NBER Reporter

NATIONAL BUREAU OF ECONOMIC RESEARCH, INC. FALL 1989

Program Report

International Studies

William H. Branson

Since my last program report (*NBER Reporter*, Spring 1987), the focus of attention in international economics has remained on competitiveness and protection; macroeconomic policy coordination; debt and stabilization in developing countries; and international financial markets. There also has been a resurgence of interest in growth and its interaction with trade, and the emergence of the single European market of 1992 has provided a new set of questions for researchers.

This report will discuss the program's research in six main areas: trade and competitiveness; strategic behavior and trade; international macroeconomics; international finance; developing country debt; and stabilization programs in developing countries. The report ends with a discussion of the NBER project on international taxation and the series of international seminars sponsored jointly by the NBER and other organizations.

In This Issue

Program Report: International Studies 1
Research Summaries
Exchange Rates 7
The Conflict Between Managers and Shareholders 8
Economic Outlook Survey 10
NBER Profiles 13
Conferences 14
Conference Calendar 25
Bureau News 27
Bureau Books 35
Current Working Papers 36

This issue of the *Reporter* highlights the Bureau's Program in International Studies. Next, Takatoshi Ito describes his work on exchange rates. Then, Randall Mørck, Andrei Shleifer, and Robert W. Vishny report on their study of the conflict between managers and shareholders. After the quarterly Economic Outlook Survey are biographical sketches, news of NBER conferences, the Conference Calendar, and other NBER news and reports. The *Reporter* concludes with short summaries of recent NBER Working Papers.

Trade and Competitiveness

Analyses of U.S. trade and competitiveness, and of adjustment of U.S. trade to changes in the pattern of world trade and competitive pressure from abroad, have long been a central part of our research. Current work includes studies of growth and trade with differentiated products; hysteresis in trade fluctuations; the role of multinational corporations in trade; growth of trade in services; trade and fluctuations in stock prices; competitiveness and differences in the cost of capital; and the effects of trade policy.

Gene M. Grossman and Elhanan Helpman have been studying the effect of the international economic environment, including trade policy, on innovation and growth.[1] One of their results is that trade can make available a wider range of inputs and technologies, and thus can increase the growth rate. Nancy P. Marion also has developed a model in which the growth rate is endogenous, with learning by doing. In her model, open capital markets do not necessarily increase the growth rates; the nation's knowledge-based growth rate actually could fall.[2]

[1] *G. M. Grossman and E. Helpman, "Product Development and International Trade," NBER Working Paper No. 2540, March 1988, and "Growth and Welfare in a Small Open Economy," NBER Working Paper No. 2970, May 1989.*

[2] *M. Kohn and N. P. Marion, "The Implications of Knowledge-Based Growth for the Optimality of Open Capital Markets," NBER Working Paper No. 2487, January 1988.*

The National Bureau of Economic Research is a private, nonprofit research organization founded in 1920 and devoted to objective quantitative analysis of the American economy. Its officers and board of directors are:

Chairman—*George T. Conklin, Jr.*
Vice Chairman—*Paul W. McCracken*
Treasurer—*Charles A. Walworth*

President and Chief Executive Officer—*Martin Feldstein*
Executive Director—*Geoffrey Carliner*
Director of Finance and Administration—*Sam Parker*

DIRECTORS AT LARGE

John Herron Biggs
Andrew Brimmer
Carl F. Christ
George T. Conklin, Jr.
Kathleen B. Cooper
Jean A. Crockett
George C. Eads
Morton Ehrlich
Martin Feldstein
George Hatsopoulos
Lawrence R. Klein
Franklin A. Lindsay
Paul W. McCracken
Leo Melamed
Michael H. Moskow
James J. O'Leary
Robert T. Parry
Peter G. Peterson
Robert V. Roosa
Richard N. Rosett
Bert Seidman
Eli Shapiro
Donald S. Wasserman

