of the century. The formal analysis emphasizes the importance of information and commitment in contracting. In particular, in a work environment characterized by adverse selection and moral hazard, if neither the firm nor the worker can commit to future behavior, then no compensation scheme, piece-rate or otherwise, can induce the worker not to restrict output. This striking result is based on the path-breaking work of Laffont and Tirole (1985b).

Giovanni, Alberto

TI Monetary Policy Interactions Under Managed Exchange Rates. **AU** Giavazzi, Francesco; Giovanni, Alberto.

Giovannini, Alberto

PD October 1986. **TI** Time-Varying Distributions of Returns, Nominal Interest Rates and Risk Premia in a Dynamic Asset Pricing Model. **AA** Columbia Business School. **SR** Columbia First Boston Series in Money, Economics and Finance Working Paper: FB-86-36; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 14. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). **JE** 023, 311, 313, 520. **KW** Conditional Heteroskedasticity. Interest Rate. Asset-Pricing Models. Liquidity. Risk Premium. Volatility.

AB This paper illustrates an extension of the model of Svensson (1985) to allow for stochastically changing distributions of exogenous shocks. The important results are: (i) When the distributions of shocks are i.i.d. conditional on the state of the economy, the nominal interest rate is a sufficient statistic of the state of the economy, and fluctuates together with the predictable changes in volatility of returns. (ii) As appears to be the case in the empirical data, higher nominal interest rates are associated with higher volatility of returns if relative risk aversion is greater than 1. (iii) When fluctuations in nominal interest rate arise only from changes in the volatility of future dividends, the expected nominal return differential between common stocks and a nominal inside bond -- the nominal "risk premium" -- is positively correlated with the nominal interest rate.

Godfrey, L. G.

PD September 1986. **TI** Variable Addition and Lagrange Multiplier Tests for Linear and Logarithmic Regression Models: Theory and Monte Carlo Evidence. **AU** Godfrey, L. G.; McAleer, Michael; McKenzie, C. R. **AA** Godfrey: Department of Economics, University of York. McAleer, McKenzie: Department of Statistics, Australian National University. **SR** Australian National University Working Paper in Economics and Econometrics: WP # 136; Australian National University, GPO Box 4, Canberra, ACT 2601, Australia. **PG** 31. **PR** No Charge. **JE** 211. **KW** Non-Nested Models. Box-Cox Transformation. Diagnostic Checks. Lagrange Multiplier Principle. Variable Addition Procedure.

AB The purpose of this paper is to describe various tests of linear and logarithmic (or log-linear) regression models, to discuss their theoretical underpinnings, and to present convenient computational procedures for implementing them empirically. The test procedures may be categorized as follows: (i) tests that exploit the fact that the two models are intrinsically non-nested; (ii) tests based on the more general Box-Cox data transformation; and (iii) diagnostic tests of functional form misspecification against an unspecified alternative. Within these classes, there are two general methods of testing the two models against each other: (a) tests based on the Lagrange Multiplier principle; and (b) tests that may be computed by variable addition using an auxiliary linear regression. The small-sample properties of variable addition and Lagrange Multiplier tests are investigated through a Monte Carlo experiment, as is their robustness to non-normality of the errors.

Goecke, Oskar

PD September 1986. **TI** Minor Characterization of Undirected Branching Greedoids-A Short Proof. **AU** Goecke, Oskar; Schrader, Rainer. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 86435; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, Deutschland. **PG** 6. **PR** No Charge. **JE** 213. **KW** Branching Greedoids. Forbidden Minors.

AB In 1959 Tutte gave a minor characterization of

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graphic matroids 'Matroids and graphs, Trans. Amer. Math. Soc. 90, 1959, 527-552. Within the framework of greedoids, a natural analogue of the cycle matroid in graphs is the branching greedoid. Schmidt has shown that, similar to Tutte's result, branching greedoids can be characterised by forbidden minors 'A characterization of undirected branching greedoids, to appear in: J. Comb. Th.. Here we give a simpler proof of this theorem.

Goldfeld, Stephen M.

PD September 1986. **TI** Money Demand: The Effects of Inflation and Alternative Adjustment Mechanisms. **AU** Goldfeld, Stephen M.; Sichel, Daniel E. **AA** Princeton University. **SR** Princeton Financial Research Center Memorandum: 71; Financial Research Center, Department of Economics, Princeton University, Princeton, NJ 08544. **PG** 24. **PR** $3.00. **JE** 311, 212, 134. **KW** Money Demand. Inflation Effects. Adjustment Mechanisms.

AB The paper first reconciles a variety of specification tests for partial adjustment money demand models and points out a fundamental identification problem in distinguishing between real and nominal partial adjustment models in the presence of inflation. The paper also finds that empirical estimates of simple partial adjustment models have some undesirable properties and then considers the effects of inflation in a more general distributed lag model.

Goldin, Claudia

PD June 1986. **TI** Maximum Hours Legislation and Female Employment in the 1920s: A Reassessment. **AA** University of Pennsylvania. **SR** National Bureau of Economic Research Working Paper: 1949; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 917, 042, 820, 813, 831. **KW** Maximum Hours Legislation. Female Employment. Labor Market Model.

AB The causes and consequences of state maximum hours laws for female workers, passed from the mid-1800s to the 1920s, are explored and are found to differ from a recent reinterpretation. Although maximum hours legislation reduced scheduled hours in 1920, the impact was minimal and it operated equally for men. Legislation affecting only women was symptomatic of a general desire by labor for lower hours, and these lower hours were achieved in the tight, and otherwise special, World War I labor market -- hours of work declined substantially for most workers in the second decade of this century. Most importantly, the restrictiveness of the legislation had no effect on the employment share of women in manufacturing. The legislation was, on the contrary, associated with a positive impact on the employment share of women in sales (another covered sector). Finally, labor force participation rates of women across cities during the 1920s were strongly and negatively correlated with shorter hours of work per day, consistent with one time-series explanation for the increase in female market work. These results are consistent with a labor market model in which scheduled hours of work per day are negatively related to days worked per week, and that assumption is justified using previously untapped data on actual hours, scheduled hours, and days worked for women in the covered sectors.

Goldman, Howard H.

TI The Impact of Medicare's Prospective Payment System on Psychiatric Patients Treated in Scatterbeds. **AU** Frank, Richard G.; Lave, Judith R.; Taube, Carl; Rupp, Agnes; Goldman, Howard H.

Gordon, Robert J.

PD November 1986. **TI** Productivity, Wages, and Prices Inside and Outside of Manufacturing in the United States, Japan, and Europe. **AA** Northwestern University. **SR** National Bureau of Economic Research Working Paper: 2070; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 60. **PR** $2.00. **JE** 226, 227, 824, 122. **KW** United States. Japan. Europe. Productivity. Wages. Prices.

AB This paper studies the dynamic behavior of changes in productivity, wages, and prices. Results are based on a new data set that allows a consistent analysis of the aggregate economy, the manufacturing sector, and the nonmanufacturing sector. Results are presented for the United States, Japan, and an aggregate called "Europe" consisting of eleven European economies. The primary theme of the paper is that differences between Europe and the United States have been substantially exaggerated in recent work. Europe has neither greater nominal wage flexibility nor more rigid real wages than the United States. Evidence that the United States exhibits more nominal rigidity is confined to manufacturing, while the United States aggregate and nonmanufacturing sectors display as much nominal wage flexibility as Europe, and similar "output sacrifice ratios" as well. These results undermine the case frequently made against demand expansion in Europe on the ground that such a demand expansion would cause only extra inflation with no bonus of extra output as a result of a uniquely vertical European aggregate supply curve. The analysis of real wages also yields new results. A consistent treatment of the income of the self-employed almost completely eliminates the secular uptrend in previously developed wage gap indexes for Japan and Europe between the 1960s and 1980s. If anything real wages in Europe and Japan were too flexible rather than too rigid, in the sense that much of the increase in wage gap indexes in Europe during 1968-70 and in Japan in 1973-74 can be interpreted as autonomous wage push. The component of increases in wage gap indexes to be attributed to a failure of real wages to respond to the post-1972 productivity growth slowdown is relatively minor. The paper's analysis of productivity change confirms the real-wage elasticity of labor input emphasised previously, but shows that the response of productivity to changes in the real wage, and to cyclical output fluctuations, is roughly the same the United States, Japan, and Europe. The cyclical analysis allows an estimate of trend productivity growth, revealing interesting differences between the manufacturing and nonmanufacturing sectors in the three economies.

Gourieroux, C.

PD June 1986. **TI** Kullback Causality Measures. **AU** Gourieroux, C.; Monfort, A.; Renault, E. **AA** Gourieroux: CEPREMAP. Monfort: INSEE. Renault: Universite Paris IX. **SR** Unite de Recherche

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Document de Travail ENSAE/INSEE: 8612; INSEE, Unite de Recherche, 18 Bd. Adolphe Pinard, 75675 Paris cedex 14, France. **PG** 46. **PR** No Charge. **JE** 211, 213. **KW** Causality. Kullback Information Criterion. Estimation. Test.

AB In this paper we propose causality measures based on the Kullback Information Criterion. These causality measures are applicable in a general context which contains, as special cases, the stationary autoregressive case, considered by Geweke, and qualitative models. Estimators of these measures and test procedures are proposed. The nesting of the hypotheses and the asymptotic independence of the test statistics are carefully studied.

Greenwood, Jeremy

PD June 1986. **TI** Foreign Exchange Controls in a Black Market Economy. **AU** Greenwood, Jeremy; Kimbrough, Kent P. **AA** Greenwood: University of Western Ontario. Kimbrough: Duke University. **SR** University of Western Ontario Department of Economics Research Report: 8607; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, Canada N6A 5C2. **PG** 25. **PR** No Charge. **JE** 431, 421, 422, 021, 122. **KW** Foreign Exchange Controls. Black Market Economy. Choice Theoretic Model. Cash-In-Advance Model. Trade Balance.

AB An investigation of the impact of foreign exchange controls in a black market economy is undertaken within the context of a choice-theoretic cash-in-advance general equilibrium model. While such controls may improve a 'distortion-free' economy's trade balance and balance of payments they are found to increase the domestic price of imports and lower the country's welfare. The ramifications of black market for economic welfare turn out to be ambiguous, depending crucially on the government's reaction to the leakage of foreign exchange into the economy via illegal activity.

PD August 1986. **TI** An Investigation In The Theory Of Foreign Exchange Controls. **AU** Greenwood, Jeremy; Kimbrough, Kent P. **AA** Greenwood: University of Western Ontario. Kimbrough: Duke University. **SR** University of Western Ontario Department of Economics Research Report: 8611; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, Canada N6A 5C2. **PG** 30. **PR** No Charge. **JE** 431, 421, 422. **KW** Foreign Exchange Controls. Cash-In-Advance Model. Trade Balance. Balance of Payments. Exchange Rates.

AB A choice-Theoretic cash-in-advance model is constructed to examine foreign exchange controls. While foreign exchange controls improve the trade balance and the balance of payments (or exchange rate) they reduce welfare for a distortion-free small open economy. This is because foreign exchange controls essentially place a quota on imports. Shocks to the terms of trade are shown to be transmitted negatively to the domestic economy when exchange controls are in effect. Devaluations are found not to have real effects. Finally, it is argued that foreign exchange controls are not the optimal policy for attaining trade balance objectives.

Gregory, Allan W.

TI Risk Premiums in the Term Structure: Evidence from Artificial Economies. **AU** Backus, David K.; Gregory, Allan W.; Zin, Stanley E.

Gretlein, Rodney

PD August 1986. **TI** To Fight or Not to Fight: That is the Question. **AU** Gretlein, Rodney; Hamilton, Jonathan; Slutsky, Steven. **AA** Gretlein: Rutgers University. Hamilton and Slutsky: University of Florida. **SR** Universite Catholique de Louvain CORE Discussion Paper: 8625; Centre for Operations Research and Econometrics, Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 48. **PR** No Charge. **JE** 026, 022. **KW** Conflict. Game. Bargaining. Private Information. Commitment.

AB Models with private information held by one side have been used to describe the occurrence of Pareto-inefficient conflicts such as wars, strikes and civil trials. Here a game with private information held by both sides is analyzed. Two sides must agree to divide a fixed surplus or engage in a conflict to enforce their demands. The private information is that each side knows which one of two relative strength levels it will have in the potential conflict. The Nash equilibrium solution to the game is presented for all possible values of the parameters - the size of the surplus, its no-conflict division, the costs of fighting and each side's probabilities of being strong or weak. The qualitative properties of the equilibria are described and compared to outcomes in models of one-sided private information. Comparative statics results for local and global changes in the parameters are presented. Finally, it is shown how this model can be embedded in a multi-stage conflict game with bargaining, information transmission and different commitment structures.

Griliches, Zvi

PD November 1986. **TI** The Value of Patents as Indicators of Inventive Activity. **AU** Griliches, Zvi; Pakes, Ariel; Hall, Bronwyn H. **AA** Griliches: Harvard University. Pakes: University of Wisconsin. Hall: National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2083; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 621, 514, 522. **KW** Innovation. Patents. Invention. Technology. Research and Development. Stock Market.

AB This paper summarizes a number of studies which use patent data to examine different aspects of technological change. It describes our firm level data set construction effort; reports on the relationship between R&D expenditures and the level of patenting; analyzes the relationship between patents, R&D, and the stock market value of firms; reports on the estimation of the value of patent rights based on European patent renewal data; and describes the use of patent data to estimate the importance of R&D spillovers. It concludes that patent data represent a valuable resource for the analysis of technological change. They can be used to study longer-run interfirm differences in inventive activity and as a substitute for R&D data where they are not available in the desired detail. It is possible also to use a firm's distribution of

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patenting by field to infer its position in "technological space" and use it in turn to study how R&D spills over from one firm to another. Moreover, patent renewal data, which are also becoming available in the United States, allow one to construct more relevant "quality weighted" inventive "output" measures.

Gronau, Reuben

PD June 1986. **TI** The Intrafamily Allocation of Goods -- How to Separate the Men from the Boys? **AA** Hebrew University. **SR** National Bureau of Economic Research Working Paper: 1956; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 921, 851, 910. **KW** Intrafamily Allocation of Goods. Family. Household Economics. Expenditure Survey.

AB The paper integrates the basic principles of consumption theory and the economics of human resources to generate a powerful method for estimating the distribution of consumption between parents and children. Invoking the assumption of separability between parents' and children's consumption and the corresponding assumption of two-stage budgeting, it is shown that one can estimate the parents' share in total consumption by analyzing the effect of demographic changes on the consumption of adult goods (i.e., goods consumed exclusively by parents). Using the United States 1972/73 Consumption Expenditure Survey it is found that white married families tend to allocate about three-quarters of their consumption to parents and one quarter to children. The children's share of consumption in black families does not fall short of those in white families, and the share in white families where the father is absent is even higher. The share increases with the number of children, but the absolute level of consumption per child declines. These findings are quite robust to changes in functional form and data-base.

Grossman, Herschel I.

TI Rational Inflationary Bubbles. **AU** Diba, Behzad T.; Grossman, Herschel I.

TI Market Fundamentals, Rational Bubbles, and the Stationary Properties of Stock Prices. **AU** Diba, Behzad; Grossman, Herschel I.

Grossman, Michael

TI Beer Taxes, The Legal Drinking Age, and Youth Motor Vehicle Fatalities. **AU** Saffer, Henry; Grossman, Michael.

Gustman, Alan

PD May 1985. **TI** A Model For Analyzing Youth Labor Market Policies. **AU** Gustman, Alan L.; Steinmeier, Thomas L. **AA** Gustman: Department of Economics, Dartmouth College. Steinmeier: Department of Economics, Texas Tech University. **SR** National Bureau of Economic Research Working Paper: 1621; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 27. **PR** $2.00. **JE** 820, 811, 813, 851. **KW** Youth. Labor Market Policies. Minimum Wage. Unemployment. Training. Skilled Jobs. Subsidies.

AB This paper formulates a model of the youth labor market. At the heart of the model is a minimum wage restriction which causes some youths to become unemployed and prevents others from training. Labor is assumed to be heterogeneous in performance on skilled jobs, and is less productive as youths than as adults simply because of immaturity. The model is applied to analyze the effects of three representative policies: a youth subminimum wage, subsidies paid to firms that hire youths, and training subsidies that offset the costs of on-the-job training.

PD October 1986. **TI** Wages, Employment, Training and Job Attachment in Low Wage Labor Markets for Women. **AU** Gustman, Alan; Steinmeier, Thomas L. **AA** Gustman: Dartmouth College. Steinmeier: Texas Tech University. **SR** National Bureau of Economic Research Working Paper: 2037; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 811, 813, 824. **KW** Wages. Employment. Training. Labor Markets. Women.

AB This paper analyzes economic behavior and the effects of training and income support policies in the low wage labor market for women. The opportunity set takes account of nonlinearities and discontinuities associated with career interruption, part-time work, and government programs. There are two sectors, one which rewards training and individual ability, the other which does not and offers only the minimum wage. Effects of policies are found to vary importantly among heterogeneous groups of women according to ability and taste for children and household work. Some preliminary empirical evidence is presented to narrow the choice of specification.

PD October 1986. **TI** Pensions, Unions and Implicit Contracts. **AU** Gustman, Alan; Steinmeier, Thomas L. **AA** Gustman: Dartmouth College. Steinmeier: Texas Tech University. **SR** National Bureau of Economic Research Working Paper: 2036; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 830. **KW** Pensions. Unions. Implicit Contracts.

AB This paper analyses the relation of pension coverage and key plan characteristics to measures of union membership and strength, and to related interactions. The large and significant relationships which are found cannot be explained by, and are often inconsistent with, predictions obtained by extending the major explanations for the existence of pensions to allow for union monopoly effects. The findings support some (but not other) explanations in which the impetus for pensions arises more directly from the behavior of unions, and suggest that behavioral and related policy analyses of pensions should be conducted separately for the union and nonunion sectors.

Gyourko, Joseph

PD October 1986. **TI** The Importance of Local Fiscal Conditions in Analyzing Local Labor Markets. **AU** Gyourko, Joseph; Tracy, Joseph. **AA** Gyourko: University of Pennsylvania. Tracy: Yale University. **SR** National Bureau of Economic Research Working Paper: 2040; National Bureau of Economic Research, 1050

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Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 941, 824. **KW** Compensating Wage Differential Model. Local Tax Rates.

AB A new test of the compensating wage differential model is proposed. The logic behind Roback's model showing how differences in nonproduced amenities may be reflected in intercity wage differentials is extended to the case of differences in local fiscal conditions, represented by tax rates and publicly produced services. Results show that differences in local tax rates and services provisions do generate compensating wage differentials across cities. The effects of a particularly large set of taxes and effective services output measures are examined.

Hahm, Sangmoon

PD September 5, 1986. **TI** Information Acquisition in an Incomplete Information Model of Business Cycle. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Paper in Economics: E86-09-01; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 27. **PR** No Charge. **JE** 311, 023, 131. **KW** Information. Business Cycle. Monetary Policy. Output-Inflation Tradeoff.

AB This paper studies the consequences of allowing information acquisition in a version of the Lucas-Barro incomplete information model of business cycles. Earlier models arbitrarily posited the information available to each agent. We apply the information equilibrium concept to show that an agent's information acquisition is not invariant to fluctuations of price level. We also show that this information acquisition has a significant effect on the size of output-inflation tradeoff. We use two optimality criteria, developed by Muench (1977), in order to evaluate various monetary policies. We find that a change in mean money growth rate does not have any real consequences. We also find that, regardless of the criterion used, a constant money growth rule is superior to any monetary policy that induces all the agents to be fully informed; according to the stronger criterion, it is superior to any monetary policy that induces at least some agents to be better informed.

Hall, Brian

TI Permanent Homelessness in America? **AU** Freeman, Richard B.; Hall, Brian.

Hall, Bronwyn H.

TI The Value of Patents as Indicators of Inventive Activity. **AU** Griliches, Zvi; Pakes, Ariel; Hall, Bronwyn H.

Hall, Robert E.

PD June 1986. **TI** The Relation Between Price and Marginal Cost in United States Industry. **AA** Stanford University. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-24; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 50. **PR** No Charge. **JE** 227, 630, 824. **KW** Price. Marginal Cost. United States. Industry. Labor Inputs.

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.

PD June 1986. **TI** Intertemporal Substitution in Consumption. **AA** Stanford University. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-25; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 41. **PR** No Charge. **JE** 921, 122, 023. **KW** Intertemporal Substitution. Interest Rate. Elasticity.

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 State shows no strong evidence that the elasticity of intertemporal substitution is positive. Earlier findings of substantially positive elasticities are reversed when appropriate estimation methods are used.

Haller, Hans

PD October 1985. **TI** Non-Market Reopening, Time-Consistent Plans, and the Structure of Intertemporal Preferences Under Uncertainty. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-28; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 26. **PR** No Charge. **JE** 021, 022, 026. **KW** Arrow-Debreu Model. Uncertainty. Recontracting. Intertemporal Preferences. Time Consistency.

AB For the Arrow-Debreu model of pure exchange under uncertainty, those consumers are characterized who never recontract in any situation.

Haltiwanger, John

PD May 1985. **TI** Inventories, Multiperiod Contracts and the Dynamic Behavior of the Firm Under Uncertainty. **AU** Haltiwanger, John; Maccini, Louis. **AA** Haltiwanger: University of California. Los Angeles. Maccini: Johns Hopkins University. **SR** Johns Hopkins Department of Political Economy Working Paper: 153; Department of Political Economy, Johns Hopkins University, Baltimore, MA 21218. **PG** 43. **PR** No Charge. **JE** 022, 026, 511, 611. **KW** Inventories. Multiperiod Contracts. Firm Behavior Under Uncertainty.

AB This paper develops an intertemporal model of a firm that makes price, output, inventory and labor input decisions under uncertainty. The key features of the model are that the firm holds inventories to satisfy buffer stock motives and it engages in implicit multiperiod contracts with its workers that govern both temporary and permanent adjustments of the workforce. Our purpose is to explore the interaction of the firm's decisions in

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responding to cyclical fluctuations in demand and changes in costs.