DIRECTORS BY UNIVERSITY APPOINTMENT

Jagdish W. Bhagwati, *Columbia*
William C. Brainard, *Yale*
Franklin Fisher, *Massachusetts Institute of Technology*
Jonathan R. T. Hughes, *Northwestern*
Saul Hymans, *Michigan*
Marjorie B. McElroy, *Duke*
James L. Pierce, *California, Berkeley*
Andrew Postlewaite, *Pennsylvania*
Nathan Rosenberg, *Stanford*
Harold Shapiro, *Princeton*
Craig Swan, *Minnesota*
Burton A. Weisbrod, *Wisconsin*
Michael Yoshino, *Harvard*
Arnold Zellner, *Chicago*

DIRECTORS BY APPOINTMENT OF OTHER ORGANIZATIONS

Richard A. Easterlin, *Economic History Association*
Gail Fosler, *The Conference Board*
Ronald Gallant, *American Statistical Association*
Bruce Gardner, *American Agricultural Economics Association*
Robert S. Hamada, *American Finance Association*
Robert C. Holland, *Committee for Economic Development*
David Kendrick, *American Economic Association*
Ben Laden, *National Association of Business Economists*
Rudolph A. Oswald, *American Federation of Labor and Congress of Industrial Organizations*
Douglas D. Purvis, *Canadian Economics Association*
Charles A. Walworth, *American Institute of Certified Public Accountants*

Contributions to the National Bureau are tax deductible. Inquiries concerning contributions may be addressed to Martin Feldstein, President, NBER, 1050 Massachusetts Avenue, Cambridge, MA 02138.

The *Reporter* is issued for informational purposes and has not been reviewed by the Board of Directors of the NBER. It is not copyrighted and can be freely reproduced with appropriate attribution of source. Preparation of the *NBER Reporter* is under the supervision of Donna Zerwitz, National Bureau of Economic Research, Inc., 1050 Massachusetts Avenue, Cambridge, MA 02138; (617) 868-3900.

In a related area, Richard E. Baldwin, one of the pioneers in the analysis of hysteresis in U.S. trade, has been working with Richard Lyons.[3] With hysteresis, foreign firms enter the U.S. market as the dollar appreciates but do not exit when the dollar comes back down to the level at which they entered. The exit price is lower than the entry price. This is one explanation of why U.S. imports remained high as the dollar depreciated after 1987.

Robert E. Lipsey, Rachel McCulloch, Irving B. Kravis, and Magnus Blomström have continued their work on multinational corporations and international investment. Kravis and Lipsey also are studying the determinants of price level differences across countries. Kravis and Lipsey have found that exports of manufactured goods by U.S. multinationals have retained their share of world exports in the 1980s, while the share of the United States in world exports has declined.[4] Blomström finds that multinationals increase competition in the host country.[5] McCulloch is now studying the effects of inward foreign investment in the United States.[6]

Albert Ando, Jorge Braga de Macedo, and I are studying international comparisons of the cost of capital. In a comparative study of saving and investment in the United States and Japan, Ando has estimated their relative costs of capital.[7] In a joint research project with J. David Richardson, de Macedo and I are estimating real effective exchange rates, inclusive of relative costs of capital. Our study of the effects of exchange rate changes across countries will follow the lines of my recent work with James H. Love.[8] Related research on the effects of changes in exchange rates or trade policies on relative stock prices of sectors producing traded goods has been done by Grossman and James A. Lev-

[3]*Richard E. Baldwin, "Some Empirical Evidence on Hysteresis in Aggregate U.S. Import Prices," NBER Working Paper No. 2483, January 1988; and Richard E. Baldwin and R. Lyons, "Exchange Rate Hysteresis: The Real Effects of Large versus Small Policy Misalignments," NBER Working Paper No. 2828, January 1989.*

[4]*I. B. Kravis and R. E. Lipsey, "Technological Characteristics of Industry and the Competitiveness of the United States and Its Multinationals," NBER Working Paper No. 2933, April 1989.*

[5]*M. Blomström, "Efficiency Differences between Foreign and Domestic Firms in Mexico,"* World Development *(November 1988).*

[6]*R. McCulloch, "Japanese Investment in the United States," in* The Internationalization of U.S. Markets, *D. Audretsch and M. Claudon, eds. New York: New York University Press, forthcoming.*

[7]*A. Ando and A. J. Auerbach, "The Corporate Cost of Capital in Japan and the United States: A Comparison," NBER Reprint No. 1213, June 1989; in* Journal of Japanese and International Economics *(1988), pp. 134–158; and in* Government Policy Towards Industry in the United States and Japan, *J. B. Shoven, ed. New York: Cambridge University Press, pp. 21–49.*

[8]*W. H. Branson and J. H. Love, "The Real Exchange Rate, Employment, and Output in Manufacturing in the United States and Japan," NBER Working Paper No. 2491, January 1988.*

insohn, and by James A. Brander. These studies find that stock prices *do* react to trade news.[9]

Barry J. Eichengreen and Lawrence H. Goulder have developed a dynamic computable general equilibrium (CGE) model to study the changing international competitive position of the U.S. economy. They have used it to study the effects of changes in domestic taxation designed to promote saving and investment on export-producing sectors, and to compare the effects of tariffs versus voluntary export restrictions (VERs). With a high degree of international capital mobility, subsidizing saving helps exports in the short run, but not in the long run. The opposite is true for subsidizing investment. Also, VERs do more damage to the economy than tariffs do. In April 1988, Robert C. Feenstra organized a conference on "Trade Policies for International Competitiveness" (summarized in the *NBER Reporter*, Summer 1988).[10]

Robert E. Baldwin continues to head the project on American trade relations; he and Richardson edited a Conference Report, *Issues in the Uruguay Round*, in 1988.

Strategic Behavior and Trade

The analysis of trade and the consequences of trade policy in a world of imperfect competition and strategic behavior between and among governments and actors in the private sector has been a major research area in the program since 1983. More recently, Paul R. Krugman, and Alasdair Smith of the Center for Economic Policy Research (CEPR) in London have been leading a group of researchers who are conducting empirical case studies of strategic behavior and trade at the industry level. A report on their October conference will appear in the Winter 1989/90 issue of the *NBER Reporter*. Several NBER researchers made important early contributions in this area. Helpman and Krugman have written a concise exposition of this topic, with extensive references.[11]

In addition, Barbara J. Spencer has been working on the trade policy implications of domestic dependence on imports for the supply of a key intermediate input, examining incentives for the exporting firm and the government to restrict exports of the input.[12] Carl Shapiro has been working on the related problem of the costs of switching between sources of supply, and horizontal mergers.[13]

Feenstra, Kala Krishna, Robert W. Staiger, and Richard H. Clarida also continue to work in this area. Feenstra and Krishna have analyzed the consequence of auctioning import quota rights. Feenstra argues that giving any quota rents to foreign suppliers will remove an incentive for domestic producers to appeal for protection. Krishna argues that foreign producers will appropriate the quota rent by their price reactions, anyway.[14]

Staiger is working on the determinants of the equilibrium level of protection in a framework that recognizes that trade volumes fluctuate, so that all parties are tempted to protect when import volumes surge. He interprets the General Agreement on Tariffs and Trade (GATT) as a forum for countries to coordinate their policies to achieve the most cooperative self-enforcing equilibrium low levels of protection.[15] Clarida has been working on the interaction between learning by doing and trade policy.