TI Limited Countercyclical Policies: An Exploratory Study. **AU** Becketti, Sean; Haltiwanger, John C.

Hamermesh, Daniel S.

PD October 1986. **TI** The Demand for Workers and Hours and the Effects of Job Security Policies: Theory and Evidence. **AA** Michigan State University. **SR** National Bureau of Economic Research Working Paper: 2056; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 824. **KW** Worker-Hours Substitution. Labor Demand Adjustment.

AB There has been a wide variety of research on worker-hours substitution and the effects of various costs on the speed and extent to which labor demand adjusts. Much of this literature, though, confuses various types of fixed costs and fails to provide a guide for identifying how changes in labor-cost structures affect static relative demands for workers and hours and the paths by which they adjust. This study presents a typology of labor cost structures and examines how they affect these and other aspects of labor demand. Some of the many recently adopted changes in labor-market policies in OECD countries are pigeonholed by their effects on labor costs. A review of the evidence indicates clearly that there is some slight substitution between workers and hours along a constant effective-labor isoquant. The evidence is clear that employers adjust the demand for hours more rapidly than that for workers, and that both adjust fairly rapidly. It also shows that a major effect of cost-increasing policies designed to induce substitution from hours to workers is a reduction in the total amount of worker-hours demanded. Original analysis demonstrates that lags in the adjustment of employment in response to changes in demand lengthened in most OECD countries during the 1970s.

Hamilton, Bruce W.

PD April 1986. **TI** Determinants and Consequences of the Private-Public School Choice. **AU** Hamilton, Bruce W.; Macauley, Molly K. **AA** Hamilton: Johns Hopkins University. Macauley: Resources for the Future. **SR** Johns Hopkins Department of Political Economy Working Paper: 170; Department of Political Economy, Johns Hopkins University, Baltimore, MD 21218. **PG** 15. **PR** No Charge. **JE** 912. **KW** Private-Public School Choice. Education.

AB This paper explores the choice between the use of public and private schools. We show that it is possible to learn a great deal about both the demand for, and the technology involved in producing education by studying this choice.

Hamilton, Jonathan

TI To Fight or Not to Fight: That is the Question. **AU** Gretlein, Rodney; Hamilton, Jonathan; Slutsky, Steven.

Hamlin, Alan P.

PD December 1986. **TI** The Normative Status of Consumer Sovereignty. **AA** University of Southampton. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 8620; Department of Economics, University of Southampton, Southampton 509 5NH, England. **PG** 34. **PR** No Charge. **JE** 024, 921. **KW** Consumer Sovereignty.

AB The plan of this paper is first to provide an overview of alternative interpretations of consumer sovereignty and the major lines of argument deployed; a number of these arguments will then be considered in rather greater detail before any attempt is made to draw conclusions. I do not intend to provide a detailed survey of the literature, nor do I claim comprehensive coverage of the arguments; but I do hope to provide an overview of the major issues, a flavour of the more detailed debate, and a tentative evaluation of the resilience of the principle of consumer sovereignty in the face of the various lines of criticism from within.

Hardle, Wolfgang

PD November 1986. **TI** Resistant Smoothing Using the Fast Fourier Transform. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-85; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 15. **PR** No Charge. **JE** 211, 213, 214. **KW** Kernel Regression Estimation. Resistant Smoothing. Fast Fourier Transform. Computer Program.

AB Describes how to accomplish resistant smoothing using a fast fourier transform and presents an algorithm.

Hargraves, Monica

PD September 1986. **TI** Information Production, Evaluation Risk, and Optimal Contracts. **AU** Hargraves, Monica; Romer, Paul M. **AA** University of Rochester. **SR** University of Rochester Center for Economic Research Working Paper: 59; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 49. **PR** No Charge. **JE** 022, 516, 026, 511, 514. **KW** Managerial Compensation. Optimal Contracts. Information Transfer. Investment.

AB In the model considered here, a firm can evaluate an investment project before making a commitment to fund it, acquiring private information about the random project return. This context is used to show how incentive schemes designed to induce the transmission of information may conflict with schemes designed to induce effort. Two types of arrangements that allow investments in information to earn a competitive return are identified: (1) a contract that induces a divergence between the interests of managers and owners and (2) a policy of partial internal funding for new projects. In each case, the key to credibly transmitting information is to shift the risk associated with an evaluation away from the individual charged with revealing the results. The formal model is used to interpret features of compensation and the securities issuance process.

Harrington, Joseph E. Jr

PD July 1986. **TI** Cooperation Under Free Entry. **AA** Johns Hopkins University. **SR** Johns Hopkins Department of Political Economy Working Paper: 177; Department of Political Economy, Johns Hopkins University, Baltimore MD 21218. **PG** 18. **PR** No

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Charge. **JE** 026, 022, 611. **KW** Free-Entry Subgame Perfect Equilibrium. Cooperation. Free Entry.

AB This paper investigates the degree of cooperation that can be sustained under free entry. A Free-Entry Subgame Perfect Equilibrium (FESPE) is defined by (q,n), where q is the cooperative output rate and n is the number of active firms, such that there is no incentive for an active firm to deviate output from q and there is no incentive for a potential entrant to enter the industry. It is shown that for all n => 1, if the discount factor is sufficiently high there then exists a FESPE in which q is strictly less than the Cournot-Nash output rate. Thus, we conclude that cooperation can indeed be sustained under free entry.

Hart, Oliver

PD January 1985. **TI** Incomplete Contracts and Renegotiation. **AU** Hart, Oliver; Moore, John. **AA** London School of Economics. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 367; Department of Economics, MIT, Cambridge, MA 02139. **PG** 61. **PR** No Charge. **JE** 026, 022, 511. **KW** Incomplete Contracts. Renegotiation.

AB A major problem facing the drafters of a contract is to anticipate and deal appropriately with the many contingencies which may arise during the course of what may be a very long relationship (in the coal industry, some contracts involving coal mines and electricity generating plants last more than thirty years; see Joskow (1984)). In fact, since it does not pay to plan for every conceivable eventuality, contracts will typically contain large gaps. In this paper, we have considered how these gaps might be filled in during the course of the trading relationship. We have studied a situation where the gaps are due to the inability of the parties ex-ante to describe the objective events which will ex-post determine the state of the world (another interpretation is that the parties are initially unaware of the relationship between these events and the state). The parties can make up for this to some extent by building into the contract a mechanism for revising the terms of trade as each party receives information about benefits and costs. We have studied the design of an optimal mechanism of this type under two different assumptions about the communication mechanism at the parties' disposal.

PD May 1986. **TI** "Bargaining and Strikes". **AA** Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 423; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 47. **PR** No Charge. **JE** 832, 831, 833, 026. **KW** Bargaining. Strikes. Asymmetric Information. Firm Profitability.

AB A recent literature has shown that asymmetric information about a firm's profitability does not by itself explain strikes of substantial length if the firm and workers can bargain very frequently without commitment. In this paper we show that substantial strikes are possible if (a) there is a small (but not insignificant) delay between offers; and (b) a strike-bound firm may experience a decline in profitability, with the probability of decline increasing with the length of the strike. A brief discussion of the ability of the theory to explain the data on strikes is included.

Harvey, Andrew

PD November 1986. **TI** Structural Time Series Models in Inventory Control. **AU** Harvey, Andrew; Snyder, Ralph D. **AA** Harvey: London School of Economics. Snyder: Monash University. **SR** Monash Department of Econometrics and Operations Research Working Paper: 17/86; Department of Econometrics and Operations Research, Monash University, Clayton, Victoria 3168, AUSTRALIA. **PG** 21. **PR** No Charge. **JE** 213, 510. **KW** Forecasting. Time Series Analysis. Inventory Control. Kalman Filtering. Exponential Smoothing.

AB Exponential smoothing methods are often used to forecast demand in computerized inventory control systems. These methods, by themselves, are rather ad hoc, but they can be given a proper statistical foundation by setting up a class of structural time series models. The purpose of the paper is to highlight the potential role of these models in inventory control. In particular they are used as the basis for deriving formulae for estimating the mean and variance of the lead time demand distribution under both constant and stochastic lead time assumptions.

Harvey, Mark O.

PD July 1986. **TI** The Report of the Inter-State Commission on the Tasmanian Freight Equalisation Scheme: An Exercise in the Theory of Second Best. **AA** Department of Economics, University of Queensland. **SR** Australian National University Centre for Federal Financial Relations Occasional Paper: 40; Centre for Federal Financial Relations, Copland Building, Australian National University, G.P.O. Box 4, Canberra, A.C.T. 2601, Australia. **PG** 30. **PR** No Charge. **JE** 615. **KW** Subsidies. Transport. Shipping. Cabotage. Freight Rates. Economic Efficiency. Industrial Location. Second Best Theory Application.

AB In 1976, the Federal Government implemented a subsidy scheme for the transport of goods shipped across Bass Strait, between Tasmania and mainland Australia. It was called the Tasmanian Freight Equalisation Scheme. The subsidy rates were set so as to equalise door-to-door freight charges between Tasmanian and mainland ports with those on designated "comparable mainland routes". Subsequent changes in mainland freight rates meant that a recalculation produced unacceptably large variations in subsidy rates. The scheme was therefore referred to the newly re-established Inter-State Commission to investigate and recommend changes "in the interests of economic efficiency and equity". The Commission found the subsidisation of Bass Strait cargoes to be justified from the point of view of economic efficiency on grounds of the theory of second best. A subsidy would correct the distortions in resource allocation caused by the policy of cabotage which raises coastal shipping costs and reduces the level of contestability of Bass Strait shipping, by the subsidisation of mainland rail transport and by the Government's ship importation policy. This paper critically examines each of these justifications and agrees with all but the last one. Models are developed showing how the policy of cabotage raises coastal shipping costs and how the subsidisation of rail transport on the

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mainland distorts the location of industrial activity, biasing it away from Tasmania. It is shown that a subsidy for goods crossing Bass Strait would redress this bias and improve welfare. A mathematical expression is derived for the second best optimum subsidy for one source of supply to a market where other sources of supply to the market are subsidised. The Commission's justifications based on equity and the alternative subsidy scheme devised by it are also critically discussed.

Hausman, Jerry A.

PD January 1985. **TI** Efficient Estimation and Identification of Simultaneous Equation Models With Covariance Restrictions. **AU** Hausman, Jerry A.; Newey, Whitney; Taylor, William. **AA** Hausman: Massachusetts Institute of Technology. Newey: Princeton. Taylor: ATT. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 369; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 59. **PR** No Charge. **JE** 211. **KW** Estimation Techniques. Simultaneous Equation Models. Covariance Restrictions. Augmented Three Stage Least Squares.

AB A slight variation on the instrumental variables theme yields a useful alternative to FIML. Madansky (1964) gave an instrumental variable interpretation to 3SLS and here we augment the 3SLS estimator by additional equations which the covariance restrictions imply. That is, a zero covariance restriction means that a pair of disturbances is uncorrelated, and therefore that the product of the corresponding residuals can itself be used in estimation as the residual of an additional equation. These additional equations are nonlinear in the parameters but can be linearized at an initial consistent estimator, and then 3SLS performed on the augmented equation system. This estimator, which we call augmented three stage least squares (A3SLS), is shown to be more efficient than the 3SLS estimator when effective covariance restrictions are present. We also consider convenient methods of using the extra equations which are implied by the covariance restrictions to form an initial consistent estimator when the covariance restrictions are necessary for identification.

Hay, Joel W.

TI The Rand Health Insurance Study: A Critique. **AU** Welch, Bruce L.; Hay, Joel W.; Miller, Daniel S.; Olsen, Randall J.; Rippey, Robert M.; Welch, Annemarie S.

Hellwig, Martin

PD October 1986. **TI** Some Recent Developments in the Theory of Competition in Markets With Adverse Selection. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-82; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, Deutschland. **PG** 11. **PR** No Charge. **JE** 026, 611, 022. **KW** Game Theory. Insurance Markets. Incomplete Information. Sorting Device.

AB The discussion shows that three different game theoretic formalizations lead to three different predictions of how a competitive market with adverse selection will work. In the two-stage game of Rothschild, Stiglitz, and Wilson, a pure-strategy sequential equilibrium fails to exist if the proportion of "good" types in the population is large. In the same situation, an analysis based on the three-stage game in which the uninformed agents move first predicts the emergence of the optimal pooling contract, whereas the optimal separating contract constellation should emerge if the informed agents move first.

Helpman, Elhanan

TI Inflationary Consequences of Anticipated Macroeconomic Policies. **AU** Drazen, Allan; Helpman, Elhanan.

TI Stabilization with Exchange Rate Management. **AU** Drazen, Allan; Helpman, Elhanan.

Hendershott, Patric H.

PD April 1986. **TI** Tax Changes and Capital Allocation in the 1980s. **AA** The Ohio State University. **SR** National Bureau of Economic Research Working Paper: 1911; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 52. **PR** $2.00. **JE** 323, 522, 932, 132, 134. **KW** Taxes. Capital Allocation. Inflation. Interest Rates. Costs of Capital. Rental. Homeownership.

AB The paper begins with presentation of a methodology for computing rental costs of capital under any tax regime. Tax law over the 1980-84 period is specified and the provisions of the Treasury and Administration tax reform proposals and HR 3838 are described. A model is then constructed to allow calculation of the impact of changes in tax regimes and/or expected inflation on interest rates and the allocation of real capital. The model allocates a fixed private capital stock among various classes of nonresidential and residential capital, depending upon the rental costs for the capital components, the price elasticities of demand with respect to the rental costs, and the elasticities of homeownership with respect to the cost of owning versus renting. The interest rate adjusts in response to tax/inflation changes so as to maintain the aggregate demand for capital at this initial level. The model is employed to deduce the efficiency of the allocation of real capital under various tax regimes at different inflation rates.

PD June 1986. **TI** Mortgage Pricing: What Have We Learned So Far? **AA** The Ohio State University. **SR** National Bureau of Economic Research Working Paper: 1959; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 932, 315. **KW** Mortgage Pricing. Interest Rate Term Structure. House Price Process. Mortgage Default Option.

AB Much progress has been achieved in the valuation of call options and interest-rate caps on default-free mortgages. The evidence suggests that the observed term structure of interest rates (the full structure, not just the end points) and a reasonable estimate of the volatility of spot rates is sufficient for pricing purposes. Knowledge of the precise nature of the interest-rate process and the exact market price of interest-rate risk, the not-well-identified determinants of the term structure, are not necessary for pricing. (The analogy to pricing stock options is striking; there, knowledge of the observed stock price -- and the

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present value of expected future dividends -- and a reasonable estimate of the volatility of the stock price are sufficient to price the option.) Moreover, the number of interest-rate state variables is also of little import, again holding the term structure and rate volatility constant. Pricing the mortgage default option, in contrast, is still in the embryonic stage. The stochastic process analogous to the interest-rate process in valuing call is a house price process: if a house price declines sufficiently, default occurs. The observed house price, the present value of expected future "dividends" (rents), and the volatility of house prices is, in principle, sufficient to value default (again note the analogy to stock price options). Unfortunately, rents are unknown, and no observable term-structure of expected future house-price inflation-rates exists from which to glean the division of expected housing returns between "dividends" and expected capital gains. Also, a series on the recent volatility of individual house prices is not readily available. Finally, measurement of the costs to defaulters and the losses of lenders/insurers when default occurs is far less straight-forward than is the case when call occurs or interest-rate caps are reached. (Here, an analogy can be drawn to the difficulties encountered in pricing the bankruptcy risk of firms.).

Hess, Gregory D.

PD July 1986. **TI** The Time Inconsistency Problem? -- Why Monetary and Fiscal Policy May Move in Opposite Directions. **AA** The Johns Hopkins University. **SR** Johns Hopkins Department of Political Economy Working Paper: 176; Department of Political Economy, Johns Hopkins University, Baltimore MD 21218. **PG** 19. **PR** No Charge. **JE** 023, 026, 311, 321. **KW** Time Inconsistency. Monetary Policy. Fiscal Policy. Game Theoretic Macroeconomics.

AB Our paper extends the work of Barro and Gordon, by characterising a simple macro-economy within a framework of three actors: the Public, the Government (i.e., the fiscal authority) and the Fed (i.e., the monetary authority). We construct a game whereby the Government can credibly punish the Fed for defecting from the cooperative (Pareto optimal) solution by playing a very restrictive fiscal policy. In doing so, the author hopes to lend support to Taylor's criticism of time inconsistency -- namely that society often formulates implicit punishments to help enforce the optimal (though time inconsistent) policy.

Hildenbrand, Werner

PD January 1986. **TI** The Core of an Economy. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-39; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, Deutschland. **PG** 14. **PR** No Charge. **JE** 021. **KW** Exchange Economies. Coalition. Core. Equilibrium. Replica Economies. Type Economies.

AB The core of an economy consists of those states of the economy which no group of agents can "improve upon". A group of agents can improve upon a state of the economy if, by using the means available to that group, each member can be made better off. Nothing is said in this definition of how a state in the core actually is reached. The actual process of economic transactions is not considered explicitly.

Howitt, Peter

PD July 1986. **TI** Gradual Reforms Of Capital Income Taxation. **AU** Howitt, Peter; Sinn, Hans Werner. **AA** Howitt: University of Western Ontario. Sinn: Ludwig-Maximilians-Universitat. **SR** University of Western Ontario Department of Economics Research Report: 8609; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, Canada N6A 5C2. **PG** 42. **PR** No Charge. **JE** 323, 021. **KW** Capital Income Taxation. Taxes. Tax Reform. Dividend Tax. Meade Committee.

AB After a period of intensive study of optimal indirect taxation, there has been a renewed interest in recent years in the problem of optimal direct taxation, with particular emphasis on capital income taxation. A number of authors and tax committees have made proposals to replace the current form of taxation by various forms of cash-flow taxation, and there is an ongoing debate on the problem of double taxation of dividends. The basic tasks of this paper are to extend the Nickel-Sandmo type of partial analytic result to other taxes and to identify the economy's reactions to anticipated tax rate changes. This second part of the analysis will be carried out in a perfect foresight general equilibrium model of economic growth that allows for a welfare evaluation of the taxes to be considered.

Hubbard, R. Glenn

TI Business Cycles and Oligopoly Supergames: Some Empirical Evidence on Prices and Margins. **AU** Domowitz, Ian; Hubbard, R. Glenn; Peterson, Bruce C.

TI Growing in Debt: The 'Farm Crisis' and Public Policy. **AU** Calomiris, Charles W.; Hubbard, R. Glenn; Stock, James H.

Huberman, Gur

TI Two-Sided Uncertainty and "Up-or-Out" Contracts. **AU** Kahn, Charles; Huberman, Gur.

Hui, Weng Tat

PD September 8, 1986. **TI** Modelling Multiple Unemployment Spells. **AA** National University of Singapore. **SR** Australian National University Working Paper In Economics and Econometrics: 135; Department of Economics, Australian National University, P.O. Box 4, Canberra A.C.T. 2601, Australia. **PR** No Charge. **JE** 211, 824. **KW** Counting Processes. Poisson-Weibull Process. Duration Dependence. Occurrence Dependence. Heterogeneity.

AB In this paper we introduce the counting process approach to the modelling of occurrence of employment events. The work reported here represent the first serious application of these methods to labour market data. The relationship between the stochastic process approach and the more conventional survival analysis concepts are explored. Various specifications of fixed effects and random effects model of the Weibull process are estimated using Australian longitudinal data. The results point to

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the importance of positive occurrence dependence in determining the current and future durations of unemployment spells. The models that are estimated also provide information concerning the nature of duration dependence in unemployment.

Inkeles, Alex

PD July 1986. **TI** Rethinking Social Welfare: U.S. and U.S.S.R. in Comparative Perspective. **AA** Stanford University. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-34; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 122. **PR** No Charge. **JE** 911, 225, 123. **KW** Social Welfare Programs. Welfare Measurement. Soviet Union.

AB This essay leads from a systematic comparison of social welfare programs in the United States and the Union of Soviet Socialist Republics into an examination of more general issues concerning the conceptualization of social welfare and its measurement. The frequent designation of the United States as a "welfare-state laggard" results from statistical conventions about measuring welfare expenditures rather than resting on a broad conception of the array of goods and services which actually determine individual welfare. Thus, we find that the International Labor Organization considers only expenditures by government or those mandated by law. Consequently, programs entered into voluntarily by employers and employees, and those based on an association of common interest, are not weighed in the I.L.O. tabulations. Many of the common international accounting schemes also quite arbitrarily exclude education from the category of social welfare programs while including health expenditures. This also contributes to underestimation of United States public involvement in welfare, since the United States is a leader in expenditures for public education. Against this background a comparison of social welfare programs in the United States and the U.S.S.R. reveals that they differ in certain important respects, although the range of coverage is broadly similar in the two countries. Thus, the Soviet Union does not provide unemployment insurance, but the United States has no general national program of family supports. When the indicator of "effort" is the proportion of Gross National Product spent and the conventions of the I.L.O. are followed, then the national effort for social welfare in the United States is notably, and for many surprisingly, at least as great as in the U.S.S.R. Going beyond those conventions actually puts the United States considerably ahead of the U.S.S.R. in a number of realms, most notably in total health expenditures as a percent of GNP. Following still broader conceptions of welfare, the package of goods and services provided the typical Soviet citizen from public and private sources combined, appears to be valued at only 1/3 that available to the typical United States citizen. Both nations continue to have significant proportions of their populations below their self-defined "official" poverty lines, although the Soviet situation is evidently more serious. The experience of this review indicates that it would be intellectually rewarding, and very useful as a guide to policy setting, to pursue this type of comparison more systematically in relation not only to the U.S.S.R. but to other combination of nations.

Ito, Takatoshi

PD October 1986. **TI** The Intra-Daily Exchange Rate Dynamics and Monetary Policies After the G5 Agreement. **AA** National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2048; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 431. **KW** G-5 Agreement. Yen Appreciation. Coordinated Intervention.