On the empirical side, Richard C. Marston and I have studied the responses of price and output by Japanese manufacturing firms when the real exchange rate changes. We present evidence that Japanese firms "price to market," varying their export prices in yen relative to their domestic prices and absorbing the exchange rate fluctuations in profit margins. This may be one reason why U.S. import prices respond slowly to exchange rate changes.[16]

Several researchers have examined the political economy of trade policy. Research Associate Marie C. Thursby has been working on rules versus discretion in trade policy when governments have private information about political pressure at home. If the government needs to establish its reputation as a trade policymaker,

[9] *G. M. Grossman and J. A. Levinsohn, "Import Competition and the Stock Market Return to Capital," NBER Working Paper No. 2421, October 1987; and J. A. Brander, "Election Polls, Free Trade, and the Stock Market: Evidence from the 1988 Canadian General Election," NBER Working Paper No. 3073, August 1989.*

[10] *B. J. Eichengreen and L. H. Goulder, "Savings Promotion, Investment Promotion, and International Competitiveness," NBER Working Paper No. 2635, June 1988, and in* Trade Policies for International Competitiveness, *R. C. Feenstra, ed. Chicago: University of Chicago Press, 1989; and "Trade Liberalization in General Equilibrium: Intertemporal and Interindustry Effects," NBER Working Paper No. 2965, May 1989.*

[11] *E. Helpman and P. R. Krugman,* Trade Policy and Market Structure. *Cambridge, MA: MIT Press, 1989.*

[12] *B. J. Spencer and R. W. Jones, "Vertical Foreclosures and International Trade Policy," NBER Working Paper No. 2920, April 1989, and "Trade and Protection in Vertically Related Markets," NBER Working Paper No. 3023, June 1989.*

[13] *C. Shapiro, "Dynamic Competition with Switching Costs,"* Rand Journal of Economics *(Spring 1988).*

[14] *K. Krishna, "The Case of the Vanishing Revenues: Auction Quotas with Oligopoly," NBER Working Paper No. 2723, September 1988, and "The Case of the Vanishing Revenues: Auction Quotas with Monopoly," NBER Working Paper No. 2840, February 1989; and R. C. Feenstra, "Auctioning U.S. Import Quotas, Foreign Response, and Alternative Policies," NBER Working Paper No. 2839, February 1989.*

[15] *K. Bagwell and R. W. Staiger, "A Theory of Managed Trade," NBER Working Paper No. 2756, November 1988.*

[16] *W. H. Branson and R. C. Marston, "Price and Output Adjustment in Japanese Manufacturing," NBER Working Paper No. 2878, March 1989; and R. C. Marston, "Pricing to Market in Japanese Manufacturing," NBER Working Paper No. 2905, March 1989.*

then discretion may dominate rules. Anne O. Krueger has found that the biases inherent in political decision-making imply that government intervention is likely to be more pervasive in import-competing industries than in exportables.[17]

Robert Baldwin has collected papers on the political economy of trade policy.[18] Richardson has surveyed the research on the effects of trade policy with imperfect competition.[19] These, plus the Helpman-Krugman book, provide a good summary of the program's work on strategic behavior and trade.

International Macroeconomics

Within international macroeconomics, the most active research areas have been analyses of aspects of fiscal policy and public debt, and international cooperation with some emphasis on the European Monetary System. In the fiscal area, Jacob A. Frenkel—on leave as Economic Counsellor and Director of Research at the International Monetary Fund (IMF)—and Assaf Razin have completed a major project on the role of fiscal policies in the world economy. (The project produced several working papers and a book.) They show how the composition of spending, taxing, and borrowing will have differential effects between countries and over time.[20]

Willem H. Buiter also has studied the conditions under which the choice between tax and debt financing of spending matters.[21] John F. Helliwell and Vittorio U. Grilli, among others, study the effects of fiscal policies on exchange rates and international imbalances.[22] Nouriel Roubini has studied the determinants of the level of spending and deficits, and rejects the tax-smoothing model in favor of political determinants.[23] Francesco Giavazzi finds that a longer average maturity of the public debt contributes to the sustainability of fixed exchange rates with free capital mobility.[24]

Koichi Hamada wrote on international coordination in the 1970s and has continued his work on the topic. Paul R. Masson was one of the builders of the IMF's Multimod, a world simulation model that is used to make projections for the IMF's semiannual *World Economic Outlook*. He has continued his simulation studies of coordination using the model, along with Jacob A. Frenkel and other IMF colleagues.[25] Jeffrey A. Frankel has focused on the obstacles to international macroeconomic policy coordination, including disagreement among policymakers on the true model of the economy, the current state of the economy, and policy objectives. A recent Frankel paper analyzes the case for international targeting of nominal GNP.[26]

Frenkel has written several papers on aspects of cooperation. In the fall of 1988, Frenkel, Morris Goldstein, and I organized a conference on "International Policy Coordination and Exchange Rate Fluctuations." Earlier, in the spring of 1987, Martin Feldstein organized a conference on "International Economic Cooperation."[27] One general conclusion from the papers in these two conference volumes, and from the entire line of research in the area, seems to be that the gains from macroeconomic policy coordination, narrowly defined, are likely to be small, but the gains from cooperation, more broadly defined, may be significant.

Susan M. Collins, currently on leave at the Council of Economic Advisers, studied the effects of the formation of the European Monetary System (EMS) on inflation in Europe. She questioned the widely held view that the EMS contributed significantly to the reduction of inflation.[28] Alessandra Casella is studying the optimal design of a European central bank and the constraints that a common European currency would place on national fiscal policies.[29] Francesco Giavazzi and Alberto Giovannini have written a book on the operation and effects of the EMS.[30]

---

[17] *R. Jensen and M. C. Thursby, "Tariffs with Private Information and Reputation," NBER Working Paper No. 2959, May 1989; and A. O. Krueger, "Asymmetries in Policy between Exportables and Import-Competing Goods," NBER Working Paper No. 2904, March 1989.*

[18] *Robert E. Baldwin, ed.,* Trade Policy Issues and Empirical Analysis. *Chicago: University of Chicago Press, 1988.*

[19] *J. D. Richardson, "Empirical Research on Trade Liberalization with Imperfect Competition: A Survey," NBER Working Paper No. 2883, March 1989, and in* OECD Economic Studies *12 (Spring 1989), pp. 7-50.*

[20] *J. A. Frenkel and A. Razin,* Fiscal Policies and the World Economy. *Cambridge, MA: MIT Press, 1987.*

[21] *W. H. Buiter, "Debt Neutrality, Professor Vickrey, and Henry George's 'Single Tax,'" NBER Reprint No. 1211, June 1989.*

[22] *J. F. Helliwell, "The Effects of Fiscal Policy on International Imbalances: Japan and the United States," NBER Working Paper No. 2660, July 1988; and V. U. Grilli, "Fiscal Policies and the Dollar/Pound Exchange Rate, 1870-1984," NBER Working Paper No. 2482, January 1988.*

[23] *N. Roubini and J. D. Sachs, "Government Spending and Budget Deficits in the Industrial Economies," NBER Working Paper No. 2919, April 1989.*

[24] *F. Giavazzi and M. Pagano, "Confidence Crises and Public Debt Management," NBER Working Paper No. 2926, April 1989.*

[25] *J. A. Frenkel, M. Goldstein, and P. R. Masson, "International Coordination of Economic Policies: Scope, Methods, and Effects," NBER Working Paper No. 2670, July 1988.*

[26] *J. A. Frankel, "A Modest Proposal for International Nominal Targeting (INT)," NBER Working Paper No. 2849, February 1989.*

[27] *M. Feldstein, ed.,* International Economic Cooperation. *Chicago: University of Chicago Press, 1988.*

[28] *S. M. Collins, "Inflation and the EMS," NBER Working Paper No. 2599, May 1988.*

[29] *A. Casella and J. Feinstein, "Management of a Common Currency," NBER Working Paper No. 2740, October 1988.*

[30] *F. Giavazzi and A. Giovannini,* Limited Exchange Rate Flexibility. *Cambridge, MA: MIT Press, 1989.*