AB This paper investigates determinants of yen appreciation from the G5 agreement of September 1985 to the end of May, 1986. During that period, four waves of appreciation separated by calm periods are identified. For each wave and calm period, the changes in the yen/dollar exchange rate are decomposed in those taken place in the Tokyo, Europe and New York markets. In addition, correlations among the yen, mark, and pound for each market for each wave are studied. The surprisingly strong effect of the G5 agreement on the exchange rate was due to the signaled United States policy change. The role of direct intervention by the Bank of Japan was rather limited at that point. The Bank of Japan adopted the "high interest policy" in October 1985. By narrowing the interest rate gap between Japan and the United States, the Bank of Japan successfully led to another round of appreciation. A major cause of the third wave of yen appreciation starting January 24, 1986 was the decline in oil prices. After the third wave was over, the Bank of Japan started intervening the market in support of the dollar -- a reversal of direction. However, the effort was not successful to stop another round of yen appreciation. The fourth wave of appreciation in the middle of April was due to a mix of prospects of reducing the United States federal deficits and a further decline in oil prices. These findings are consistent with a view that the exchange rates respond mainly to news of fundamentals and that the exchange rates are not manageable by coordinated interventions alone.

Jackson, Matthew O.

TI Optimal Innovation of Futures Contracts. **AU** Duffie, Darrell; Jackson, Matthew O.

Jacobsen, Joyce

TI Employee Response to Compulsory Short-Time Work. **AU** Fuchs, Victor; Jacobsen, Joyce.

Johnson, Robert A.

PD July 1986. **TI** Anticipated Fiscal Contraction: The Economic Consequences of the Announcement of Gramm-Rudman-Hollings. **AA** International Finance Division, Federal Reserve Board. **SR** Board of Governors of the Federal Reserve System International Finance Discussion Paper: 291; International Finance Division Board of Governors of the Federal Reserve System, Washington, D.C. 20551. **PG** 42. **PR** No Charge. **JE** 320, 431, 132. **KW** Fiscal Policy. Exchange Rates. Open Economy Macroeconomics. Expectations. Transmission Mechanisms.

AB The announcement of a plan to cut the United States federal budget deficit through the Gramm-Rudman-Hollings legislation provides an excellent opportunity to examine the influence of expectations on economic

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behavior. This paper presents a small forward-looking macroeconomic model and simulates the effects of the announcement of a multistaged reduction in the fiscal deficit. Open and closed economy specifications are compared and contrasted to highlight the importance of international transmission mechanisms in macroeconomic adjustment. The results of the simulations are compared with the stylized facts of the United States macroeconomy over the period surrounding the passage of the Gramm-Rudman-Hollings legislation.

Johnson, William R.

PD June 1986. **TI** Marginal Costs of Income Redistribution at the State Level. **AA** University of Virginia. **SR** National Bureau of Economic Research Working Paper: 1937; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 910, 941, 324, 323, 921. **KW** Income Redistribution. State Government.

AB Previous analyses of the cost of redistribution by a unitary government have focussed on the welfare losses of distorted labor supply choices. On the other hand, the analysis of redistribution by local governments in a federal system has emphasized the effect of the migration of taxpayers and transfer recipients in raising the cost (faced by state residents) of engaging in more redistribution. This paper combines both migration and labor supply effects to compute marginal redistribution costs at the state and federal level. Surprisingly, for a wide range of parameter values, states face lower redistribution costs than the national government because they are able to "export" some of the cost through lower federal tax revenue. The normative implication of the analysis is that any case for national redistribution policies must be based on benefit spillovers across state lines rather than on tax competition among state governments.

Jones, Stephen R. G.

PD August 1986. **TI** Reservation Wages And The Cost Of Unemployment. **AA** Department of Economics, University of British Columbia. **SR** University of British Columbia Department of Economics Discussion Paper: 86-30; Department of Economics, University of British Columbia #997-1873 East Mall, Vancouver, British Columbia CANADA V6T 1Y2. **PG** 31. **PR** $0.20 per page Canadian to other than educational institutions. **JE** 821, 824, 914. **KW** Reservation Wages. Unemployment. Jobs. Britain.

AB The paper studies direct evidence on reservation wages collected in Great Britain in 1982 to assess (i) whether such asking prices are "high" and (ii) whether variations in these reservation wages are related to differences in measures of the subjective and objective costs of unemployment. A majority overall (and for various sub-groups) report reservation wages no higher than own past wages adjusted for earnings growth, but there is nonetheless considerable dispersion in the ratio of reservation to past wages. This dispersion is weakly related to differential costs of unemployment for the sample as a whole, but this relationship breaks down for unemployed persons whose separation from last employment was involuntary. Together with an extreme paucity of job offers received, such a result casts doubt on the quantitative importance of high reservation wages as an explanation of unemployment.

Jonung, Lars

TI The Global Velocity Curve 1952-1982. **AU** Bordo, Michael D.; Jonung, Lars.

Jorgenson, Dale W.

PD July 1986. **TI** Bilateral Models of Production for Japanese and United States Industries. **AU** Jorgenson, Dale W.; Sakuramoto, Hikaru; Yoshioka, Kanji; Kuroda, Masashiro; Masashiro. **AA** Jorgenson: Harvard University. Sakuramoto, Yoshioka and Kuroda: Keio University. **SR** Harvard Institute for Economic Research Discussion Paper: 1253; Department of Economics, Littauer Center, Harvard University, Cambridge, MA 02138. **PG** 51. **PR** No Charge. **JE** 630, 122, 621. **KW** Japan. United States. Production. Bilateral Production Models. Technical Change. Industry.

AB The purpose of this paper is to present bilateral models of production for twenty-eight Japanese and United States industries for the period 1960-1979. These models determine the distribution of the value of output among capital, labor, and intermediate inputs in each country. They also determine rates of technical change for Japan and the United States and the difference between levels of technology in the two countries. For given relative quantities of all inputs and given levels of technology, we find that United States industries have higher rates of labor remuneration than the corresponding Japanese industries. Japanese industries have higher rates of remuneration for capital and intermediate inputs. Technical change is predominantly capital-saving, labor-saving, and intermediate input-using in both countries. An important focus for our bilateral models of production is the difference between rates of technical change in Japanese and United States industries. For six of the twenty-eight industries, we find that rates of technical change are higher in the United States than in Japan at given relative input quantities. Rates of technical change are higher in Japan for the remaining twenty-two industries.

PD October 1986. **TI** Production Functions and Vintages. **AA** Harvard University. **SR** Harvard Institute for Economic Research Discussion Paper: 1273; Department of Economics, Littauer Center, Harvard University, Cambridge, MA 02138. **PG** 30. **PR** No Charge. **JE** 022, 631, 621, 522. **KW** Production Functions. Vintages. Vintage Accounting. Producer Behavior. CES. Capital Stock.

AB This working paper is comprised of two papers: "Production Functions" This paper defines and describes production functions, and gives some of the history behind their development. "Vintages" This paper defines vintages, describes a notation for representing vintages, and describes vintage accounting.

Kahn, Charles

PD May 1986. **TI** The Use of Complicated Models as Explanations: A Re-Examination of Williamson's Late 19th Century America. **AA** University of Chicago. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-21; Domestic Studies Program Working

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Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 25. **PR** No Charge. **JE** 042, 210, 615, 633. **KW** Nineteenth Century America. Transportation. Social Savings. Historical Econometric Models. Economic History.

AB Multisector simultaneous equations models pose a dilemma for economic historians because they require us to rethink our notions of using models to "explain" history. This paper demonstrates the proper technique for evaluating and understanding the results of large-scale models: employing pencil-and-paper submodels and sensitivity tests to determine the minimal sets of assumptions which yield the result of interest. We use this technique to evaluate the findings of Jeffrey Williamson's model of late nineteenth century America, particularly his conclusions about the effects of improved transportation on social savings. We show that when properly handled, his model yields social savings comparable to those of simpler models in the literature, but for different reasons. Simpler models have overestimated social savings by ignoring the supply response of transported goods to changes in transportation price. These errors have been offset by ignoring the "dynamic" component: increases in the rate of investment due to lower relative prices of transported investment goods. Estimates are given for the significance of these and other factors.

PD May 1986. **TI** An Equilibrium Model of Quits Under Optimal Contracting. **AA** University of Chicago. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-23; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 24. **PR** No Charge. **JE** 824, 026, 022, 821. **KW** Optimal Contracting. Quits. Imperfect Information. Labor Market.

AB In this paper we use techniques developed in examining optimal contracting with imperfect information to build a simple equilibrium model of a labor market with imperfect information. We use the model to examine the effects that imperfect information imposes on labor markets compared with full information and noncontractual base lines. We demonstrate that quits increase in periods of high output, without postulating exogenous price rigidity.

PD August 1986. **TI** Two-Sided Uncertainty and "Up-or-Out" Contracts. **AU** Kahn, Charles; Huberman, Gur. **AA** University of Chicago. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-47; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 30. **PR** No Charge. **JE** 821. **KW** Contracts. Up-or-Out Contracts.

AB We develop a simple contracting framework which provides a rationale for "up-or-out" employment policies. The structure uses two-sided uncertainty, with both firm and worker subject to a moral hazard problem. The idea of the model is as follows: The employer sets a wage higher than opportunity cost to induce the worker to invest in firm specific capital. If the individual does not make the grade, it is in the firm's interest ex post to fire him. Had the initial arrangement not included provisions for firing individuals, the firm would underreport the value of the employee, thereby wrecking the incentive scheme. The basic model is a single-period formulation. Since it permits both firm and worker to be risk neutral, it admits a straightforward multiperiod extension, which we investigate.

Kamara, Avraham

PD November 1986. **TI** Liquidity Risk and the Information Content of Treasury Bill Futures and Forward Rates. **AU** Kamara, Avraham; Lawrence, Colin. **AA** Kamara: University of Washington, Graduate School of Business Administration. Lawrence: Columbia University, Graduate School of Business. **SR** Columbia First Boston Series in Money, Economics and Finance Working Paper: FB-86-35; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 36. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). **JE** 300, 311, 520. **KW** T-Bill S. Forward Rates. Speculative Efficiency. Forecasting Efficiency. Forecasting. Futures. Liquidity Risk. Arbitrage.

AB Recent studies interpret arbitrage profits between Treasury bill futures and forward contracts as futures' inefficiency. We establish that there exists a significant time varying liquidity premium in forward relative to futures rates, over the period 1976-1984. This premium differential reflects the differences in structural organization of the markets. Moreover, futures rates exhibit superior forecasting ability over the forward rates and are at least as accurate as macro econometric models. These findings are inconsistent with the interpretation of the forward-futures spread as inefficiencies in either market. Furthermore, the findings demonstrate that the futures market performs an important social benefit.

Karni, Edi

TI "Preference Reversal" and the Theory of Choice Under Risk. **AU** Safra, Zvi; Karni, Edi.

PD June 1986. **TI** Revelations in Auctions and the Structure of Preferences. **AU** Karni, Edi; Safra, Zvi. **AA** Karni: The Johns Hopkins University. Safra: Tel Aviv University. **SR** Johns Hopkins Department of Political Economy Working Paper: 175; Department of Political Economy, Johns Hopkins University, Baltimore, MD 21218. **PG** 16. **PR** No Charge. **JE** 026, 022. **KW** Auctions. Structure of Preferences. Value Revelation.

AB A well known result in the theory of auctions is that -- in the context of independent private values model -- in both ascending-bid and second price sealed bid auctions, there exists a unique dominant-strategy equilibrium, and that the dominant strategy of each bidder is to bid his value of the object that is being auctioned. Thus, both auction forms can be used to elicit the values individuals assign to the auctioned object. What has not been recognized until recently, is that this conclusion rests on the implicit assumption that the bidders are expected utility maximizers. In fact, expected utility maximizing behavior is a necessary and sufficient condition for the bids in these two auction forms to be the same (see section 3), it is a necessary and sufficient condition for second price sealed bid auctions to be value-revealing (see section 5), and it is a sufficient condition for the bids in ascending bid auctions to be value-revealing.

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PD June 1986. **TI** On the Equivalence Between Descending Bid Auctions and First Price Sealed Bid Auctions. **AA** The Johns Hopkins University. **SR** Johns Hopkins Department of Political Economy Working Paper: 174; Department of Political Economy, Johns Hopkins University, Baltimore, MD 21218. **PG** 8. **PR** No Charge. **JE** 026, 022. **KW** Auctions. Descending Bid Auctions. First Price Sealed Bid Auctions.
AB Descending bid auctions and first price sealed bid auctions are strategically equivalent. This insight, due originally to Vickery (1961), is based on the presumption that, as no relevant information becomes available before the termination of the game, bidders in both auctions must decide what to bid on the basis of what they know at the outset. Thus, the bidding strategies and the mapping from strategies to outcomes are the same for both auction forms. This characterization is based on two premises: (i) that buyer's valuations of the object being auctioned are independent and private, and (ii) that in descending bid auctions, bidders pursue dynamically consistent strategies, i.e., they always pursue bidding strategies such that, at each stage, the optimal continuation is identical to the continuation of the initial bidding plan at that stage. In this paper I analyze the restrictions on the preferences of the bidders implied by this assumption. In particular, I show that dynamically consistent bidding behavior is equivalent to expected utility maximizing behavior, and that the latter is equivalent to bidding the same price in descending bid auctions and in first price sealed bid auctions. Besides clarifying the meaning of the dynamic consistency assumption, this result constitutes a testable implication of expected utility theory.

PD September 1986. **TI** Revelations in Auctions and the Structure of Preferences. **AU** Karni, Edi; Safra, Zvi. **AA** Karni: Johns Hopkins University. Safra: Tel-Aviv University. **SR** Tel Aviv Foerder Institute for Economic Research Working Paper: 40-86; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. **PG** 21. **PR** No Charge. **JE** 022, 026. **KW** Auction Theory. Expected Utility. Non-Expected Utility. Preferences. Bids.
AB This paper explores the relationships among the actual bids in ascending bid auctions, the actual bids in second price sealed bid auctions, the true values of the auctioned objects, and the structure of decision makers preferences. It is shown that: (1) expected utility (EU) maximizing behavior (i.e. linear preference functionals) is equivalent to bidding the same prices in both auction structures; (2), EU is equivalent to bidding the true value in second price sealed bid auctions, and (3) quasi concavity and quasi convexity of the preference functionals is equivalent to bidding the true value in ascending bid auctions. The relationships between the bids in ascending bid auctions and either quasi concavity or quasi convexity is further analyzed and, in particular, it is shown that quasi concavity implies the existence of a dominant strategy in all ascending bid auction games. Finally, some experiments for discriminating among preference relations' structures are proposed.

Katz, Lawrence F.

TI Are Efficiency Wages Efficient? **AU** Dickens, William T.; Katz, Lawrence; Lang, Kevin.

TI Interindustry Wage Differences and Industry Characteristics. **AU** Dickens, William T.; Katz, Lawrence F.

TI Do Deferred Wages Dominate Involuntary Unemployment as a Worker Discipline Device? **AU** Akerlof, George A.; Katz, Lawrence F.

Kidd, David P.

PD November 1986. **TI** A Dynamic Model of Trade Union Behaviour. **AU** Kidd, David P.; Oswald, Andrew J. **AA** Kidd: The International Economist, Brittania Asset Management Limited. Oswald: Centre for Labour Economics, London School of Economics. **SR** London School of Economics Centre for Labour Economics Discussion Paper: 259; Centre for Labour Economics, London School of Economics, Houghton S Street, London WC2A 2AE, U.K. **PG** 25. **PR** No Charge. **JE** 831, 832. **KW** Unions. Trade Union. Closed Shop. Monopoly Unionism.
AB The paper constructs a dynamic model of trade union behaviour in which union membership is endogenous. Unemployed workers are assumed to leave their union (as they seem to in reality), and the union must therefore solve an intertemporal optimisation problem. The results imply (i) that conventional static models overstate the distortions caused by monopoly unionism and (ii) that the recent empirical models of union behaviour may be misspecified. The paper's analysis can be seen as an attempt to construct a model of the post-entry closed shop, which is more common in reality than the pre-entry shop on which the theoretical literature concentrates.

Kimbrough, Kent P.

TI Foreign Exchange Controls in a Black Market Economy. **AU** Greenwood, Jeremy; Kimbrough, Kent P.

TI An Investigation In The Theory Of Foreign Exchange Controls. **AU** Greenwood, Jeremy; Kimbrough, Kent P.

Kiyotaki, Nobuhiro

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

Klemperer, Paul

TI Dissolving a Partnership Efficiently. **AU** Crampton, Peter; Gibbons, Robert; Klemperer, Paul.

Kotlikoff, Laurence J.

PD August 1986. **TI** Health Expenditures and Precautionary Savings. **AA** National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2008; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 913, 921. **KW** Health Expenditures. Precautionary Savings. Life Cycle Model.
AB The precautionary motive for saving is an important issue that is receiving increasing attention. Part of the motivation for this interest stems from the post war coincidence of two trends, one a decline in the United

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States rate of saving and the other an increase in insurance of various types, including unemployment insurance, annuity insurance, disability insurance, and health insurance. This paper examines precautionary saving for uncertain health care payments using a simple two period and illustrates this model's theoretical insights through simulations of a 55 period life cycle model. While derived from a highly stylized model, the simulations give the impression that precautionary saving for uncertain health expenditures could explain a large amount of aggregate savings. Adding uncertain health expenditures to the model's economy raises long run savings by almost one third, assuming individuals self insure. Arrangements for insuring uncertain health expenditures also have potentially quite sizable effects on savings. Introducing actuarially fair insurance to the economy with uncertain health expenditures reduces the steady state level of wealth of that economy by 12 percent. Switching from the fair insurance arrangement to a Medicaid-type program with an asset test further reduces steady state wealth by 75 percent.

PD October 1986. **TI** Is Debt Neutral in the Life Cycle Model? **AA** National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2053; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 10. **PR** $2.00. **JE** 023, 322, 323. **KW** Life Cycle Model. Deficit. Debt Neutrality.
AB This paper questions the widely accepted view that deficits have real effects in the life cycle model. Standard analyses of deficits within life cycle models treat the government as a dictatorial entity that can effect any intergenerational redistribution it desires. In contrast, this paper drops the assumption of compulsion and models the government as a coalition of self-interested young and old generations whose bargaining determines government decisions. Since each generation is selfish, no generation will voluntarily absorb the debts of another except as a quid pro quo for receiving particular goods or services. Hence, redistribution per se between generations will not arise. Because each generation is ultimately responsible for its own liabilities, deficit finance, while altering the timing of tax receipts, has no economic impact.

PD November 1986. **TI** Laws as Assets: A Possible Solution to the Time Consistency Problem. **AU** Kotlikoff, Laurence J.; Persson, Torsten; Svensson, Lars E. O. **AA** Kotlikoff: National Bureau of Economic Research. Persson and Svensson: Institute for International Economic Studies. **SR** National Bureau of Economic Research Working Paper: 2068; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 023, 916. **KW** Time Consistency. Law. Enforcement. Overlapping Generations.
AB This paper presents a new solution to the time-consistency problem that appears capable of enforcing ex ante policy in a variety of settings in which other enforcement mechanisms do not work. The solution involves formulating a law, institution, or agreement that specifies the optimal ex ante policy and that can be sold by successive old generations to successive young generations. Each young generation pays for the law through the payment of taxes. Both old and young generations have an economic incentive to obey the law. For the old generation that owns the law, breaking the law makes the law valueless, and the generation suffers a capital loss. For the young generation the economic advantage of purchasing the existing law exceeds its cost as well as the economic gain from setting up the law.

Kravis, Irving B.

PD May 1986. **TI** The Assessment of National Price Levels. **AU** Kravis, Irving B.; Lipsey, Robert E. **AA** Kravis: Department of Economics, University of Pennsylvania. Lipsey: National Bureau of Economic Research, New York. **SR** National Bureau of Economic Research Working Paper: 1912; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 38. **PR** $2.00. **JE** 431, 134, 131, 227. **KW** Prices. Exchange Rates. Purchasing Power Parity. Balance of Trade.
AB This paper attempts to find norms for long-run national price levels, and therefore, by implication, for exchange rates, that are superior to those implied by the absolute or relative versions of purchasing power parity theory. The structural variables we have found to determine these price levels, real income per capita, the openness of the economy, and the share of tradables in total output, are used to explain price levels in periods since 1960 and to some extent since 1950. The results suggest that there was a movement toward a more "orderly" alignment of price levels, especially in the period before the 1970's. That is, national price levels came to be explained to an increasing degree by our structural variables. The price levels implied by the structural equations appear to come closer to representing long-run equilibrium levels than do those implied by purchasing power parity. The deviations from the structural equations seem to have value in predicting future changes in price levels or real exchange rates, in combination with changes in the structural variables. And they also contribute to predicting changes in the balance of trade.

TI The Competitiveness and Comparative Advantage of U.S. Multinationals, 1957-1983. **AU** Lipsey, Robert E.; Kravis, Irving B.

Krelle, Wilhelm

PD March 1985. **TI** Multi-Country Multi-Sector Growth Model. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: B-12; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, Deutschland. **PG** 17. **PR** No Charge. **JE** 111, 222, 213, 431, 411. **KW** Dynamic Neoclassical Growth Model.
AB There are multisector growth models of the neoclassical kind as well as linear multisector models of the von Neumann- and of the Leontief type. We also find dynamic models of international trade in the literature. Money has been introduced into neoclassical growth models. Capital flows and exchange rates have been explained. But there is no theory which combines all these features and treats them simultaneously in a dynamic setting. In this study we present a theory of this kind.

PD April 1986. **TI** Determination of Exchange Rates

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and Capital Flows for OECD Countries. **AU** Krelle, W.; Welsch, H. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: B46; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, Deutschland. **PG** 41. **PR** No Charge. **JE** 431, 441, 421, 122, 111. **KW** International Trade. Exchange Rates. Capital Flow. Export. Import. OECD. Commodity Flow.

AB Capital flows between market economies cannot be explained separately for each country. They depend (among other things) on the exchange rates and on commodity flows which can only be determined simultaneously. The exchange rates depend on the price ratios, the inflation rate disparities, the interest rate disparities, the growth rate disparities and the debt ratios. Exports and imports depend on price ratios, income and exchange rates. We modelled the import functions along the line of a dynamic linear expenditure system. The exchange rates are derived in a two-step procedure from exchange rate indices of each country with respect to all other countries. Transfer payments and the change of foreign reserves are taken as exogenous as well as GDP, the domestic price level, consumption and investment and the money supply of each country. Judging from the econometric tests, this system seems to approximate the complex reality in a way which could at least suffice for forecasting the trends of commodity and capital flows and exchange for rates for a middle period of 1-10 years.