Other lines of research in international macroeconomics do not fit into the fiscal and cooperation themes. Robert P. Flood and Marion continue their work on two-tier exchange markets, finding empirically that domestic policy variables have little influence on the spread between the two rates. Carol Osler shows how real disturbances are transmitted internationally and intertemporally via the terms of trade. Alan C. Stockman studies the effect of the choice of a nominal exchange rate regime on real exchange rate variability.[31]

International Finance

Robert J. Hodrick, Lars E. O. Svensson, Takatoshi Ito, and Karen K. Lewis have continued the program's work in international asset pricing and exchange rate determination. Hodrick examines how changes in the degree of uncertainty about the economic environment or policy affect not only the variance of asset prices but also their levels. Svensson has shown how uncertainty about monetary policy affects asset substitutability and has studied optimal portfolio allocation when some assets are traded internationally. Ito has estimated the impact of news on exchange markets as trading opens and closes around the world daily. He also has analyzed the role of news versus noise in dollar/yen trading. Lewis has evaluated the behavior of exchange rates and asset prices when the process driving their funadmental determinants changes.[32]

Frankel, Charles M. Engel, Kenneth A. Froot, and Grilli have considered market efficiency and excess volatility in exchange rates. Their work suggests that exchange rates overreact to news; that is, that the market is excessively volatile.[33] Linda Goldberg is working on the effects of exchange rate volatility on investment in the United States. She finds that in the 1980s, increased exchange rate volatility reduced investment.[34] Richard M. Levich has studied innovation in financial markets, the pressure for harmonization in European financial markets from the 1992 unification provisions, and hedging techniques in the Euromarkets.[35]

A number of NBER researchers have been working on problems of trigger pricing, exchange rate bands, and hysteresis, mentioned eralier with respect to trade. These problems generally involve "smooth pasting" conditions, in which asset prices approach limits smoothly. One example is the behavior of exchange rates within a target zone, analyzed in an early contribution by Krugman.[36] These problems also involve a return for waiting, so that options pricing models are relevant for their analysis. Bernard Dumas analyzed the behavior of the real exchange rate when it is costly to transfer assets internationally.[37] Krugman and Dumas have continued to work in this area, along with Flood, Froot, and Maurice Obstfeld.[38]

Developing-Country Debt

The debt problems of the developing countries and their partners, the lending banks, became an important research focus, and an international public policy issue in the 1980s. Jeffrey D. Sachs headed a major project on this topic that has produced four volumes on debt issues.[39] This project examined the causes and consequences of the debt crisis in Argentina, Bolivia, Brazil, Mexico, Indonesia, Korea, the Philippines, and Turkey. It also included studies of earlier debt crises,

[31] *R. P. Flood and N. P. Marion, "Risk Neutrality and the Two-Tier Foreign Exchange Market: Evidence from Belgium," NBER Working Paper No. 3015, June 1989; C. Osler, "Terms of Trade and the Transmission of Output Shocks in a Rational Expectations Model," NBER Working Paper No. 2681, August 1988; and A. C. Stockman, "Real Exchange Rate Variability under Pegged and Floating Nominal Exchange Rate Systems: An Equilibrium Theory," NBER Working Paper No. 2565, April 1988.*

[32] *R. J. Hodrick, "Risk Uncertainty and Exchange Rates," NBER Working Paper No. 2429, November 1987; L. E. O. Svensson, "Portfolio Choice and Asset Pricing with Nontraded Assets," NBER Working Paper No. 2774, November 1988; T. Ito and V. V. Roley, "Intraday Yen/Dollar Exchange Rate Movements: News or Noise?" NBER Working Paper No. 2703, September 1988; and K. K. Lewis, "On Occasional Monetary Policy Coordinations That Fix the Exchange Rate,"* Journal of International Economics *26, 1/2 (1989), pp. 139–156.*