Krueger, Alan B.

PD June 1986. **TI** Efficiency Wages and the Wage Structure. **AU** Krueger, Alan B.; Summers, Lawrence H. **AA** Krueger; Summers: Harvard University. **SR** National Bureau of Economic Research Working Paper: 1952; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 824, 825, 831, 812. **KW** Efficiency Wages. Wage Structure. Industry Wage Differentials.

AB This paper examines differences in pay for equally skilled workers in different industries. The major finding is that there is substantial dispersion in wages across industries, even after allowing for measured and unmeasured labor quality, working conditions, fringe benefits, transitory demand shocks, threat of unionization, union bargaining power, firm size and other factors. Some direct evidence in favor of efficiency wage theories is presented. The evidence suggests that industry wage differentials are successful in eliciting better performance through reduced turnover and increased effort.

Krugman, Paul

TI Market Access and International Competition: A Simulation Study of 16K Random Access Memories. **AU** Baldwin, Richard; Krugman, Paul.

PD June 1986. **TI** Industrial Organization and International Trade. **AA** Massachusetts Institute of Technology. **SR** National Bureau of Economic Research Working Paper: 1957; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 411, 431, 421, 422. **KW** Industrial Organization. International Trade Tariffs. Dumping. Intra-Industry Trade. Protectionism. Economies of Scale.

AB This paper reviews recent work on the relationship between industrial organization and international trade. Five strands in the theoretical literature are discussed. First is the role of economies of scale as a cause of intra-industry trade, modelled using monopolistic competition. Second is the effect of tariffs and quotas on domestic market power. Third is the analysis of dumping as international price discrimination. Fourth is the potential strategy role of government policy as an aid to domestic firms in oligopolistic competition. Finally, the paper discusses recent work that may provide a new argument for protectionism. A concluding section discusses recent efforts at quantification of new trade theory.

TI Persistent Trade Effects of Large Exchange Rate Shocks. **AU** Baldwin, Richard; Krugman, Paul R.

Kuhn, Peter

PD May 1986. **TI** A Nonuniform-Pricing Model Of Union Wages And Employment. **AA** University of Western Ontario. **SR** University of Western Ontario Department of Economics Research Report: 8606; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, Canada N6A 5C2. **PG** 53. **PR** No Charge. **JE** 022, 824, 831, 821, 611. **KW** Nonuniform Pricing Model. Union Wages. Employment. Trade Unions.

AB It is well known that a product-market monopolist selling a homogeneous good can extract more rents from consumers with private information than by charging a uniform price. The properties of optimal nonuniform pricing schemes have been analysed for the case of a continuum of consumers by Spence (1977), Mussa and Rosen (1978), Maskin and Riley (1984), and Goldman et al (1984), among others. One result of these models is that, to maximize profits, a constant-marginal-cost-monopolist will typically charge declining marginal and average prices, i.e. offer quantity discounts. Another is that, since the marginal prices paid by all consumers but the "highest" are above marginal cost, the resulting monopoly policy is different from and less efficient than what would occur in a competitive market. Perhaps surprisingly, the above results have apparently not been used to analyse the behavior of factor market monopolists such as trade unions. This oversight has occurred despite the fact that the theory of implicit employment contracts with asymmetric information analyses an essentially isomorphic problem, where the continuum of consumers is replaced by a continuum of states the firm may be in. This paper develops a model of trade union wages and employment that is based on nonuniform pricing theory.

Kuroda, Masashir

TI Bilateral Models of Production for Japanese and United States Industries. **AU** Jorgenson, Dale W.; Sakuramoto, Hikaru; Yoshioka, Kanji; Kuroda, Masashiro; Masashiro.

Laffont, Jean Jacques

PD February 1985. **TI** Using Cost Observation to Regulate Firms. **AU** Laffont, Jean Jacques; Tirole, Jean. **AA** Laffont: Universite de Toulouse, GREMAQ. Tirole: Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department

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of Economics Working Paper: 368; Department of Economics, MIT, Cambridge, MA 02139. **PG** 43. **PR** No Charge. **JE** 613. **KW** Regulation of Firms. Incentive Contracts. Cost Observation.

AB Costs are easy to observe, at least at the firm's level. The value of cost observation to the planner depends on what he attempts to control. If he monitors a single project in a multiproject firm, the latter can shift expenses to and from the particular project, both at real and accounting levels. In a first approximation it is reasonable to assume that the planner does not perfectly observe the firm's cost for the project. When the planner controls the entire firm, aggregate cost information becomes very valuable. If cost observability is introduced into the Baron-Myerson model, it is then possible to infer the true value of the cost parameter and to reach the first best with appropriate penalties. In this paper we introduce (possibly noisy) cost observability as well as an unobservable effort variable.

PD July 1985. **TI** The Dynamics of Incentive Contracts. **AU** Laffont, Jean Jacques; Tirole, Jean. **AA** Laffont: Universite de Toulouse. Tirole: Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 397; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 39. **PR** No Charge. **JE** 026, 022. **KW** Incentive Contracts. Principal/Agent Model.

AB The paper studies a simple two-period principal/agent model in which the principal updates the incentive scheme after observing the agent's first-period performance. The agent has superior information about his ability. The principal offers a first period incentive scheme and observes some measure of the agent's first-period performance (cost or profit), which depends on the agent's ability and (unobservable) first-period effort. The relationship is entirely run by short-term contracts. In the second-period the principal updates the incentive scheme and the agent is free to accept the new incentive scheme or to quit. The strategies are required to be perfect and updating of the principal's beliefs about the agent's ability follows Bayes' rule. The central theme of the paper is that the ratchet effect leads to much pooling in the first period. First, for any first-period incentive scheme, there exists no separating equilibrium. Second, when the uncertainty about the agent's ability is small, the optimal scheme must involve a large amount of pooling. The paper also gives necessary and sufficient conditions for the existence of partition equilibria.

PD November 1985. **TI** Auctioning Incentive Contracts. **AU** Laffont, Jean Jacques; Tirole, Jean. **AA** Laffont: Universite de Toulouse. Tirole: Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 403; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 22. **PR** No Charge. **JE** 022, 026. **KW** Auctions. Incentive Contracts.

AB This paper draws a remarkably simple bridge between auction theory and incentive theory. It considers the auctioning of an indivisible project between several firms. The firms have private information about their future cost at the bidding stage, and the selected firm ex-post invests in cost reduction. We show that: 1) The optimal auction can be implemented by a dominant strategy auction which uses both information about the first bid and the second bid. 2) The winner faces a (linear) incentive contract. 3) The fixed transfer to the winner decreases with his announced expected cost and increases with the second lowest announced expected cost. 4) The share of cost overruns born by the winner decreases with the winner's announced expected cost.

Laidler, David

PD October 1986. **TI** What Was New About Liquidity Preference Theory? **AA** University of Western Ontario. **SR** University of Western Ontario Department of Economics Research Report: 8612; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, Canada N6A 5C2. **PG** 43. **PR** No Charge. **JE** 023, 311, 031. **KW** Liquidity Preference Theory. Monetary Mechanisms.

AB I shall argue that the main distinguishing feature of Liquidity Preference theory lay in the way that its exponents applied a well articulated capital theoretic approach, not only to modelling the demand for money, but also to investigating the role played by monetary mechanisms in undermining the smooth coordination of inter-temporal choices about resource allocation. This latter issue was of central concern to monetary economics in the 1920s and 1930s, just as the secular relationship between money and prices had dominated monetary economics before the First World War. Thus Liquidity Preference theory refined and extended an old approach to monetary theory to deal with a new problem.

Landa, Janet T.

PD August 1986. **TI** HADLEY VS BAXENDALE Revisited: The Foreseeability and the Mitigation Doctrines in Contract Law. **AA** York University. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-48; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 29. **PR** No Charge. **JE** 916. **KW** Contract Law. Foreseeability Doctrine.

AB Hadley v. Baxendale, the famous 1854 British legal case, has been analysed by several writers in the law and economics area. The paper revisits the case from a Property Rights-Public Choice perspective and arrives at new insights regarding the conceptual origins of the litigation and the foreseeability doctrines in contract law.

Lang, Kevin

TI Are Efficiency Wages Efficient? **AU** Dickens, William T.; Katz, Lawrence; Lang, Kevin.

Laroque, Guy

PD March 1986. **TI** On the Inventory Cycle and the Instability of the Competitive Mechanism. **AA** I.N.S.E.E. **SR** Unite de Recherche Document de Travail ENSAE/INSEE: 8608; INSEE, Unite de Recherche, 18 Bd. Adolphe Pinard, 75675 Paris cedex 14, FRANCE. **PG** 50. **PR** No Charge. **JE** 023, 131, 021, 311, 321. **KW** Business Cycle. Inventories. Perfect Foresight. Tatonnement. Keynesian Policies.

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AB This paper presents a model of the business cycle with perfect foresight where the mere presence of inventories is responsible for the appearance 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. The impact of Keynesian policies is easy to analyse in this framework. A new interpretation of their success in reducing unemployment in the 60's and of their failure to do so thereafter is proposed.

PD May 1986. **TI** Le Chomage Des Annees 1970 Etait-il Classique? **AA** I.N.S.E.E. **SR** Unite de Recherche Document de Travail ENSAE/INSEE: 8611; INSEE, Unite de Recherche, 18 Bd. Adolphe Pinard, 75675 Paris cedex 14, France. **PG** 28. **PR** No Charge. **JE** 131, 211, 212, 820, 122. **KW** Economics of Disequilibrium. Fixed Price Model. Classical Unemployment. France.
AB The purpose of this paper is to examine, using macro-econometric models based on French data, whether the fix-price model describes the economic situation of the 1970's. The structure of these models is briefly surveyed and, with regards to the present paper, the more relevant results are given. The possibility that weaknesses in the empirical works explain the low probability that the economy is in a classical unemployment regime in then explored. Some suggestions of alternative specifications are formulated. These suggested changes might give a higher probability of occurence of this kind of regime.

TI On Competitive Cycles in Productive Economies. **AU** Benhabib, Jess; Laroque, Guy.

Larrain, Felipe

PD November 1986. **TI** Contractionary Devaluation, and Dynamic Adjustment of Exports and Wages. **AU** Larrain, Felipe; Sachs, Jeffrey. **AA** Larrain: Instituto de Economia. Sachs: Harvard University. **SR** National Bureau of Economic Research Working Paper: 2078; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 431, 311, 121, 421, 112. **KW** Devaluation. Contraction. Exports. Wages. Developing Countries.
AB Recent macroeconomic models of developing countries have emphasized the possibility of contractionary devaluations, stressing that domestic aggregate demand is likely to be reduced by the devaluations while aggregate supply may respond only slowly to the change in relative prices brought about by the devaluation. These results have been obtained in static models. In this paper we add wage and export-sector dynamics to the models of contractionary devaluation, and show that the effects which produce contractionary devaluations in the short term can produce limit cycles in the long run. The economy never returns to long-run equilibrium following a devaluation, but rather moves with fixed periodicity through successive phases of boom and bust.

Lave, Judith R.

TI The Impact of Medicare's Prospective Payment System on Psychiatric Patients Treated in Scatterbeds. **AU** Frank, Richard G.; Lave, Judith R.; Taube, Carl; Rupp, Agnes; Goldman, Howard H.

Lawrence, Colin

PD April 1985. **TI** The Determination of Wages in Declining Industries: An End-Game and Slow Game Interpretation. **AU** Lawrence, Colin; Lawrence, Robert Z. **AA** Lawrence, Colin: Graduate School of Business, Columbia University. Lawrence, Robert: Brookings Institution, Washington D.C. **SR** Columbia First Boston Series in Money, Economics and Finance Working Paper: FB-85-10; Graduate School of Business, Uris Hall, Columbia University, New York, NY 10027. **PG** 88. **PR** No Charge. **JE** 821, 824, 831, 631. **KW** Declining Industry Wage Determination. Union Power.
AB Most heavy industries are characterized by long-lived (lumpy) capital. Investment in such industries is ex-ante putty-putty and ex-post putty-clay, leading to a non-convex technology. When exogenous stochastic disturbances (such as a decline in competitiveness or a decline in demand) reduce investment growth (the slowgame) or eliminate all gross investment (the endgame), the elasticity of substitution between capital and labor declines. Unions, seeking to maximize expected utility, will paradoxically bargain for higher wages, the slower the growth of the industry. This occurs because for any wage increase, unions are less concerned about future employment prospects. Consequently, unions in end-game or slow-game will seek to harvest the quasi-rents earned by capital. In the extreme case of end-game with a Leontief production technology, unions will scoop all profits and may cause shutdowns in several plants. The end-game is tested empirically for the United States steel industry over the period 1960 - 1983 and the slowgame theory for 57 United States manufacturing industries over 1960 - 1984. Wages in the United States steel industry behave very much like an end-game scenario. The cross-selection tests show that plant size and capital intensity are critical in wage determination only when the industries are in a slow-game.

TI Liquidity Risk and the Information Content of Treasury Bill Futures and Forward Rates. **AU** Kamara, Avraham; Lawrence, Colin.

Lawrence, Robert Z.

TI The Determination of Wages in Declining Industries: An End-Game and Slow Game Interpretation. **AU** Lawrence, Colin; Lawrence, Robert Z.

Layard, Richard

PD August 1986. **TI** The Performance of The British Labour Market. **AU** Layard, Richard; Nickell, Stephen J. **AA** Layard: Centre for Labour Economics, London School of Economics. Nickell: Centre for Labour Economics, London School of Economics, and Institute of Economics and Statistics, Oxford. **SR** London School of Economics Centre for Labour Economics Discussion Paper: 249; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, UNITED KINGDOM. **PG** 128. **PR** No Charge. **JE** 824, 134, 122, 831. **KW** Labor Market. Unemployment. Productivity. Employment. Wage

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Rigidity. Britain. Wage Inflation.
AB The paper mainly aims to explain why wage inflation remains so stable while unemployment is so high. First the long-run NAIRU has risen substantially since the 1960s due to union militancy, higher taxes and easier social security. Second, the short-run NAIRU exceeds the long-run NAIRU, due to the effect of high recent unemployment in raising current wage pressure. The reason for this partial hysteresis is identified as the high proportion of long-term unemployed, rather than 'insider-outsider' mechanisms. This paper also explains the recent recovery of productivity growth in terms of higher total factor productivity growth, higher work effort by workers and once-for-all scrapping of less productive plants.

PD October 1986. **TI** Review of the Year's Work 1985/86. **AA** Centre for Labour Economics, London School of Economics. **SR** London School of Economics Centre for Labour Economics Discussion Paper: 263; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, UNITED KINGDOM. **PG** 30. **PR** No Charge. **JE** 824. **KW** Annual Report. Unemployment. Labour Economics. Britain.
AB This report reviews the year's work of the Centre for Labour Economics at the London School of Economics. The work concentrates on the problems of unemployment and inflation, with a main emphasis on the supply side of the economy. This review summarizes the findings of the Centre's studies the chief ambition of the Centre is to get a better and more integrated understanding of how the British labour market really works.

Lazear, Edward P.

PD August 1986. **TI** Employment-At-Will, Job Security, and Work Incentives. **AA** University of Chicago. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-49; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 35. **PR** No Charge. **JE** 822. **KW** Job Security. State Mandated Tenure.
AB Countries differ in their job security provisions. In some countries, workers have the equivalent of government enforced tenure. In others, workers can be dismissed at the employer's pleasure. Some have argued that job security rules provide workers with incentives to undertake actions that they would not undertake without the security. Others have argued that job security causes unemployment. This paper explores the various claims and implications of state mandated job security rules. The main conclusion is that there is no case where state-dictated job security is warranted. The argument that job security rules promote investment in firm specific human capital is incorrect. Paradoxically, a well-functioning competitive labor market offsets the effects of state mandated job security so the case for or against must rely on friction.

Ledyard, John O.

PD November 10, 1986. **TI** The Economics of Space Station. **AA** California Institute of Technology. **SR** Caltech Social Science Working Paper: 617; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 52. **PR** No Charge. **JE** 614, 020, 011, 022, 024, 026, 610. **KW** Space Station. Marginal Cost. Pricing. Priority. Public Enterprise Management. Mechanism Design. Teams. Engineering Uncertainty.

Lee, Lung Fei

PD October 1986. **TI** Specification and Estimation of Consumer Demand Systems With Many Binding Non-Negativity Constraints. **AU** Lee, Lung Fei; Pitt, Mark M. **AA** Department of Economics, University of Minnesota. **SR** University of Minnesota Center for Economic Research Discussion Paper: 236; Department of Economics, 1035 Management and Economics, University of Minnesota, 271 19th Avenue, South Minneapolis, MN 55455. **PG** 30p. **PR** No Charge. **JE** 211, 022, 921. **KW** Consumer Demand. Utility Functions. Household Consumption. Specification.
AB This article presents coherent stochastic specifications for direct and indirect utility functions which result in computationally tractable demand systems subject to many binding non-negativity constraints. A seven commodity linear expenditure demand system for food is estimated using household consumption data.

Leiderman, Leonardo

PD August 1986. **TI** Propagation of Shocks in a High-Inflation Economy: Israel, 1980-85. **AU** Leiderman, Leonardo; Razin, Assaf. **AA** Tel Aviv University. **SR** National Bureau of Economic Research Working Paper: 2003; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 122, 023, 134. **KW** High Inflation Economy. Israel. Monetary Accomodation. Indexation.
AB The purpose of this paper is to provide empirical answers to questions related to the propagation of shocks in a high-inflation economy. Do one-time inflationary shocks give rise to long-term persistence, or inertia? Do balance of payments' shocks trigger a process that, through indexation and monetary accomodation, results in long-term changes in inflation? Within the context of a specific hypothesis, influential both in policy discussions and in economic analyses, the paper addresses these issues using Israeli data and vector-autoregression techniques. The evidence does not support the hypothesis that one-time nominal shocks have a persistent effect on the inflation rate, or the hypothesis that long-term changes in inflation are triggered by autonomous fluctuations in the trade balance.

PD September 1986. **TI** Consumption and Government-Budget Finance in a High-Deficit Economy. **AU** Leiderman, Leonardo; Razin, Assaf. **AA** Tel-Aviv University. **SR** National Bureau of Economic Research Working Paper: 2032; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 023, 320, 122. **KW** Consumption. High Deficit Economy. Government Budget Finance. Israel. Intertemporal Optimising Model.
AB This paper characterizes empirically how government budget variables, such as spending, taxes, and deficits, affected private-sector consumption in the high-budget-deficit economy of Israel during the first half of the 1980s. The paper develops and estimates an intertemporal

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optimizing model of consumption choice by finite-lived individuals. The evidence supports this formulation against the Ricardian infinite-horizon case, but it does not support it when compared to the unrestricted relations in the data.

Leonard, Jonathan S.

PD June 1986. **TI** On the Size Distribution of Employment and Establishments. **AA** University of California, Berkeley. **SR** National Bureau of Economic Research Working Paper: 1951; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 824. **KW** Employment Growth. Labor Demand. Size Distribution of Employment.

AB Recent arguments that employment growth occurs disproportionately at small establishments are fundamentally misleading because they confuse regression to the mean with structural shifts in the size distribution of establishments and with an aging effect within cohorts. The net growth usually observed in aggregate studies hides the gross flows; 13 percent of the jobs in existence in 1974 had disappeared by 1980, while 18 percent of the 1980 jobs had not existed six years previously. The variation observed here in labor demand over time within individual establishments may help to explain unemployment.

Levin, Dan

TI Trade Liberalization and Imperfect Competition: A Welfare Analysis. **AU** Eldor, Rafael; Levin, Dan.

Levine, David

TI Sequential Bargaining With Many Buyers. **AU** Fudenberg, Drew; Levine, David; Tirole, Jean.

Lipsey, Richard G.

TI Product Differentiation. **AU** Eaton, B. Curtis; Lipsey, Richard G.

Lipsey, Robert E.

TI The Assessment of National Price Levels. **AU** Kravis, Irving B.; Lipsey, Robert E.

PD October 1986. **TI** The Competitiveness and Comparative Advantage of U.S. Multinationals, 1957-1983. **AU** Lipsey, Robert E.; Kravis, Irving B. **AA** Lipsey: National Bureau of Economic Research. Kravis: University of Pennsylvania. **SR** National Bureau of Economic Research Working Paper: 2051; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 442, 630. **KW** United States Multinationals. Comparative Advantage.

AB The share in world exports of manufactured goods of United States multinational firms, including their majority-owned overseas affiliates, has been nearly stable since 1966. This stability, over a period in which the export share of the United States as a geographical entity was declining for the most part, suggests that it was not declines in the competitiveness of American firms' management and technology that were responsible for the deterioration of the United States trade position. That view is reinforced by the fact that a good deal of the change in United States export shares can be explained by changes in United States prices relative to those of other countries. The comparative advantage of both the United States and United States multinational firms, especially the latter, has been in chemicals, machinery, and transport equipment, industries with relatively fast growth in worldwide exports. The growth of United States exports in 1966-77 fell far short of what it would have been if the United States had retained its share in each industry. The growth of United States multinationals' exports fell a little short of that implied by constant-shares but surpassed that of the United States as a country in almost every industry. After 1977, both the United States and its multinationals kept up with their constant share growth rates and the United States even ran a bit ahead. The multinationals' position as exporters, now supplying almost half their exports from their majority-owned overseas affiliates, seems to have been quite insulated from changes in United States policies and circumstances.

TI The Export Performance of Swedish and United States Multinationals. **AU** Blomstrom, Magnus; Lipsey, Robert E.

TI Firm Size and Foreign Direct Investment. **AU** Blomstrom, Magnus; Lipsey, Robert E.

Lo, Andrew W.

PD September 1986. **TI** Maximum Likelihood Estimation of Generalized Ito Processes with Discretely Sampled Data. **AA** University of Pennsylvania. **SR** National Bureau of Economic Research Technical Paper: 59; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 211, 213. **KW** Maximum Likelihood Estimation. Generalized Ito Processes. Discretely Sampled Data.

AB In this paper, we consider the parametric estimation problem for continuous time stochastic processes described by general first-order nonlinear stochastic differential equations of the Ito type. We characterize the likelihood function of a discretely-sampled set of observations as the solution to a functional partial differential equation. The consistency and asymptotic normality of the maximum likelihood estimators are explored, and several illustrative examples are provided.

Lucas, Robert E. Jr

PD May 1985. **TI** Money and Interest in a Cash-In-Advance Economy. **AU** Lucas, Robert E. Jr; Stokey, Nancy L. **AA** Lucas: Department of Economics, University of Chicago. Stokey: J. L. Kellogg Graduate School of Management, Northwestern University. **SR** National Bureau of Economic Research Working Paper: 1618; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 41. **PR** $2.00. **JE** 311, 023, 321. **KW** Cash-In-Advance. Money Growth. Interest. Signal. Expectations. Equilibria.

AB In this paper we analyze an aggregative general equilibrium model in which the use of money is motivated by a cash-in-advance constraint, applied to purchases of a subset of consumption goods. The system is subject to both real and monetary shocks, which are economy-wide and observed by all. We develop methods for verifying the

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existence of, characterizing, and explicitly calculating equilibria. A main result of the analysis is that current money growth affects the current real allocation only insofar as it affects expectations about future money growth, i.e., only through its value as a signal.

Lynch, Lisa M.

PD September 1986. **TI** The Youth Labor Market in the 80s: Determinants of Re-Employment Probabilities for Young Men and Women. **AA** Sloan School of Management, Massachusetts Institute of Technology. **SR** National Bureau of Economic Research Working Paper: 2021; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 826, 810, 841, 851, 917. **KW** Youth Labor Market. Re-Employment Probabilities.

AB This paper presents an analysis of the determinants of re-employment probabilities for young workers in the United States. Using data from the new National Longitudinal Survey youth cohort a model is developed to analyze the transition probabilities from nonemployment to employment. The key factors examined include personal characteristics, unemployment income, local demand conditions, and duration dependence. There are significant differences between the labor market experiences of whites and nonwhites, and males and females. High school dropouts have many more difficulties in the labor market than those who remain in school longer and/or receive other types of training. Local demand conditions are a strong determinant of the duration of spells of nonemployment and there appears to be strong evidence of negative duration dependence in re-employment probabilities for both young males and young females.

Macauley, Molly K.

TI Determinants and Consequences of the Private-Public School Choice. **AU** Hamilton, Bruce W.; Macauley, Molly K.

PD August 1986. **TI** An Economics Perspective of the 21st Century Space Station. **AA** Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Paper: EM86-04; Energy and Materials Division, Resources for the Future, 1616 P. St. Northwest, Washington DC 20036, USA. **PG** 14. **PR** $5.00 (United States funds only). **JE** 621, 022, 600. **KW** Pricing Policy. Technical Change. Outer Space. Aerospace.

AB This paper offers an admonition concerning effective space station growth in the next century. One aspect of near-term station use that can be implemented by station planners has direct consequences for the longer term. This aspect is the role of pricing policy for station access and use. Pricing can be crucial in determining where technical change and new developments in station design and operation will be needed. Furthermore, if past experience with technical change in the use of nonpriced resources is a guide to the future -- as with the geostationary orbit and electromagnetic spectrum -- the absence of prices can invite the presence of partisan, emotive debate, and in turn, the implementation of stringent, costly technical rules to accommodate scarcity. Such undesirable outcomes may be particularly likely in the case of the space station, given the large amount of international collaboration, as well as public versus private sector activities, envisioned for it. Efficient pricing established early on in the program may forestall the consequences of nonpriced use and perpetuate the most objective long-run allocation of station resources.

Maccini, Louis

TI Inventories, Multiperiod Contracts and the Dynamic Behavior of the Firm Under Uncertainty. **AU** Haltiwanger, John; Maccini, Louis.

MaCurdy, Thomas E.

PD December 1985. **TI** A Guide to Applying Time Series Models to Panel Data. **AA** Stanford University and NORC. **SR** Economics Research Center/NORC Discussion Paper: 86-12; Economics Research Center/NORC, 6030 South Ellis, Chicago, IL 60637. **PG** 55. **PR** $2.00; send requests to Librarian, NORC. **JE** 211, 212. **KW** Panel Data. Time Series. Dynamic Models. Dynamic Simultaneous Equations. ARMA. Lag Structures. Longitudinal Data.

AB Characterizing the dynamic properties of variables is a primary goal of panel data analyses. Such analyses involve the specification of a distributed lag structure relating measured variables and a stochastic process generating disturbances. A dynamic simultaneous equation model (DSEM) offers a rich statistical framework within which to develop these specifications. This paper presents a flexible methodology for fitting these models to longitudinal data. A DSEM merges time series analysis with the analysis of simultaneous equations. This feature allows a researcher to consider generally specified distributed lag structures having finite or infinite order using the short time series typically available in longitudinal data. Disturbances in the DSEM are assumed to follow an autoregressive-moving average (ARMA) process. In a panel data setting the error framework provided by this ARMA scheme can be readily extended to incorporate permanent and random trend error components. However, not all of the analysis of the DSEM for a single time series carries over to longitudinal data offering a short time series and a large cross section. A general solution to this problem is proposed. In addition, this study develops estimation procedures based on the application of three-stage least squares (3SLS) to estimate distributed lag coefficients and parameters of the error process. Other estimation methods are also designed to estimate structural coefficients variance-covariance parameters jointly imposing any relevant constraints. Section 1 presents a general statistical framework and considers a wide variety of issues associated with model specification. Section 2 discusses general estimation procedures. Finally, Section 3 provides specific approaches to various estimation problems.

PD May 1986. **TI** A Framework for Relating Microeconomic and Macroeconomic Evidence of Intertemporal Substitution. **AA** Stanford University. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-22; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 45. **PR** No Charge. **JE** 921, 213, 022, 023. **KW** Intertemporal Substitution. Aggregation Procedure. Consumer Choice. Life Cycle Allocation.

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AB This paper proposes an aggregation procedure that accounts for consumer choice at both the extensive and intensive margins. Presently microeconomic explanations of cyclical movements in hours of work and consumption use the microeconomic model of life cycle allocation. This method conflicts with claims that the measured relationships among aggregate labor market variables diverge from those implied by the micro estimates. The results in this paper call into question not merely current macro estimates of the representative consumer's behavior, but also those studies that use micro evidence to calibrate macro models.

Makowski, Louis

PD October 1986. **TI** Dominant Strategy Mechanisms in Nonatomic Transferable Utility Economies: Characterization and Existence. **AU** Makowski, Louis; Ostroy, Joseph M. **AA** Makowski: University of California Davis. Ostroy: University of California at Los Angeles. **SR** University of California at Los Angeles Department of Economics Working Paper: 421; Department of Economics - University of California at Los Angeles, Los Angeles, CA 90024. **PG** 46. **PR** $2.50. **JE** 021, 024, 025. **KW** Dominant Strategy Mechanisms. Marginal Product. Euler's Theorem. Groves Scheme.

AB This paper extends the characterization of efficient dominant strategy mechanisms with quasi-linear preferences to models with a continuum of agents. Our results represent the nonatomic analogs of Groves schemes, which characterize dominant strategy mechanisms in finite agent models. The key concept in our analysis is that of an infinitesimal agent's marginal product. Efficient dominant strategy mechanisms satisfy the rule that an agent's payoff must equal his/her marginal product plus a lump sum. Unlike the finite agent case where lump sums typically cannot be chosen to achieve budget-balance, in the nonatomic model budget-balance can be attained. We also show that if an "individual rationality" restriction is imposed, lump sums must be zero, and we relate this to the possibility of designing mechanisms for public as compared to private goods.

Mankin, N. Gregory

TI Are Output Fluctuations Transitory? **AU** Campbell, John Y.; Mankin, N. Gregory.

Mankiw, Gregory

PD June 1986. **TI** News or Noise? An Analysis of GNP Revisions. **AU** Mankiw, N. Gregory; Shapiro, Matthew D. **AA** Mankiw: Harvard University. Shapiro: Cowles Foundation for Research in Economics. **SR** National Bureau of Economic Research Working Paper: 1939; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 221. **KW** GNP Revisions. Statistical Errors.

AB This paper studies the nature of the errors in preliminary GNP data. It first documents that these errors are large. For example, suppose the preliminary estimate indicates that real GNP did not change over the recent quarter; then one can be only 80 percent confident that the final estimate (annual rate) will be in the range from -2.8 percent to +2.8 percent. The paper also documents that the revisions in GNP data are not forecastable. This finding implies that the preliminary estimates are the efficient given available information. Hence, the Bureau of Economic Analysis appears to follow efficient statistical procedures in making its preliminary estimates.

PD August 1986. **TI** Government Purchases and Real Interest Rates. **AA** National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2009; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 023, 322, 311. **KW** Real Interest Rates. Government Purchases.

AB This paper examines the dynamic impact of government purchases in a simple general equilibrium model with both durable and non-durable consumer goods as well as productive capital. The model generates perhaps surprising results. In particular, increases in government purchases are shown to cause reductions in real interest rates. The model thus provides a possible explanation for the observed behavior of real interest rates around wars.

Margo, Robert A.

PD May 1985. **TI** Educational Achievement in Segregated School Systems: The Effects of "Separate But Equal". **AA** Department of Economics, University of Pennsylvania. **SR** National Bureau of Economic Research Working Paper: 1620; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 42. **PR** $2.00. **JE** 917, 912, 914. **KW** Segregation. Education. Schools. Illiteracy. Separate-But-Equal. Race. School Boards.

AB Educational achievement in segregated school systems was considerably lower in the black schools than in the white schools. Economic historians have argued that the racial achievement gap reflected the discriminatory funding of the black schools. This paper assesses counterfactually the historical effects of a "separate-but-equal" policy of educational finance. Using cross-sectional data from 1930 and 1940, I estimate race-specific educational production functions. Eliminating race differences in inputs supplied by school boards explains 40-50 percent of the racial achievement gap, depending on how achievement is measured. The remainder appears to reflect the impact of family background on achievement, of which the most important effect was adult black illiteracy, a legacy of slavery and educational backwardness in the late 19th century. The paper also shows how school boards' marginal valuation of black achievement can be recovered from the production function estimates. Compared to preferences that would have led them to voluntarily practice equality, Southern school boards judged black achievement to be worth roughly half the value they placed on white achievement.

Marquez, Jaime R.

TI The Structure and Properties of the FRB Multicountry Model Part I: Model Description and Simulation Results. **AU** Edison, Hali J.; Marquez, Jaime R.; Tryon, Ralph W.

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Marsh, Terry A.

PD September 1986. **TI** Dividend Behavior for the Aggregate Stock Market. **AU** Marsh, Terry A.; Merton, Robert C. **AA** Marsh: University of California, Berkeley. Merton: Massachusetts Institute of Technology. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-51; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 74. **PR** No Charge. **JE** 521, 313. **KW** Corporate Dividends. Stock Price Changes.

AB We develop and estimate a model of the dynamic behavior of aggregate corporate dividends as a function of the change in permanent earnings of firms. Although structured along the lines of the Lintner-Brittain-Fama-Babiak models of individual-firm dividend behavior, the model uses changes in stock prices instead of accounting earnings to measure permanent earnings changes. The performance of the model is compared with both the accounting earnings-based models and the trend-autoregressive model associated with Shiller (1981a).

Maskin, Eric

PD May 1985. **TI** Correlated Equilibria and Sunspots: A Note. **AU** Maskin, Eric; Tirole, Jean. **AA** Maskin: Harvard University. Tirole: Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 398; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 16. **PR** No Charge. **JE** 023, 026. **KW** Uncertainty. Correlated Equilibria. Asymmetric Information.

AB In this note we study a simple finite horizon economy in which extrinsic uncertainty (e.g., sunspots) matters if and only if it is differentially observed by the agents. In our model agents have asymmetric information and thus do not share the same beliefs (theory) about future prices. As we discuss in section 5, the model, despite its apparent differences, is closely analogous to recent treatments of symmetric information sunspot equilibria in infinite horizon, overlapping generations models.

Masson, R. T.

TI Dynamic Market Models in Industrial Organization. **AU** Geroski, P. A.; Masson, R. T.

Mathews, Russell Lloyd

PD September 26, 1986. **TI** Fiscal Federalism in Australia: Past and Future Tense. **AA** Centre for Research on Federal Financial Relations Australian National University. **SR** Australian National University Centre for Federal Financial Relations Occasional Paper: 74; Centre for Research on Federal Financial Relations, Copland Building, The Australian National University, Canberra, ACT 2601, Australia. **PG** 58. **PR** No Charge. **JE** 325, 322, 324. **KW** Public Sector. Revenue Sharing. Grants. Loans. Local Government.

AB The paper reviews recent developments in Australian fiscal federalism, with special reference to State access to income and indirect taxes, the distribution of general revenue grants, the growth of specific purpose grants, the allocation of loan funds, and local government finance.

Mathieson, Donald

TI International Capital Mobility in Developing Countries vs. Industrial Countries: What do Saving-Investment Correlations Tell Us? **AU** Frankel, Jeffrey A.; Dooley, Michael; Mathieson, Donald.

McAleer, Michael

TI Variable Addition and Lagrange Multiplier Tests for Linear and Logarithmic Regression Models: Theory and Monte Carlo Evidence. **AU** Godfrey, L. G.; McAleer, Michael; McKenzie, C. R.

McCallum, Bennett T.

PD June 1986. **TI** On "Real" and "Sticky-Price" Theories of the Business Cycle. **AA** Carnegie-Mellon University. **SR** National Bureau of Economic Research Working Paper: 1933; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 130, 023, 211. **KW** Business Cycles. Sticky-Price Theory. Real Business Cycle. Real Business Cycle Hypothesis.

AB This paper begins by identifying the distinguishing characteristic of the "real business cycle" (RBC) class of macroeconomic models. It then scrutinizes existing evidence, presented in support of the RBC approach, of three types: calibrated general equilibrium models with no monetary sector, vector-autoregression variance decomposition results, and univariate measurements of trend and cyclical components. It is argued that, in fact, these types of evidence have so far provided little support for the RBC hypothesis. Finally, with regard to an important alternative hypothesis concerning macroeconomic fluctuations, the paper proposes a partial rationalization for the stickiness of nominal product prices.

McCurdy, Thomas H.

PD October 10, 1986. **TI** Tests of the Martingale Hypothesis for Foreign Currency Futures With Time-Varying Volatility. **AU** McCurdy, Thomas H.; Morgan, Ieuan G. **AA** Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 663; 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** 431, 313, 212. **KW** Foreign Currency Futures. Martingale. Time-Varying Volatility. GARCH. Risk Premium. Exchange Rates.

AB The martingale hypothesis for daily and weekly rates of change of futures prices for five currencies is tested in this paper. With daily data, we find some evidence against the null hypothesis for each currency. Although institutionally imposed limits on daily price changes were binding fairly often in the earlier years of the sample, the results are not substantially different when data affected by limit moves are removed. Trading day effects in foreign currency futures and spot prices introduce complicated day of the week patterns in futures price. For this reason, we retest the martingale hypothesis with weekly data and reject the null hypothesis for only one currency. For this currency, one interpretation of the evidence is that a time-varying risk premium exists.

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McDonald, Robert

PD September 1986. **TI** Dividend and Share Changes: Is There a Financing Hierarchy? **AU** McDonald, Robert; Soderstrom, Naomi. **AA** Northwestern University. **SR** National Bureau of Economic Research Working Paper: 2029; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 521. **KW** Dividends. Financing Hierarchy. Shares. Dividend Model.

AB The most widely accepted empirical dividend model is that proposed by Lintner, who argued that firms smooth dividends over time. Many theoretical dividend models, however, either predict that dividends should be highly variable, or at least offer no support for the smoothing hypothesis. We use a switching regression model to test the Lintner model against an alternative which allows dividend behavior to differ depending upon whether or not firms are issuing shares. We reject the Lintner model, finding no evidence of dividend smoothing when firms are not issuing shares, and a high negative dividend growth rate when firms are issuing shares. This description of dividend behavior suggests the existence of a financing hierarchy in that the marginal source of finance differs over time. To further explore the financing hierarchy, we estimate logit models which explain the decisions by firms to change dividends, and to issue or repurchase shares. The results are consistent with the existence of a financing hierarchy.

McKenzie, C. R.

TI Variable Addition and Lagrange Multiplier Tests for Linear and Logarithmic Regression Models: Theory and Monte Carlo Evidence. **AU** Godfrey, L. G.; McAleer, Michael; McKenzie, C. R.

McKenzie, George

PD 1986. **TI** Applied Welfare Economics and Frisch's Conjecture. **AA** University of Southampton. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 8625; Department of Economics, University of Southampton, Southampton 509 5NH, England. **PG** 33. **PR** No Charge. **JE** 024. **KW** Welfare Economics. Frisch.

AB My objective in this paper is to consider a number of ambiguities which have arisen in modern applied welfare economics. At a technical level, I am not proposing to say anything new. Rather I will be concerned with the interpretation and critical assessment of some recent literature and the direction in which I believe this area of research should proceed in the future.

TI Portfolio Balance, International Debt and Country Risk. **AU** Blofeld, Mark; McKenzie, George; Thomas, Stephen.

McKibbin, Warwick J.

PD September 1986. **TI** Comparing the Global Performance of Alternative Exchange Arrangements. **AU** McKibbin, Warwick J.; Sachs, Jeffrey D. **AA** Harvard University. **SR** National Bureau of Economic Research Working Paper: 2024; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 430, 023, 423. **KW** Alternative Exchange Arrangement. International Rules. Target Zone System.

AB The volatility of the world economy since the breakdown of the Bretton Woods par value system of exchange rates has led many policymakers and economists to call for reform of the international monetary system. Many critics of the current "non-system" call for tighter international rules of the game in macroeconomic policy making. The proposed systems cover a wide spectrum of measures including maintaining the current flexible exchange rate system but with increased consultations between the major economies; a "target zone" system as advocated by John Williamson; or a full return to a system of fixed exchange rates as advocated by Ronald McKinnon. This paper presents and applies a methodology useful for studying the operating characteristics of a number of alternative monetary arrangements using a large-scale simulation model of the world economy. We consider the performance of the regimes when policymakers do or do not observe the shocks, and when policymakers infer the shocks using an optimal filtering rule. Although the results are model specific and at best illustrative of the issues involved, the approach does have the advantage of providing a richer framework of analysis than is possible in simple models of international interdependence.

Mertens, Jean Francois

PD September 1986. **TI** Repeated Games. **AA** CORE, Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 8624; Centre for Operations Research and Econometrics, Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 68. **PR** No Charge. **JE** 026. **KW** Repeated Games. Time Invariance. Stochastic Games. Perfect Information.

AB Repeated games are a very general model for games that have a time-invariant description. In part A, we describe the economic origins and motivations of the problem. Part B contains a quick guide to (part of) the literature. In part C, we first give a very simple combinatorial normal form for those problems, next obtain the basic recursive structure - a reduction to stochastic games with perfect information - and show some of its implications.

Merton, Robert C.

TI Dividend Behavior for the Aggregate Stock Market. **AU** Marsh, Terry A.; Merton, Robert C.

Metcalf, David

PD October 1986. **TI** Labour Market Flexibility and Jobs: A Survey of Evidence From OECD Countries With Special Reference to Great Britain and Europe. **AA** London School of Economics, Centre for Labour Economics London School of Economics, Industrial Relations Department. **SR** London School of Economics Centre for Labour Economics Discussion Paper: 254; Centre for Labour Economics, London School of Economics, Houghton Street, London, WC2A 2AE, U.K. **PG** 40. **PR** No Charge. **JE** 824, 122. **KW** Labour Market. Flexibility. Europe. Unemployment. Employment Subsidies.

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AB Labour market rigidities in Europe at the level of the economy, the sector and the firm are analysed. While such rigidities are not trivial they are unlikely to account for all of the rise in unemployment in Europe in the last decade. The evidence suggests: (i) European unemployment is currently above the level necessary to keep inflation constant; (ii) corporatism, consenses and a superior macroeconomic performance go hand-in-hand; (iii) there is a strong case for state intervention via employment subsidies and state finance of training to make the unskilled labour market more adaptable; (iv) it is impossible to generalise about the impact of employment protection legislation on jobs.

Miller, Daniel S.

TI The Rand Health Insurance Study: A Critique. **AU** Welch, Bruce L.; Hay, Joel W.; Miller, Daniel S.; Olsen, Randall J.; Rippey, Robert M.; Welch, Annemarie S.

Mishkin, Frederic S.

PD May 1986. **TI** U.S. Macroeconomic Policy and Performance in the 1980s: An Overview. **AA** Graduate School of Business, Columbia University. **SR** National Bureau of Economic Research Working Paper: 1929; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 33. **PR** $2.00. **JE** 133, 131, 132, 122. **KW** Macroeconomic Policy. United States. Macro Policy. Economic Performance.

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

Monfort, A.

TI Kullback Causality Measures. **AU** Gourieroux, C.; Monfort, A.; Renault, E.

Moore, Geoffrey H.

PD November 1986. **TI** Forecasting Recessions Under the Gramm-Rudman-Hollings Law. **AU** Moore, Geoffrey H.; Zarnowitz, Victor. **AA** Moore: Columbia University. Zarnowitz: University of Chicago. **SR** National Bureau of Economic Research Working Paper: 2066; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 322, 131, 132, 133, 321, 323. **KW** Gramm-Rudman-Hollings Law. Recession. Forecasting. Deficit Reduction. Business Cycles.

AB The targeted deficit reductions of the Gramm-Rudman-Hollings (GRH) law are to be temporarily suspended in case of an official determination that real economic growth either (a) has been less than one percent in the two most recent reported quarters, or (b) is projected to be less than zero in any two consecutive quarters out the next six. This amounts to a particular definition of recession. But business cycles are best identified by the consensus of movements in the principal economic aggregates. Not all recessions are associated with real GNP declining or growing less than 1 per cent for two successive quarters. Also, GNP estimates are subject to long sequences of revisions that are often large. We show that, for these reasons, conditioning a suspension of deficit cuts upon specific changes in preliminary data for real GNP involves very long lags in recognizing recessions. The recessions would be largely over before they were identified. We also show that forecasts of real GNP, based on the consensus among groups of professional forecasters, can reduce these lags considerably. This is so despite the fact that early and accurate predictions of business cycle peaks are rare, and false warnings occur.