[33] *K. A. Froot, "Tests of Excess Forecast Volatility in the Foreign Exchange and Stock Markets," NBER Working Paper No. 2362, August 1987; C. M. Engel, J. A. Frankel, K. A. Froot, and A. Rodriguez, "Conditional Mean-Variance Efficiency of the U.S. Stock Market," NBER Working Paper No. 2890, March 1989; and V. U. Grilli, "Financial Integration, Liquidity, and Exchange Rates," NBER Working Paper No. 3088, August 1989.*

[34] *L. Goldberg, "Nominal Exchange Rate Patterns: Effects on Entry, Exit, and Investment in U.S. Industry," forthcoming as an NBER Working Paper.*

[35] *R. M. Levich, "The Euromarkets After 1992," NBER Working Paper No. 3003, June 1989; and A. Koh and R. M. Levich, "Synthetic Eurocurrency Interest Rate Futures Contracts: Theory and Evidence," NBER Working Paper No. 3055, August 1989.*

[36] *P. R. Krugman, "Trigger Strategies and Price Dynamics in Equity and Foreign Exchange Markets," NBER Working Paper No. 2459, December 1987.*

[37] *B. Dumas, "Pricing Physical Assets Internationally," NBER Working Paper No. 2569, April 1988.*

[38] *R. P. Flood and P. M. Garber, "The Linkage between Speculative Attack and Target Zone Models of Exchange Rates," NBER Working Paper No. 2918, April 1989; K. A. Froot and M. Obstfeld, "Exchange Rate Dynamics under Stochastic Regime Shifts: A Unified Approach," NBER Working Paper No. 2835, February 1989; B. Dumas, "Super Contact and Related Optimality Conditions: A Supplement to Avinash Dixit's 'A Simplified Exposition of Some Results Concerning Regulated Brownian Movement,'" NBER Technical Working Paper No. 77, April 1989; and P. R. Krugman, "Target Zones with Limited Reserves," forthcoming as an NBER Working Paper.*

[39] *J. D. Sachs, ed.,* Developing Country Debt and the World Economy, *1988;* Developing Country Debt and Economic Performance, *Volume 1:* The International Financial System, *1988; Volume 2:* Country Studies—Argentina, Bolivia, Brazil, Mexico, *1989; and Volume 3:* Country Studies—Indonesia, Korea, the Philippines, Turkey, *1989; all published by the University of Chicago Press.*

structural adjustment policies in debtor countries and the role of the IMF, growth in industrial economies, and domestic political factors in debt crises.

The potential for default, or the ability to force renegotiations, makes the borrowing and repaying process a strategic interaction between the banks and the borrower. The interaction may be complicated by asymmetries of information between the two sides. In a series of papers, Raquel Fernandez has analyzed this strategic process and the conditions under which a country has the incentive to continue payment. Jonathan Eaton has studied conditions under which the threat by the lender to impose sanctions is credible. Joshua Aizenman has studied country risk and strategic investment, in which investment in trade-dependent sectors may increase the country's incentives to repay.[40]

The possibility of an increase in future taxes to service debt can create a disincentive to invest in the debtor country. This creates a "debt overhang," and the possibility that debt relief may be a positive-sum game, by removing this disincentive. NBER researchers have analyzed various techniques for such debt relief. Froot, Krugman, and Helpman analyze cases in which it may pay a country to buy back debt or in which the banks may gain by forgiving a fraction of debt.[41] Sachs has argued that debt repurchases may benefit the debtor country in some situations; Jeremy I. Bulow and Kenneth Rogoff have emphasized other situations in which buybacks will not benefit debtors.[42] Eichengreen and Richard Portes also have continued to study debt crises during the 1930s and earlier.[43]

Stabilization in Developing Countries

Rudiger Dornbusch and Sebastian Edwards have studied the determinants of the outcomes of stabilization and structural adjustment, including credibility aspects. Dornbusch identified the stages from expansion to collapse in programs that have failed, the role of the financial sector in adjustment, and the role of credibility in determining why countries wait before stabilizing. Edwards studied the role of openness in determining the outcome of an adjustment program.[44]