Moore, John

TI Incomplete Contracts and Renegotiation. **AU** Hart, Oliver; Moore, John.

Moore, John Desmond

PD March 1986. **TI** Developments In Commonwealth-State Financial Relations. **AA** Commonwealth Treasury. **SR** Australian National University Centre for Federal Financial Relations Occasional Paper: 73; Centre for Federal Financial Relations, Copland Building, The Australian National University, Canberra, ACT 2601, Australia. **PG** 43. **PR** No Charge. **JE** 325, 324. **KW** Tax Powers. Vertical Imbalance. State Borrowings Fiscal Equalisation.

AB The existence of a major vertical imbalance in the Australian Federation gives a misleading impression that the central government is dominant and that the regional governments are constrained in independent decision making and responsible government. The States have the capacity to raise or lower taxes, to borrow, and to determine their own expenditure priorities. However, Commonwealth specific purpose assistance often provides little or no economic benefits and could be reduced. On the other hand Commonwealth macro-economic management powers should be maintained, if not increased, in relation to the State sector.

Morck, Randall

PD October 1986. **TI** Management Ownership and Corporate Performance: An Empirical Analysis. **AU** Morck, Randall; Shleifer, Andrei; Vishny, Robert. **AA** Morck: University of Alberta. Shleifer: Princeton University. Vishny: University of Chicago. **SR** National Bureau of Economic Research Working Paper: 2055; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 511, 512, 513. **KW** Management Ownership. Corporate Performance. Tobin's Q.

AB We investigate the relation between management ownership and corporate performance, as measured by Tobin's Q. In a cross-section of Fortune 500 firms, Tobin's Q first increases and then declines as board of directors holdings rise. For older firms there is weak evidence that Q is lower when a firm is run by a member of the founding family than when it is run by an officer unrelated to the founder.

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Moreaux, Michel

PD July 1986. **TI** Cooperation in Finitely Repeated Non-Cooperative Games. **AU** Moreaux, Michel; Ponssard, Jean Pierre; Rey, Patrick. **AA** Moreaux: GREMAQ. Ponssard: ENSAE. Rey: INSEE. **SR** Unite de Recherche Document de Travail ENSAE/INSEE: 8609; INSEE, Unite de Recherche, 18 Bd. Adolphe Pinard, 75675 Paris cedex 14, FRANCE. **PG** 23. **PR** No Charge. **JE** 026, 022, 611. **KW** Non-Cooperative Games. Cooperation. Repeated Games. Spatial Collusion.

AB This paper is concerned with eliciting cooperative behavior in two persons finitely repeated non-cooperative games. It is argued that whenever there are three equilibria such that the Players' preferences are in reversed order then, under some conditions, cooperation may be initiated and recursively maintained. This is discussed by means of examples, with an application to spatial collusion.

Morgan, Ieuan G.

TI Tests of the Martingale Hypothesis for Foreign Currency Futures With Time-Varying Volatility. **AU** McCurdy, Thomas H.; Morgan, Ieuan G.

Morrison, Catherine J.

TI Export Supply and Import Demand Functions: A Production Theory Approach. **AU** Diewert, Erwin W.; Morrison, Catherine J.

Muller, Brockhaus Gerd

PD April 1985. **TI** The Kullback-Leibler Information Criterion as a Construction Principle. **AA** Univesity of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: B-9; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 14. **PR** No Charge. **JE** 211. **KW** Parametric Tests. Nonparametric Tests. Likelihood Ratio Test. Hypothesis Testing. KLIC. Kullback-Liebler Information Criterion.

AB The Kullback-Leibler (1951) information criterion (KLIC) is suggested as a construction principle for both parametric and nonparametric tests. This is demonstrated for the likelihood ratio test and the Pearson goodness of fit test. The possibilities of constructing tests in this framework can be regarded as a basis for a unified theory of tests.

Muto, Shigeo

PD July 1986. **TI** Measure-Based Asymptotic Values of a Class of Compound Voting Games. **AA** Centre for Operations Research and Econometrics, Universite Catholique de Louvain and Tohoku University. **SR** Universite Catholique de Louvain CORE Discussion Paper: 8622; Centre for Operations Research and Econometrics, Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 23. **PR** No Charge. **JE** 026, 025. **KW** Voting Games. Measure-Based Asymptotic Value. Shapley-Shubik Index.

AB We study the measure-based asymptotic value (the mu-asymptotic value) in a class of compound voting games. We obtain its formula, and further show that several properties of the Shapley-Shubik index in representative systems with large population are derived from this formula.

PD July 1986. **TI** Limit Properties of Power Indices In A Class of Representative Systems. **AA** Centre for Operations Research and Econometrics, Universite Catholique de Louvain and Tohoku University. **SR** Universite Catholique de Louvain CORE Discussion Paper: 8621; Centre for Operations Research and Econometrics, Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 30. **PR** No Charge. **JE** 026, 025. **KW** Representative Systems. Voting Games. Shapley-Shubik Index. Banzhaf Index.

AB We study, in a class of representative systems, the limit properties of the Shapley-Shubik and the Banzhaf indices as the number of voters goes to infinity. We mainly consider the following system: 1) The representatives elected in each electoral district proportionally represent the voters' opinion; and 2) the total number of representatives is odd and a decision is made by the elected representatives according to the simple majority rule. Principal findings include the following: 1) The voters in districts with even numbers of representatives are powerless; and 2) the power is distributed among the voters in districts with odd representatives in the following manner: For each of such districts, its aggregate power is given according to an (l - 1)-dimensional (l is the number of districts with odd representatives) normal distribution with mean vector 0 and covariance matrix determined by the proportions of the population in such districts in terms of the Shapley-Shubik index; and is proportional to the square root of its population in terms of the Banzhaf index. Extension of these results to more general representative systems are also examined.

Nadiri, M. Ishaq

TI Research and Development and Intraindustry Spillovers: An Empirical Application of Dynamic Duality. **AU** Bernstein, Jeffrey I.; Nadiri, M. Ishaq.

PD September 1986. **TI** Price Inertia and Inflation: Evidence and Theoretical Rationale. **AA** National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2022; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 134, 227, 311, 321. **KW** Price Inertia. Inflation.

AB In this paper we look at some empirical evidence of and theoretical rationale for price inflexibility in the face of a decrease in short run demand in the Western-type industrialized economies. The empirical evidence suggests that price sluggishness is pervasive but varies across markets, industries and countries. There are different reasons for the price inertia. The response of firms to uncertainty, the cost of adjusting prices, the contents of the long-term contracts in the goods and input markets, the extent and variability of excess demand may differ among firms and industries. The structure of the industry, the degree of heterogeneity of the products in a market, the network of input-output relationship among industries, the nature of international competition, the process of forming expectations about the future, shocks from

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monetary and fiscal policies and input price shocks, all interact and create the ever changing environment of the firms. In these changing circumstances there are incentives for prices to be sluggish and thus arises the dilemma of achieving price stability at a high cost of unemployment. The ability of governments to achieve stable prices is probably endogenous in the system and may depend on a threshhold rate of inflation. A number of policy options are discussed to address the issue of price inertia which would reduce the adjustment burden of anti-inflationary policies.

Nerlove, Marc

PD November 1986. **TI** Population Policy and Independent Choice. **AU** Nerlove, Marc; Razin, Assaf; Sadka, Efraim. **AA** Nerlove: University of Pennsylvania and International Food Policy Research Institute. Razin: Department of Economics, Tel-Aviv University. Sadka: Department of Economics, Tel-Aviv University. **SR** Tel Aviv Foerder Institute for Economic Research Working Paper: 44-86; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, Israel. **PG** 62. **PR** No Charge. **JE** 851, 841, 321, 521, 541. **KW** Population Policy. Intergenerational Transfers. General Equilibrium. Endogenous Fertility.

AB In this essay we explore systematically the general equilibrium implications of endogenous fertility for some of the social issues of population policy, including the optimal level or rate of growth of population, real and false externalities, and issues of inter- and intragenerational income distribution. Endogenous fertility simply means that parents care about the numbers and welfare of their children and respond to economic constraints and opportunities in their choices affecting their children and/or that parents bear children as a provision for old age security. It is remarkable that this simple and obvious concept has such far reaching and significant normative implications. What is even more remarkable, however, is that the idea that parents care about their children does not seem to have found any place in the current ethical and philosophical debates about optimal population.

Newell, Andrew

TI Wages and Employment Between the Wars. **AU** Symons, James S. V.; Newell, Andrew.

Newey, Whitney

TI Efficient Estimation and Identification of Simultaneous Equation Models With Covariance Restrictions. **AU** Hausman, Jerry A.; Newey, Whitney; Taylor, William.

PD July 1986. **TI** A Simple, Positive Semi-Definite, Heteroskedasticity and Autocorrelation Consistent Covariance Matrix. **AU** Newey, Whitney K.; West, Kenneth D. **AA** Princeton University. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-28; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 12. **PR** No Charge. **JE** 211. **KW** Covariance Matrix. Heteroskedasticity. Autocorrelation. Consistency.

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

Newman, Peter

PD November 1986. **TI** Francis Ysidro Edgeworth 1845-1926. **AA** The Johns Hopkins University. **SR** Johns Hopkins Department of Political Economy Working Paper: 180; Department of Political Economy, Johns Hopkins University, Baltimore MD 21218. **PG** 77. **PR** No Charge. **JE** 031. **KW** Edgeworth. Economic Thought.

AB This paper presents a biography of Francis Ysidro Edgeworth and a survey of his work.

PD December 1986. **TI** Three Biographical Essays on Frank Plumpton Ramsey (1903-1930), George Bernard Shaw(1856-1950) and Allyn Abbot Young(1876-1929). **AA** The Johns Hopkins University. **SR** Johns Hopkins Department of Political Economy Working Paper: 181; Department of Political Economy, Johns Hopkins University, Baltimore MD 21218. **PG** 46. **PR** No Charge. **JE** 031. **KW** Ramsey. Shaw. Young. Economic Thought.

AB This paper consists of three biographical essays on Frank Plumpton Ramsey, George Bernard Shaw and Allyn Abbot Young.

Nickell, Stephen J.

TI The Performance of The British Labour Market. **AU** Layard, Richard; Nickell, Stephen J.

PD September 1986. **TI** Why Is Wage Inflation In Britain So High? **AA** Institute of Economics and Statistics. **SR** Oxford Applied Economics Discussion Paper: 15; Institute of Economics and Statistics, Saint Cross Building, Manor Road, Oxford OX1 3UL, ENGLAND. **PG** 41. **PR** No Charge. **JE** 134, 824. **KW** Wage Inflation. Unemployment. Labor Market Slack.

AB This paper investigates the role of labour market slack in reducing wage pressure and hence the rate of inflation. One of the present puzzles in the British economy is the fact that wage inflation is relatively stable despite the unprecedented levels of unemployment. This could arise for a variety of reasons. Wages may be set by "insiders", little attention being paid to the state of the market. Alternatively the level of unemployment may give a distorted picture of the degree of labour market slack because of compositional effects. The hypothesis which appears to be most consistent with the data is that the duration composition of the unemployed strongly influences the inflation reducing power of unemployment. In particular, the higher the proportion of long term unemployed in the stock, the weaker is the downward pressure on wages exerted by any given level of unemployment. The paper presents the evidence for this view and describes its implications for the present state of the labour market.

PD November 1986. **TI** The Real Wage - Employment Relationship in the United States. **AU** Nickell, Stephen J.; Symons, James S. V. **AA** Nickell: Institute of Economics and Statistics, University of Oxford. Symons: Department of Economics, University College London. **SR** London School of Economics Centre for Labour Economics Discussion Paper:

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264; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, U.K. **PG** 22. **PR** No Charge. **JE** 824, 131, 122, 023. **KW** Real Wages. Employment. United States.

AB This paper demonstrates that, contrary to much received wisdom, it is straightforward to detect a negative time series relationship between real wages and employment in the United States, both in manufacturing and at the aggregate level. It is also demonstrated that if an incorrect specification of the real wage is used, then no relationship will be found. Since nearly all past empirical analyses of this question specified the real wage incorrectly, the plethora of negative findings is quite simply explained.

Nicol, Christopher J.

PD September 30, 1986. **TI** Testing a Theory of Exact Aggregation. **AA** University of Regina and Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 662; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 29 pp. **PR** $2.50 Canada; $3.00 United States; $3.50 foreign. **JE** 212, 921, 841, 022. **KW** Exact Aggregation. Translog. Aggregate Consumer Behavior. Demographic Characteristics.

AB The purpose of this paper is to assess the importance of exact aggregation restrictions in the context of Jorgenson, Lau and Stoker's (1982) model of aggregate consumer behaviour, and also to analyse their treatment of demographic variables. We find that the form of exact aggregation restrictions employed are strongly rejected by the data, and stratification of observations by demographic characteristics is a superior modelling strategy. Estimated income elasticities differ substantially under alternative sets of aggregation and demographic variable restrictions. These results suggest that models of aggregate consumer behaviour be constructed without imposing exact aggregation restrictions, and using a more general treatment of demographic effects.

Obstfeld, Maurice

PD November 1986. **TI** International Finance. **AA** University of Pennsylvania. **SR** National Bureau of Economic Research Working Paper: 2077; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 430, 440. **KW** International Finance. External Balance. Capital Mobility. Intertemporal Budget Constraint.

AB This essay, written for The New Palgrave dictionary of economics, provides a selective and interpretive account of the development of thought on international financial questions. Attention is focused on the process of international adjustment and on the proper definition of external balance. Since the first descriptions of the price-specie-flow mechanism in Hume's time, the definition of external balance has evolved in response to changes in the world economy's structure. The foreign reserve constraint so central under the gold standard or in the early Bretton Woods years is less important under conditions of high international capital mobility. Increasingly, the current account and the national intertemporal budget constraint are emphasised in discussions of international adjustment. In analogy with the idea of a high-employment government budget surplus, a working definition of external balance might be a current account that maintains the highest possible steady consumption level consistent with the economy's expected intertemporal budget constraint. Intertemporal approaches to external balance become more difficult to apply when countries face credit rationing as a result of nonrepayment risk.

PD November 1986. **TI** How Integrated are World Capital Markets? Some New Tests. **AA** University of Pennsylvania. **SR** National Bureau of Economic Research Working Paper: 2075; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 441, 423, 313, 432, 443. **KW** World Capital Markets. Capital Market Integration.

AB This paper presents some new empirical evidence on the extent of world capital-market integration. The first set of tests carried out uses data from different countries to compare internationally expected marginal rates of substitution between consumption on different dates. If residents of different countries have access to a nominally risk-free bond denominated in dollars, say, their common expected marginal rate of substitution of future for present dollars should equal the gross nominal return on dollar bonds. Tests of the international equality of expected marginal substitution rates yield evidence consistent with a substantial degree of international capital-market integration after, but not before, 1973. These tests are naturally based on a particular model of intertemporal consumption choice, but direct estimation of the inter-country relationships implied by that model lends support to its assumptions. These last findings are relevant to the current debate in macroeconomics about the role of intertemporal substitution. The second set of tests conducted in this paper concerns correlations between countries' saving and investment rates. For a sample of ten countries, correlations between annual changes in saving and investment rates over the period 1948-1984 look quite similar to those those found in quarterly data. Surprisingly, however, the correlation coefficients are often lower before the mid-1960s than afterward. This finding throws further doubt on the interpretation of saving-investment correlation coefficients as structural parameters reflecting the response of domestic investment to shifts in national saving.

Okuguchi, Koji

PD October 1986. **TI** Dynamics of the Cournot Oligopoly with Multi-Product Firms. **AU** Okuguchi, Koji; Szidarovszky, Ferenc. **AA** Okuguchi: University of Tokyo. Szidarovszky: University of Budapest. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-78; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 14. **PR** No Charge. **JE** 611, 022. **KW** Game Theory. Cournot Equilibrium. Multi-Product Firms. Adjustment Process. Oligopoly.

AB The stability of the Cournot equilibrium for a linear oligopoly with multi-product firms is analyzed both for continuous and discrete systems for output adjustments. The equilibrium is shown to be stable for the continuous system independently of the values of the adjustment coefficients. It is, however, stable only in duopoly when the discrete system is considered.

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Olsen, Randall J.

TI The Rand Health Insurance Study: A Critique. **AU** Welch, Bruce L.; Hay, Joel W.; Miller, Daniel S.; Olsen, Randall J.; Rippey, Robert M.; Welch, Annemarie S.

TI The Rand Health Insurance Study: A Critique. **AU** Welch, Bruce L.; Hay, Joel W.; Miller, Daniel S.; Olsen, Randall J.; Rippey, Robert M.; Welch, Annemarie S.

Ordeshook, Peter C.

PD October 1986. **TI** Agendas, Strategic Voting, and Signaling with Incomplete Information. **AU** Ordeshook, Peter C.; Palfrey, Thomas R. **AA** Ordeshook: University of Texas at Austin. Palfrey: California Institute of Technology. **SR** Caltech Social Science Working Paper: 618; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 43. **PR** No Charge. **JE** 026, 025. **KW** Voting. Agendas. Game Theory. Private Information.

AB The literature on agendas with sincere and strategic voting represents an important contribution to our understanding of committees, of institutions, and of the opportunities to manipulate outcomes by the manipulation of institutions. That literature, though, imposes an assumption that may be unrealistic in many situations; namely, that everyone knows the preferences of everyone else. In this essay we apply Bayesian equilibrium analysis to show that the properties of agendas that others derive assuming complete information do not hold necessarily under incomplete information. First, a Condorcet winner need not be selected, even if nearly everyone on the committee most prefers it. Second, the "2 step theorem," that any outcome reachable in a voting stages via some amendment agenda is reachable in two stages under sophisticated voting, need not hold. Third, nonbinding votes such as straw polls, can critically affect final outcomes.

Ostroy, Joseph M.

TI Dominant Strategy Mechanisms in Nonatomic Transferable Utility Economies: Characterization and Existence. **AU** Makowski, Louis; Ostroy, Joseph M.

Oswald, Andrew J.

TI Profit-Sharing - Can It Work? **AU** Blanchflower, David G.; Oswald, Andrew J.

TI Wage Inflexibility in Britain. **AU** Carruth, Alan A.; Oswald, Andrew J.

TI On Union Preferences and Labour Market Models: Insiders and Outsiders. **AU** Carruth, Alan A.; Oswald, Andrew J.

PD November 1986. **TI** A Theory of Non-Contingent Wage Contracts. **AA** Centre for Labour Economics, London School of Economics. **SR** London School of Economics Centre for Labour Economics Discussion Paper: 266; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, U.K. **PG** 35. **PR** No Charge. **JE** 821, 831, 832, 824. **KW** Labor Contracts. Wage Contracts. Assymetric Information. Wage Stickiness.

AB Labour contract theory predicts wage rates which are 'state-contingent' (tied to variables such as the firm's product price, profits, employment and the consumer price index). In reality, however, wage contracts are much simpler. The wage rate is normally fixed in advance; it is a number rather than a function. This is the famous puzzle of 'nominal wage stickiness'. The paper attempts to explain this and to develop models which fit the stylized facts. Its key assumption is that workers are not well enough informed about their employer to be able to form probability distributions of their firm's product price and profit. This is an assumption of asymmetric probability information. However, the paper assumes that, perhaps by using public forecasts, both firm and worker can decide upon probability distributions of the consumer price index. The optimal wage contract turns out to be one in which the wage rate is not contingent on the firm's performance and may or may not be contingent upon the consumer price index.

TI Testing for Multiple Natural Rates of Unemployment in the British Economy: A Preliminary Investigation. **AU** Carruth, Alan A.; Oswald, Andrew J.

PD November 1986. **TI** New Research on the Economics of Trade Unions and Labour Contracts. **AA** Centre for Labour Economics, London School of Economics. **SR** London School of Economics Centre for Labour Economics Discussion Paper: 261; Centre for Labour Economics, London School of Economics, Houghton Street, London, WC2A 2AE, U.K. **PG** 34. **PR** No Charge. **JE** 830. **KW** Unions. Labor Contracts. Industrial Relations.

AB The paper presents an informal summary and partial bibliography of recent work on the microeconomics of trade unions and labour contracts. There has been a remarkable growth of new research in the field, but many economists know little about the parallel industrial relations literature, and some of the latest theoretical models do not fit the stylised facts terribly well.

TI A Dynamic Model of Trade Union Behaviour. **AU** Kidd, David P.; Oswald, Andrew J.

Otani, Kiyoshi

PD February 1986. **TI** Seniority Rationing and Unemployment. **AA** Tokyo Keisai University. **SR** massachusetts Institute of Technology Department of Economics Working Paper: 425; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 44. **PR** No Charge. **JE** 023, 821, 811, 131. **KW** Unemployment. Seniority. Wages. Rationing.

AB This paper lays a foundation of macroeconomic theories in that it explains why unemployed workers fail to exercise downward pressure on wages sufficiently to eliminate unemployment. It shows rationing of (un)employment by seniority effectively contains the downward pressure. Seniority, guaranteeing to current junior workers future employment and so future income at their present firm, gives rise to a high reservation wage for starting to work for other firms. Then, it is not in the interest of unemployed workers to put downward pressure on wages in an effort to be employed by other firms. They simply stay unemployed.

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PD June 1986. **TI** A Collapse of the Fixed Rate Regime With a Discrete Alignment of the Exchange Rate. **AA** Tokyo Keisai University. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 426; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 34. **PR** No Charge. **JE** 431, 432, 311. **KW** Exchange Rates. Monetary Authority. Reserves. Uncertainty.

AB A collapse of a fixed exchange rate regime is often characterised by the monetary authorities' loss of reserves in an astronomical rate and a discrete exchange rate alignment. The existing literature explains the former, but not the latter. This paper advances a mechanism of a collapse that explains the both. Uncertainty over the monetary authorities' decision on abandoning the fixed rate gives the exchange market intervention an unstable nature which ultimately manifests itself in a collapse with a loss of reserves in an astronomical rate. The uncertainty permits a discrete alignment by keeping arbitrage from equating the pre- and post-collapse exchange rate.

Pagan, Adrian

PD July 1986. **TI** The Econometric Analysis of Models With Risk Terms. **AU** Pagan, Adrian; Ullah, Aman. **AA** Pagan: University of Rochester. Ullah: University of Western Ontario. **SR** Centre for Economic Policy Research Discussion Paper: 127; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. **PG** 35. **PR** 1 pound ($2.00) individuals; 1.50 pounds ($3.00) companies, libraries, institutions. **JE** 211, 131, 212, 313, 431. **KW** Risk. Instrumental Variables. Errors-in-Variables. ARCH. Exchange Rates. Interest Rates.

AB This paper provides a critical survey of the methods employed to model the effects of risk in econometric models. Most of the popular methods are shown to suffer from errors-in-variables bias, and an instrumental variable method is suggested to overcome this problem. The technique exploits the orthogonality conditions existing between the squared unanticipated variables and functions of variables making up the information set defining the anticipations. An alternative procedure used in the paper is to directly estimate the conditional variance (risk) by non-parametric estimators. Applications are made to foreign exchange markets, interest rates and unemployment/inflation risk relations.

Pakes, Ariel

TI The Value of Patents as Indicators of Inventive Activity. **AU** Griliches, Zvi; Pakes, Ariel; Hall, Bronwyn H.

Palfrey, Thomas R.

TI On Bayesian Implementable Allocations. **AU** Srivastava, Sanjay; Palfrey, Thomas R.

TI Agendas, Strategic Voting, and Signaling with Incomplete Information. **AU** Ordeshook, Peter C.; Palfrey, Thomas R.

TI Cartel Enforcement with Uncertainty about Costs. **AU** Cramton, Peter C.; Palfrey, Thomas R.

Patel, Jayendu

PD November 1986. **TI** The Fisher Hypothesis and Real Returns. **AA** John F. Kennedy School of Government, Harvard University. **SR** Harvard John F. Kennedy School of Government Discussion Paper: 155D; John F. Kennedy School of Government, 79 John F. Kennedy Street, Harvard University, Cambridge, MA 02138. **PG** 65. **PR** No Charge. **JE** 134, 313, 311. **KW** Fisher Hypothesis. Cointegration Tests. Real Return Process.

AB We provide new tests of the Fisher Hypothesis using Treasury Bill yields from the United States of America, United Kingdom, and Canada in the 1953-83 period. The mean nonstationary behavior of inflation and interest rates creates severe problems for tests in the traditional framework which assume stationarity. We both correct previous inconsistent tests and exploit the mean nonstationarity to relax assumptions on the process of unobserved ex-ante real interest rates. Our use of the cointegration framework of Granger (1983) also enables us to study the Fisher Hypothesis as possibly a relation which only holds in the long run. Our tests support the conjecture that Treasury Bill yield variations are driven by variations in inflationary expectations. Our best estimate of the interest rate-inflation covariation in the 1953-83 period is that it is one-for-one. We find that the ex-ante real rate in Treasury Bills is stationary with small innovations -- approximately a constant within regimes though shifting across three identified regimes.

Peled, Dan

PD October 1986. **TI** Capital Accumulation and Annuities in an Adverse Selection Economy. **AU** Peled, Dan; Eichenbaum, Martin S. **AA** Carnegie-Mellon University. **SR** National Bureau of Economic Research Working Paper: 2046; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 026, 021. **KW** Adverse Selection. Private Capital Accumulation. Annuity Markets.

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.

Persson, Torsten

TI Laws as Assets: A Possible Solution to the Time Consistency Problem. **AU** Kotlikoff, Laurence J.; Persson, Torsten; Svensson, Lars E. O.

Peters, Wolfgang

PD 1986. **TI** Cost Inefficiency and Second Best Pricing. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-47; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, Deutschland. **PG** 14. **PR** No Charge. **JE** 024, 614. **KW** Welfare Maximization. Cost Inefficiency Public Production. Second

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Best Pricing.
AB It is a well-known and widespread opinion that public production in reality is neither cost nor production efficient, i.e. the commodities are not produced at minimum costs, and, additionally, that the realized production plan will lie below the production possibility frontier. Such an initial situation is always perceived as suboptimal, and therefore most politicians believe in the necessity of cost efficient public production for a welfare optimum. But the reason for production efficiency is that welfare maximization contradicts any kind of waste. As this paper will show, advising the management of public enterprises to produce at minimum costs, leads to welfare losses. We shall see that, in general, second best pricing requires cost inefficient public production, and cost minimizing factor usage is guaranteed to be welfare optimal in special cases alone. This is a counter-intuitive result and should therefore be extensively explained. But the question, how to run the public sector, should not be answered under the aspect of cost inefficiency only. Hence, it is an important task to find practicable rules to advise the management of a public enterprise which take care of the remarkable effects presented in the paper.

Peterson, Bruce C.

TI Business Cycles and Oligopoly Supergames: Some Empirical Evidence on Prices and Margins. **AU** Domowitz, Ian; Hubbard, R. Glenn; Peterson, Bruce C.

Pfleiderer, Paul

TI Direct and Indirect Sale of Information. **AU** Admati, Anat R.; Pfleiderer, Paul.

Pines, David

TI Productivity Shocks and Home Asset Preference. **AU** Eldor, Rafael; Pines, David; Schwartz, Abba.

Pitt, Mark M.

TI Specification and Estimation of Consumer Demand Systems With Many Binding Non-Negativity Constraints. **AU** Lee, Lung Fei; Pitt, Mark M.

Pochet, Yves

PD March 1986. **TI** Lot-Size Models With Backlogging: Strong Reformations and Cutting Planes. **AU** Pochet, Yves; Wolsey, Laurence A. **AA** Centre for Operations Research and Econometrics, Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 8618; Centre for Operations Research and Econometrics, Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 22. **PR** No Charge. **JE** 213, 511, 512. **KW** Backlogging. Lot-Size Model. Production Planning. Integer Programming. Network Flow Problems.
AB We examine mixed integer programming reformulations of the uncapacitated lot-sizing problem with backlogging. First we consider the effect of using a standard reformulation technique for fixed charge network flow problems which involves the introduction of new variables, leading to a known plant location reformulation and a shortest path reformulation. Each of these reformulations is strong in the sense that its linear programming relaxation solves the lot-sizing problem. Secondly we attempt to treat the problem in the space of the original variables. We give an implicit description of the convex hull of solutions, and show how the problem of finding a violated cutting plane can be solved as a linear program. We also describe a family of strong valid inequalities which can be generated rapidly by a heuristic and which have proved effective in a cut generation algorithm. The efficacy of both the shortest path formulation and the cutting plane algorithm have been tested on a series of multi-item capacitated lot-sizing problems with backlogging. Near optimal solutions have been found to problems with 8 periods and up to 100 items.

Ponssard, Jean Pierre

TI Cooperation in Finitely Repeated Non-Cooperative Games. **AU** Moreaux, Michel; Ponssard, Jean Pierre; Rey, Patrick.

Portes, Richard

PD March 1986. **TI** The Theory and Measurement of Macroeconomic Disequilibrium in Centrally Planned Economies. **AA** Birkbeck College. **SR** National Bureau of Economic Research Working Paper: 1875; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 023, 052. **KW** Macroeconomic Disequilibrium. Centrally Planned Economies. Quantity-Rationing Macro Model. Aggregative Approach. 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 August 1985. **TI** How Burdensome Are Capital Gains Taxes? **AA** Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 410; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 33. **PR** No Charge. **JE** 323. **KW** Capital Gains Taxes. Offsetting Losses. After-Tax Return.
AB Several recent and provocative studies have described portfolio trading strategies which permit investors to avoid all taxes on capital gains and to shelter a substantial part of their ordinary income as well. Other studies adopt the

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more traditional view that the capital gains tax raises the effective tax burden on capital income. This paper uses capital gain realization data from the 1982 IRS Individual Tax Model in an effort to distinguish between these views. It shows that for about one-fifth of the investors who realize gains or losses, the ordinary income loss-offset limitations are binding constraints. Since additional gain realizations do not affect these investors' current tax liability, they may be effectively untaxed on capital gains. Another significant group escapes taxation by not reporting realized gains. However, the largest group of investors trades in a less elaborate and more honest manner, realizing and reporting gains without offsetting losses. The capital gains tax may reduce the after-tax return earned by these investors.

PD January 1986. **TI** *Money in the Utility Function:* An Empirical Implementation. **AU** Poterba, James M.; Rotemberg, Julio J. **AA** Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 408; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 28. **PR** No Charge. **JE** 311, 134. **KW** Interest Rates. Welfare Cost of Inflation. Interest Elasticities of Demand. Household Asset Demands.

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.

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

PD June 1986. **TI** Finite Lifetimes and the Crowding Out Effects of Government Deficits. **AU** Poterba, James M.; Summers, Lawrence H. **AA** Poterba: Massachusetts Institute of Technology. Summers: Harvard University. **SR** National Bureau of Economic Research Working Paper: 1955; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 320, 023, 921. **KW** Crowding Out. Government Deficits. Finite Lifetimes. Short-Run Savings Effects. Lifecycle Simulation.

AB This note explores the sensitivity of the short-run savings effects of government deficits to assumptions about household planning horizons. Using a lifecycle simulation model, we show that even though deficit policies shift sizable tax burdens to future generations, individuals live long enough to make the assumption of an infinite horizon a good approximation for analyzing the short-run savings effects. In practice, periods of debt accumulation such as that in the United States during World War II are reversed sufficiently rapidly to make their short-run effects on consumption and national savings relatively small.

Powell, James L.

PD January 1985. **TI** Symmetrically Trimmed Least Squares Estimation For Tobit Models. **AA** Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 356; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 51. **PR** No Charge. **JE** 211. **KW** Symmetrically Trimmed Least Squares Estimation. Tobit Models. Truncation. Symmetric Censoring.

AB This paper proposes alternatives to maximum likelihood estimation of the censored and truncated regression models (known to economists as "Tobit" models). The proposed estimators are based on symmetric censoring or truncation of the upper tail of the distribution of the dependent variable. Unlike methods based on the assumption of identically distributed Gaussian errors, the estimators are consistent and asymptotically normal for a wide class of error distributions and for heteroscedasticity of unknown form. The paper gives the regularity conditions and proofs of these large sample results, demonstrates how to construct consistent estimators of the asymptotic covariance matrices, and presents the results of a simulation study for the censored case. Extensions and limitations of the approach are also considered.

Prachowny, Martin F. J.

PD October 1986. **TI** Who are the Volunteers in the Battle Against Budget Deficits? **AA** Department of Economics, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 664; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 28 pages. **PR** $2.50 Canada; $3.00 United States; $3.50 foreign. **JE** 322, 025. **KW** Budget Deficits. Public Choice Decisions. Public Goods. Economic Interests. Government Contracts. Self-Interest.

AB Individuals differ in the net benefits that they receive from government activity depending on their taste for public goods, on the taxes that they pay, and on government demand for goods produced by specific factors that they own. Concentrating on ownership of specific factors as the major source of heterogeneity of the population, it is argued that deficit reduction will be decided on the basis of special economic interests rather than on wider macroeconomic issues. This study attempts to quantify the public-choice decision concerning a reduction in government expenditures which, in full equilibrium, would "crowd in" an equal amount of investment expenditures. Using the 1977 United States input-output tables, each of the 85 industries is identified as a potential net gainer or loser of output as variable factors are reallocated in the wake of an assumed 10 per cent reduction in federal government expenditures on goods and services (i.e. $14.3 billion). At one extreme is the military hardware industry as the largest loser and at the other extreme is the new construction industry as the largest gainer. The 90.5 million workers in these 85 industries are assumed to have some "attachment" to their current industry and therefore vote for or against deficit reduction on the basis of their self-interest. It is found that the median voter experiences a net loss. Introducing voting costs reinforces this result because losses are more concentrated than gains. The paper ends with an attempt to identify characteristics that lead to high dependence on

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government contracts: they are labor-intensiveness and the wage rate.

Promel, H. J.

PD February 1986. **TI** A Partition Theorem for '0, 1. **AU** Promel, H. J.; Voigt, B. **AA** Promel: University of Bonn. Voigt: University of Bielefeld. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 86412; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, Deutschland. **PG** 5. **PR** No Charge. **JE** 213. **KW** Hindman-Type Partition Theorem. Baire Partitions.

AB We prove a Hindman-type partition theorem for Baire partitions of (0,1).

Quandt, Richard M.

PD November 1986. **TI** Unemployment, Disequilibrium and the Short Run Phillips Curve: Correction and Extension. **AU** Quandt, Richard M.; Rosen, Harvey S. **AA** Princeton University. **SR** Princeton Financial Research Center Memorandum: 72; Financial Research Center, Department of Economics, Princeton University, Princeton, NJ 08544. **PG** 14. **PR** $2.00. **JE** 212, 023, 824. **KW** Disequilibrium. Labor Market. Unemployment. Maximum Likelihood. Phillips Curve.

AB The numerical results in a recent paper on the United States labor market by Quandt and Rosen are corrected. All the qualitative conclusions are confirmed with the single exception that the unemployment insurance variable in labor supply is now statistically significant with a negative coefficient. The model is also extended to test the hypothesis of intertemporal labor supply and the results are found to be compatible with it.

Rausser, Gordon C.

TI Monetary Policy and Relative Farm Prices. **AU** Stamoulis, Kostas G.; Chalfant, James A.; Rausser, Gordon C.

Raut, L. K.

PD October 1986. **TI** Capital Accumulation, Income Distribution and Endogenous Fertility in an Overlapping Generations General Equilibrium Model. **AA** University of Chicago and NORC. **SR** Economics Research Center/NORC Discussion Paper: 86-11; Economics Research Center/NORC, 6030 South Ellis, Chicago, IL 60637. **PG** 34. **PR** $2.00; send requests to Librarian, NORC. **JE** 023, 021, 851, 841, 813, 823. **KW** Overlapping Generations. General Equilibrium. Capital Accumulation. Income Distribution. Fertility. Labor Force.

AB This paper studies the intertemporal relationships among population growth, income distribution, quality composition of the labor force, and household income in an overlapping generations general equilibrium model that aggregates household decisions regarding fertility, savings and investment in human capital of children. Income tax transfer, child taxation, and social security taxation policies that can be used to affect these variables are also analyzed. The model provides a macro alternative to the Beckerian micro models for explaining the inverse household income-child quantity and negative child quality-quantity relationships that are observed in developing countries.

Razin, Assaf

TI Propagation of Shocks in a High-Inflation Economy: Israel, 1980-85. **AU** Leiderman, Leonardo; Razin, Assaf.

TI Consumption and Government-Budget Finance in a High-Deficit Economy. **AU** Leiderman, Leonardo; Razin, Assaf.

TI Population Policy and Independent Choice. **AU** Nerlove, Marc; Razin, Assaf; Sadka, Efraim.

TI Deficits with Distortionary Taxes: International Dimensions. **AU** Frenkel, Jacob A.; Razin, Assaf.

TI Fiscal Policies and Real Exchange Rates in the World Economy. **AU** Frenkel, Jacob A.; Razin, Assaf.

Redish, Angela

TI Why Did The Bank Of Canada Emerge In 1935? **AU** Bordo, Michael D.; Redish, Angela.

TI Why Did the Bank of Canada Emerge in 1935? **AU** Bordo, Michael; Redish, Angela.

Reinganum, Jennifer F.

PD October 21, 1986. **TI** Plea Bargaining and Prosecutorial Discretion. **AA** California Institute of Technology. **SR** Caltech Social Science Working Paper: 616; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 16. **PR** No Charge. **JE** 916, 026. **KW** Plea Bargaining. Sequential Equilibrium. Law. Prosecution.

AB A model of plea bargaining with asymmetric information is presented. The prosecutor's private information consists of the strength of the case, while the defendant's private information is his or her own guilt or innocence. A sequential equilibrium is computed, in which a fraction of cases are dismissed because they are too likely to involve an innocent defendant; in the remaining cases, the prosecutor's offer of a sentence in exchange for a plea of guilty signals the strength of the case. I then ask whether the prosecutor (and society) might be better off if constrained to make the same offer to all defendants, regardless of the strength of the case. It is shown that, depending upon other features of the criminal justice system and upon the preferences of society, either of these regimes may be preferred to the other. In particular, it is possible that unlimited discretion is disadvantageous for the prosecution (since it carries with it the requirement of sequential rationality).

Renault, E.

TI Kullback Causality Measures. **AU** Gourieroux, C.; Monfort, A.; Renault, E.

Rey, Patrick

TI Cooperation in Finitely Repeated Non-Cooperative Games. **AU** Moreaux, Michel; Ponssard, Jean Pierre; Rey, Patrick.

Riordan, Michael H.

TI Equilibrium Price Dynamics for an Experience Good.

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AU Bagwell, Kyle; Riordan, Michael H.

PD October 1986. TI Information, Incentives and Organizational Mode. AU Riordan, Michael H.; Sappington, David E. M. AA Riordan: Stanford University, Hoover Institution. Sappington: Bell Communications Research. SR Stanford Hoover Institute Working Paper in Economics: E-86-65; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. PG 37. PR No Charge. JE 511, 611, 026. KW Organization. Contracts. Information. Incentives.
AB We examine the choice of organizational mode for a two-stage production process wherein cost realizations at each stage are observed only by the producing party. When these costs are positively correlated, the principal prefers to undertake second-stage production herself. When the correlation is negative and sufficiently small, she will prefer that the agent who performs the first stage also perform the second. For large negative correlation, either mode might be preferred. When costs are uncorrelated, the principal is indifferent between modes.

PD October 1986. TI Awarding Monopoly Franchises. AU Riordan, Michael H.; Sappington, David E. M. AA Riordan: Stanford University; National Fellow, Hoover Institution. Sappington: Bell Communications Research. SR Stanford Hoover Institute Working Paper in Economics: E-86-64; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. PG 32. PR No Charge. JE 026, 612, 022, 611. KW Monopoly. Contracts. Bidding Mechanism. Monopoly Franchises.
AB We analyse how to award a monopoly franchise when the objective is to maximize expected consumers' surplus net of transfer payments to the producer. Potential producers initially possess independent private information about uncertain production costs. Only the chosen producer subsequently observes realized production costs. After awarding the franchise to the producer with the lowest expected costs, prices are optimally set above realized marginal cost. These ex post distortions foster more competitive bidding ex ante. The distortions for any bid-cost pair are invariant to the number of bidders (n), though expected distortions and profits decline with n.

TI Cooperation and Punishment Under Repeated Majority Voting. AU Epple, Dennis; Riordan, Michael H.

Rippey, Robert M.

TI The Rand Health Insurance Study: A Critique. AU Welch, Bruce L.; Hay, Joel W.; Miller, Daniel S.; Olsen, Randall J.; Rippey, Robert M.; Welch, Annemarie S.

Roberts, Russell D.

PD August 1986. TI Should Tax Revenue Be Minimized When Financing Public Goods? AA University of Rochester. SR Stanford Hoover Institute Working Paper in Economics: E-86-46; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. PG 18. PR No Charge. JE 322, 323, 324, 024. KW Public Goods. Tax Revenues. Public Finance.
AB Different methods of financing public goods lead to different deficits to be financed by taxation. The usual intuition is that holding the level of the public good constant, it is efficient to use the method that requires the least revenue. Foster and Sonnenschein (1970) showed that in a world of a representative individual, with constant costs of production, and tax revenue funded by a proportional tax on earnings, minimizing the tax rate maximizes welfare as long as leisure is a normal good. This paper extends Foster and Sonnenschein's results to establish the efficiency conditions on the distortion caused by the tax rate when individuals are not identical. When individuals are not identical, it is efficient to minimize the tax rate as long as pre-tax income is decreasing in the tax rate, a condition that cannot be guaranteed by normality of leisure. However, this condition is likely to hold when the change in the tax rate comes from changing the method of finance of the public good.

Robinson, Chris

PD May 1986. TI The Joint Determination of Union Status and Wage Effects: Some Tests of Alternative Models. AA University of Western Ontario. SR University of Western Ontario Department of Economics Research Report: 8608; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, Canada N6A 5C2. PG 52. PR No Charge. JE 831, 824. KW Union Status. Wage Effects. Union Diffentials.
AB In recent discussions of the estimation of "union differentials" there appears to be a quite general agreement that union status is not exogenous. Given that some endogenous process determines union status, a list of further questions have naturally arisen, along with discussions about what union differentials measure in the endogenous union status context, and how they should be interpreted. Unfortunately, there has been much less agreement over these issues. Following a variety of attempts to "deal with" the endogeneity, several authors, notably Freeman and Medoff (1982) and Lewis (1986), have asked whether anything has been learned from these exercises. The different estimates of union differentials obtained from these attempts have been compared. The pessimistic conclusion that has usually been drawn is that there is no discernible pattern to the estimates -- many of which are considered unreasonably high or low -- and that therefore no improvement in our understanding of the union differential problem has been made.

Rockett, Katherine

TI International Macroeconomic Policy Coordination When Policy-Makers Disagree on the Model. AU Frankel, Jeffrey; Rockett, Katherine.

Rodriguez, Anthony

TI A Test of International CAPM. AU Engel, Charles; Rodrigues, Anthony.

Rogoff, Kenneth

TI A Constant Recontracting Model of Sovereign Debt. AU Bulow, Jeremy; Rogoff, Kenneth.

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Romer, Paul M.

TI Information Production, Evaluation Risk, and Optimal Contracts. **AU** Hargraves, Monica; Romer, Paul M.

Roper, Stephen

PD September 1986. **TI** The Economics of Job Vacancies. **AA** Centre for Labour Economics, London School of Economics, and Northern Ireland Economic Research Centre. **SR** London School of Economics Centre for Labour Economics Discussion Paper: 252; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, U.K. **PG** 58. **PR** No Charge. **JE** 824, 225. **KW** Job Vacancies. Unemployment. Labor Market Accounting. U/V Curve.

AB This paper surveys the economic literature concerning job vacancies, both concept and data series. The collection of vacancy data is discussed with particular attention being paid to the techniques that have been used to bridge the gap between notified and total vacancy series. Three major uses of vacancy data are examined; its role as part of a labour market accounting framework, its part in the U/V curve literature and its use as a tool for the decomposition of the stock of the unemployed.

Rose, Hugh

PD April 1986. **TI** The Stability of Equilibrium in a

and choose whether to own or to rent at each move. Limiting conditions of this process are used to characterize the steady state frequency of owner-occupied housing, and to simulate the impact of changes in housing tax policy. This differs markedly from previous studies of housing tax policy, which focus on the entire population (as opposed to the movers) ignore the effect of household residence times. (See King 1980), Rosen (1970), White and White (1977), or Laidler (1969). Residence times further influence the analysis by affecting the relative cost of owning to renting in the tenure choice model. Homeowners pay legal and realtor fees at the time they move out of their homes which renters do not have to pay. The discounted value of these fees declines with length of stay and provides a structural explanation of why families with longer residence times have a greater propensity to own. Results from the empirical analysis suggest that the semi-Markov model closely predicts conditions in the United States, and provides important insights into the effects of housing tax policy. Residence times are also found to influence household tenure choice through their impact on the discounted legal and realtor fees paid by homeowners.

Rosenzweig, Mark R.

PD November 1986. **TI** Risk, Implicit Contracts and the Family in Rural Areas of Low-Income Countries. **AA** Department of Economics, University of Minnesota. **SR** University of Minnesota Economic Development Center Bulletin: 86-6; Department of Economics, 1085

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Paper: 2039; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 831. **KW** Union Contracts. Seniority Rules. Union Organization.

AB This paper examines the optimality of several seniority provisions which are common to United States union contracts. The paper focuses on the attempts by the initial union members to maximize their return from organizing the union. An overlapping generations model is used in the analysis. Seniority wage increases are found to serve as implicit initiation fees and thus serve as one means of appropriating rents from future union members. Layoff rules are shown to be optimal only when the organizers are constrained in the types of contracts they can write. Without these constraints, the optimal contract provides full insurance making layoff rules unnecessary. The paper concludes with a plausible set of constraints which organizers may face and discusses the conditions necessary for seniority layoff rules to result.

TI The Importance of Local Fiscal Conditions in Analyzing Local Labor Markets. **AU** Gyourko, Joseph; Tracy, Joseph.

Tryon, Ralph W.

TI The Structure and Properties of the FRB Multicountry Model Part I: Model Description and Simulation Results. **AU** Edison, Hali J.; Marquez, Jaime R.; Tryon, Ralph W.

Turnovsky, Stephen J.

TI Optimal Monetary Policy in an Open Economy. **AU** Stemp, Peter J.; Turnovsky, Stephen J.

PD October 1986. **TI** Optimal Monetary Policy and Wage Indexation Under Alternative Disturbances and Information Structures. **AA** University of Illinois. **SR** National Bureau of Economic Research Working Paper: 2042; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 311, 133. **KW** Wage Indexation. Optimal Monetary Economics. Policy Redundancy. Stabilization.

AB The interdependence between the optimal degree of wage indexation and optimal monetary policy is analyzed for a small open economy under a variety of assumptions regarding: (i) relative information available to private agents and the stabilization authority; (ii) the perceived nature of the disturbances impinging on the economy. The distinctions between: (a) unanticipated and anticipated disturbances, and (b) permanent and transitory disturbances, are emphasized. The extent to which stabilization is achieved is shown to depend upon the nature of the disturbances and the available information. The policy redundancy issue is emphasized, implying that optimal rules can frequently be specified in many equivalent ways.

PD November 1986. **TI** Optimal Monetary Growth with Accomodating Fiscal Policy in a Small Open Economy. **AA** University of Illinois. **SR** National Bureau of Economic Research Working Paper: 2084; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 311, 321, 023, 431, 323. **KW** Monetary Policy. Fiscal Policy. Open Economy. Capital Mobility. Taxation.

AB This paper emphasizes how the choice of the optimal monetary growth rate in a small open economy under perfect capital mobility depends upon the accommodating policy chosen to maintain the overall budget constraint in the economy. When this occurs through lump sum taxation, the optimal monetary growth rate is shown to be the "distorted" Friedman monetary rule. If the adjustment occurs through the income tax rate, the optimal monetary growth rate involves a Phelps-type tradeoff between the income tax rate and the inflation tax rate. The framework is suited for analyzing optimal macroeconomic policy in general and the latter part of the paper considers an optimal monetary-fiscal package.

Ullah, Aman

TI The Econometric Analysis of Models With Risk Terms. **AU** Pagan, Adrian; Ullah, Aman.

Usher, Dan

PD November 12, 1986. **TI** The Dynastic Cycle and the Stationary State. **AA** Department of Economics, Queen's University, Kingston, Ontario K7L 3N6. **SR** Queen's Institute for Economic Research Discussion Paper: 671; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 38. **PR** $2.50 Canada; $3.00 United States; $3.50 foreign. **JE** 053, 916, 112. **KW** Comparative Economic Systems. Cycles.

AB Historians of China speak of a dynastic cycle in which periods of economic progress and decline coincide with the rise and fall of families of rulers, while economists speak of societies without technical change or involuntary unemployment as evolving into stationary states. This paper alters the usual assumptions of economic analysis to generate a dynastic cycle instead of a stationary state. People are divided into three classes, farmers, thieves and rulers, with free mobility into the professions of farming and theft. Rulers act in their own interest in taxing farmers and hunting thieves. Utility depends in part on the risk of loss of life in combat which, in turn, has a major influence on population growth. The cycle itself is modelled as an alternation between anarchy and despotism, between a society without government in which farmers are at the mercy of thieves and population is necessarily small, and a society where order has been established and a large population can be accommodated. Despotism collapses into anarchy when population becomes too large and income per head too small to support a ruling class.

van der Ven, Guido E.

PD November 1986. **TI** The United States International Asset and Liability Position: A Comparison of Flow of Funds and Commerce Department Presentations. **AU** van der Ven, Guido E.; Wilson, John F. **AA** Research and Statistics Division, Federal Reserve Board. **SR** Board of Governors of the Federal Reserve System International Finance Discussion Paper: 295; International Finance Division Board of Governors of the Federal Reserve System, Washington, D.C. 20551. **PG** 34. **PR** No Charge. **JE** 431, 441. **KW** Flow of

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Funds. International Investment Position. Net Debtor. United States. Foreign Debt.
AB This paper presents a detailed description of how the Flow of Funds' foreign sector asset and liability account is derived. The statistics found in the Flow of Funds' (FOF) foreign sector are related to the Commerce Department's United States International Investment Position (IIP) tabulation; a survey of information sources for the foreign sector shows how these data are largely reconcilable with the Commerce Department's IIP. A second section of the paper, based on these statistics, offers some observations about recent developments in the United States' net international investment position.

Vishny, Robert

TI Management Ownership and Corporate Performance: An Empirical Analysis. **AU** Morck, Randall; Shleifer, Andrei; Vishny, Robert.

Voigt, B.

TI A Partition Theorem for '0, 1. **AU** Promel, H. J.; Voigt, B.

von Randow, R.

PD June 1986. **TI** On an Optimal Location Problem in a Triangle. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 86418; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, Deutschland. **PG** 9. **PR** No Charge. **JE** 213. **KW** Optimal Location Problem. Triangle. Geometrical Construction.
AB We consider an optimal location problem in a triangle with a well-known analog solution and present a geometrical construction for the optimal solution with two different optimality proofs generalizing classic proofs of a special case.

Wadhwani, Sushil B.

PD September 1986. **TI** Profit-Sharing as a Cure for Unemployment: Some Doubts. **AA** Centre for Labour Economics, London School of Economics. **SR** London School of Economics Centre for Labour Economics Discussion Paper: 253; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, U.K. **PG** 40. **PR** No Charge. **JE** 820, 023. **KW** Profit-Sharing. Unemployment. Tax Incentives.
AB This paper argues that:- 1. Tax incentives to encourage profit-sharing could be misused through a cosmetic scheme, with little effect on employment. 2. Profit-sharing (PS) does not reduce unemployment in an efficiency wage model. 3. PS might make employers less cautious, but, then, we still need to explain why profit-maximising employers don't introduce it. 4. If PS led to a greater decentralisation of wage decisions, this could make the economy more prone to stagflation.

Wagner, D. K.

TI A Note on Detecting Simple Redundancies in Linear Systems. **AU** Bixby, R. E.; Wagner, D. K.

Waverman, Leonard

TI The Canada-U.S. Auto Pact of 1965: An Experiment in Selective Trade Liberalization. **AU** Fuss, Melvyn; Waverman, Leonard.

Weissenberger, E.

PD 1985. **TI** The Life-Cycle Hypothesis, Rational Expectations and Intertemporally Non-Separable Preferences. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: B-10; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, Deutschland. **PG** 46. **PR** No Charge. **JE** 023, 921, 022. **KW** Life Cycle Hypothesis. Demand Estimation. Durable Goods. Non-Durable Goods. Rational Expectations. Intertemporally Non-Separable Preferences.
AB In this paper the demand for non-durable and durable consumption is derived as the outcome of an intertemporal optimisation problem. We find that consumption depends on the sum of non-human and unobservable human wealth and that the imposition of the rational expectations assumption about human wealth evaluation yields testable cross-equation restrictions. Strictly convex adjustment costs give dynamic demand functions. Results based on United Kingdom time series data are presented. The cross-equation restrictions implied by a weak version of the rational expectations hypothesis cannot be rejected.

Weitzman, Martin L.

PD November 1985. **TI** Steady State Unemployment Under Profit Sharing. **AA** Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 399; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 31. **PR** No Charge. **JE** 023, 511. **KW** Unemployment. Profit Sharing. Incentives.
AB This paper has several aims. First of all, it seeks to tell a reasonable story about how asymmetric treatment of high-seniority "insider" workers and non-tenured "outsiders" can give rise to bad macroeconomic steady states in a wage economy. The ultimate source of the unemployment-inflation dilemma in this story is the idea that low-seniority outsider workers end up unemployed because they have too little voice in negotiations over wages. The paper then considers profit sharing as a possible alternative payment mechanism having the automatically corrective incentive property that employers always want to hire more outsiders. Given the assumptions of the model, it is shown that widespread profit sharing will result in lower unemployment and more output even though it is individually rational for insiders always to prefer wages over profit shares. Put more fancifully, a wage system has a negative macroeconomic externality, while a profit-sharing system has favorable externality effects on employment and, indirectly, on price stability. If the logic of the externality argument is accepted the path is open for government policy to encourage widespread profit sharing as an instrument for lowering the NAIRU.

Welch, Annemarie S.

TI The Rand Health Insurance Study: A Critique. **AU** Welch, Bruce L.; Hay, Joel W.; Miller, Daniel S.; Olsen, Randall J.; Rippey, Robert M.; Welch, Annemarie S.

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Welch, Bruce L.

PD July 1986. **TI** The Rand Health Insurance Study: A Critique. **AU** Welch, Bruce L.; Hay, Joel W.; Miller, Daniel S.; Olsen, Randall J.; Rippey, Robert M.; Welch, Annemarie S. **AA** Welch, B.L.: Welch Associates. Hay: Stanford University. Miller: Central Connecticut State University. Rippey: University of Connecticut. Welch, A.S.: New Britain General Hospital. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-36; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 47. **PR** No Charge. **JE** 913. **KW** Health Insurance.

AB This paper examines reported methods and findings from the Rand Health Insurance Study relating to the effects of cost-sharing and capitation on individual health care expenditures. Several problems are identified and discussed concerning the experimental design, statistical methodology, conclusions and mode of presentation of results drawn from this study. As a result of these problems, we question whether the differences claimed by Rand in health care expenditures and utilization across health insurance plans have been demonstrated.

Welling, Linda A.

PD October 29, 1986. **TI** Satisfaction Guaranteed or Money (Partially) Refunded: Efficient Refunds Under Asymmetric Information. **AA** Department of Economics, Queen's University, Canada. **SR** Queen's Institute for Economic Research Discussion Paper: 668; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 43. **PR** $2.50 Canada; $3.00 United States; $3.50 foreign. **JE** 611, 026, 921. **KW** Warranties. Product Quality. Private Information. Refunds.

AB Refunds are modelled as a market response to asymmetric information. A firm's choice of product reliability is private information, and not verifiable. Firms compete by offering price-and-refund contracts; consumers draw inferences about quality from the observed contracts. In equilibrium, quality is revealed by the contracts, prices, refunds and (unobserved) quality are predicted to be positively correlated with income when consumers care about quality directly. The second part of the paper discusses the introduction of "new and improved" products when consumers cannot observe technology. Without additional sources of information, product quality may be too high in equilibrium.

Welsch, Heinz

TI Determination of Exchange Rates and Capital Flows for OECD Countries. **AU** Krelle, W.; Welsch, H.

PD August 1986. **TI** Habit Persistence and the Structure of International Commodity Trade. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: B-47; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, Deutschland. **PG** 24. **PR** No Charge. **JE** 421, 122. **KW** Linear Expenditure System. Commodity Trade. Expenditure Elasticity. Price Elasticity.

AB The paper analyzes the commodity structure of exports and imports of nine industrialized countries, using a dynamic version of the Linear Expenditure System. The hypothesis implied by this approach is that the structure of commodity trade can be explained by a combination of habit persistence and constant marginal expenditure shares. Application of the model to the trade composition of nine countries shows that there are considerable differences in the strength of habit persistence across countries and across commodity groups as well as between exports and imports. These are crucial for the explanation of the associated expenditure and price elasticities.

West, Kenneth D.

PD July 1986. **TI** Targeting Nominal Income: A Note. **AA** Princeton University. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-31; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 14. **PR** No Charge. **JE** 023, 311, 321. **KW** Nominal Income Targeting. Monetary Targets. Aggregate Demand-Supply Framework.

AB This paper compares nominal income and monetary targets in a standard aggregate demand - aggregate supply framework. If the desirability of policies is measured by their effect on the unconditional variance of output, nominal income targeting is preferable if and only if the aggregate elasticity of demand for real balances is greater than one. This is precisely the opposite of the condition that in Bean (1984) is sufficient to make nominal income targeting preferable. This points out the importance of specification of supply and of objective function in work on nominal income targeting.

PD July 1986. **TI** Asymptotic Normality, When Regressors Have A Unit Root. **AA** Princeton University. **SR** Stanford Hoover Institute Working Papers in Economics: E-86-30; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 57. **PR** No Charge. **JE** 211. **KW** Asymptotic Normality. Unit Root. Asymptotic Covariance Matrix.

AB Under fairly general conditions, ordinary least squares and linear instrumental variables estimators of parameters of a regression equation with a single nonstationary right hand side variable are asymptotically normal. Standard formulas may be used to calculate a consistent estimate of the asymptotic variance matrix of the estimated parameter vector. So inference may proceed in the usual way. The key requirement is that the unconditional mean of the first difference of the nonstationary variable is nonzero. These results imply that in many cases often encountered in practice, linear estimators of parameters of regression equations with more than one nonstationary right hand side variable are also asymptotically normal, with standard formulas again appropriate for inference.

PD July 1986. **TI** Full Versus Limited Information Estimation of a Rational Expectations Model: Some Numerical Comparisons. **AA** Princeton University. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-29; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University,

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Stanford, CA 94305. **PG** 31. **PR** No Charge. **JE** 211. **KW** Full Information Estimation. Limited Information Estimation. Rational Expectations. Asymptotic Efficiency.

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 technique are not particularly large.

TI A Simple, Positive Semi-Definite, Heteroskedasticity and Autocorrelation Consistent Covariance Matrix. **AU** Newey, Whitney K.; West, Kenneth D.

PD July 1986. **TI** A Standard Monetary Model and the Variability Deutschmark - Dollar Exchange Rate. **AA** Princeton University. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-38; D omestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 33. **PR** No Charge. **JE** 431. **KW** Exchange Rate.

AB This paper uses a novel test to see whether the Meese (1985) and Woo (1985) models are consistent with the variability of the deutschemark-dollar exchange rate 1974-1984. The answer, perhaps surprisingly, is yes. Both models, however, explain the month to month variability as resulting in a critical way from unobservable shocks to money demand and purchase power parity. It would therefore be of interest in future work to model one or both of these shocks as explicit functions of economic variables.

PD July 1986. **TI** Dividend Innovations and Stock Price Volatility. **AA** Princeton University. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-37; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 51. **PR** No Charge. **JE** 313. **KW** Stock Price Volatility. Dividend Innovations. Speculative Bubbles.

AB This paper establishes an inequality that may be used to test the null hypothesis that a stock price equals the expected present discounted value of its dividend stream, with a constant discount rate. The inequality states that if this hypothesis is true, the variance of the innovation in the stock price is bounded above by a certain function of the variance in the innovation in the dividend. The bound is valid even if prices and dividends are nonstationary. The inequality is used to test the null hypothesis, for some long term annual United States stock price data. The null is decisively rejected, with the stock price innovation variance exceeding its theoretical upper bound by a factor of as much as twenty. The rejection is highly significant statistically. Regression diagnostics and some informal analysis suggest that the results are more consistent with there being speculative bubbles in the United States stock market than with a failure of the rational expectations or constant discount rate hypothesis.

PD July 1986. **TI** A Specification Test for Speculative Bubbles. **AA** Princeton University. **SR** Stanford Hoover Institute Working Paper in Economics: E-86-35; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 51. **PR** No Charge. **JE** 313, 521, 211. **KW** Speculative Bubbles.

AB The set of parameters needed to calculate the expected present discounted value of a stream of dividends can be estimated in two ways. One may test for speculative bubbles by testing whether the two estimates are the same. When the test is applied to some annual United States stock market data, the data reject the null hypothesis of no bubbles. They do so both in a constant discount rate model and in a linearized time varying discount rate model. The test is of general interest since it may be applied to a wide class of linear rational expectations models.

PD November 1986. **TI** A Specification Test for Speculative Bubbles. **AA** Princetown University. **SR** National Bureau of Economic Research Working Paper: 2067; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 211, 313. **KW** Speculative Bubbles. Specification Test. Rational Expectations.

AB The set of parameters needed to calculate the expected present discounted value of a stream of dividends can be estimated in two ways. One may test for speculative bubbles, or fads, by testing whether the two estimates are the same. When the test is applied to some annual United States stock market data, the data usually reject the null hypothesis of no bubbles. The test is of general interest since it may be applied to a wide class of linear rational expectations models.

White, William D.

TI Wealth - The Support of Institutions and the Limits of Control. **AU** Eaton, B. Curtis; White, William D.

Wilde, Louis L.

TI An Empirical Analysis of Federal Income Tax Auditing and Compliance. **AU** Dubin, Jeffrey A.; Wilde, Louis L.

Wilson, John F.

TI The United States International Asset and Liability Position: A Comparison of Flow of Funds and Commerce Department Presentations. **AU** van der Ven, Guido E.; Wilson, John F.

Wolsey, Laurence A.

TI Lot-Size Models With Backlogging: Strong Reformations and Cutting Planes. **AU** Pochet, Yves;

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Wolsey, Laurence A.

Wood, Robert

TI The Estimation of Transaction Costs in Arbitrage Models. **AU** Spiller, Pablo T.; Wood, Robert.

Wyplosz, Charles

TI The Economic Consequences of the Franc Poincare. **AU** Eichengreen, Barry; Wyplosz, Charles.

Yamamoto, Yoshitsugu

PD January 1986. **TI** Orientability of a Pseudomanifold and Generalization of Sperner's Lemma. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 86411; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, Deutschland. **PG** 23. **PR** No Charge. **JE** 213. **KW** Fixed Point Algorithm. Combinatorial Lemmas. Topology. Sperner's Lemma.

AB We propose a combinatorial framework for fixed point algorithms and constructive proofs of combinatorial lemmas in topology. The framework consists of two sets of pseudomanifolds and an operator relating a pseudomanifold in a set with a pseudomanifold in other set. They have lattice structures which are dual to each other. We show that the set of "joins" of pseudomanifolds related by the operator is a homogeneous and orientable pseudomanifold under several conditions. By exploiting this framework we generalize Sperner's lemma on convex polytopes. We also prove two generalizations of Sperner's lemma as corollaries to the result.

TI A Globally Convergent Simplical Algorithm for Stationary Point Problems on Polytopes. **AU** Talman, A. J. J.; Yamamoto, Y.

Yannelis, Nicholas C.

TI An Elementary Proof of Fatou's Lemma in Finite Dimensional Spaces. **AU** Rustichini, Aldo; Yannelis, Nicholas C.

Yoshioka, Kanji

TI Bilateral Models of Production for Japanese and United States Industries. **AU** Jorgenson, Dale W.; Sakuramoto, Hikaru; Yoshioka, Kanji; Kuroda, Masashiro; Masashiro.

Zarnowitz, Victor

TI Forecasting Recessions Under the Gramm-Rudman-Hollings Law. **AU** Moore, Geoffrey H.; Zarnowitz, Victor.

Zax, Jeffrey S.

PD November 1986. **TI** Trends and Deviations in Federal, State and Local Finance. **AA** National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2063; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 322, 323, 324. **KW** Government Finance. Government Debt. Deficit. Government Expenditure.

AB This paper contains a descriptive analysis of real per capita annual revenues, expenditures, deficits, debt levels and capital expenditures for federal, state and local government finance in the United States for the years 1952-83. It summarizes each time series as a deterministic trend and an ARIMA characterisation of the deviations around trend. These summaries demonstrate that civilian capital outlays are falling at an accelerating pace in all levels of government; federal government expenditures and debt are expanding at an accelerating rate; local special districts are also growing quadratically; state governments have a continuing surplus of revenues over expenditures; and local governments depend upon intergovernmental revenues to maintain balance between revenues and expenditures while reducing debt. Stochastic persistence tends to increase at more disaggregate levels of government. Expenditures tend to have longer lags than do revenues.

Zin, Stanley E.

TI Risk Premiums in the Term Structure: Evidence from Artificial Economies. **AU** Backus, David K.; Gregory, Allan W.; Zin, Stanley E.

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