Credibility has been one focus for Michael Bruno, on leave as governor of the Bank of Israel, and Dani Rodrik. Bruno has evaluated the use of econometrics in the design of credible macroeconomic stabilization programs. Rodrik emphasizes the links between trade and macroeconomics. He finds that, in some circumstances, policymakers must use overkill to establish a reputation as credible reformers. Rodrik's recent work focuses on the effects of uncertainty about policy on investment.[45]

Other work on stabilization and structural adjustment includes research by Robert E. Cumby and Sweder J. G. van Wijnbergen on the effect of capital flight in undermining a stabilization program, and by myself and colleagues on the effect of stabilization and structural adjustment programs on income distribution.[46]

Other Projects

In addition to the research and meetings described above, Krugman is leading a research group on U.S./Japan economic relations. The Winter 1989/90 issue of the *NBER Reporter* will summarize the results of their October meeting. Marston headed a group that examined the misalignment of the dollar.[47] Razin and Joel B. Slemrod, from the Bureau's Program in Taxation, jointly organized a project on the international aspects of taxation. The project culminated in a conference in February 1989 (described in the Spring 1989 *Reporter*). A conference volume is forthcoming.

Each year since 1979, the international studies program has held an intensive series of workshops and seminars in Cambridge over three weeks in August as part of the NBER's Summer Institute. This provides an especially important opportunity for the international studies group to gather, because its members are quite

[40] *R. Fernandez and R. W. Rosenthal, "Sovereign-Debt Renegotiations Revisited," NBER Working Paper No. 2981, May 1989; J. Eaton, "Monopoly Wealth and International Debt," NBER Reprint No. 1186, May 1989, and in* International Economic Review *30, 1 (February 1989), pp. 33-48; and J. Aizenman, "Inward versus Outward Growth Orientation on the Presence of Country Risk," NBER Working Paper No. 2868, February 1989.*

[41] *K. A. Froot, "Buybacks, Exit Bonds, and the Optimality of Debt and Liquidity Relief," NBER Reprint No. 1166, April 1989, and in* International Economic Review *30, 1 (February 1989), pp. 49-70; P. R. Krugman, "Financing versus Forgiving a Debt Overhang," NBER Working Paper No. 2486, January 1988; and E. Helpman, "Voluntary Debt Reduction: Incentives and Welfare," NBER Working Paper No. 2692, August 1988.*

[42] *J. D. Sachs, "Conditionality, Debt Relief, and the Developing Country Debt Crisis," NBER Working Paper No. 2644, July 1988; and J. I. Bulow and K. Rogoff, "Sovereign Debt Repurchases: No Cure for Overhang," NBER Working Paper No. 2850, February 1989.*

[43] *B. J. Eichengreen and R. Portes, "Dealing with Debt: The 1930s and the 1980s," NBER Working Paper No. 2867, February 1989.*

[44] *R. Dornbusch, "Notes on Credibility and Stabilization," NBER Working Paper No. 2790, December 1988; R. Dornbusch and A. Reynoso, "Financial Factors in Economic Development," NBER Working Paper No. 2889, March 1989; and S. Edwards, "Openness, Outward Orientation, Trade Liberalization, and Economic Performance in Developing Countries," NBER Working Paper No. 2908, March 1989.*

[45] *M. Bruno, "Econometrics and the Design of Economic Reform," NBER Working Paper No. 2178, September 1988; and D. Rodrik, "Promises, Promises: Credible Policy Reform via Signaling," NBER Working Paper No. 2600, May 1988, and "Policy Uncertainty and Private Investment in Developing Countries," NBER Working Paper No. 2999, June 1989.*

[46] *R. E. Cumby and S. J. G. van Wijnbergen, "Financial Policy and Speculative Runs with a Crawling Peg: Argentina, 1979-1981," NBER Working Paper No. 2376, September 1987; and F. Bourguignon, W. H. Branson, and J. de Melo, "Adjustment and Income Distribution: A Counterfactual Analysis," NBER Working Paper No. 2943, April 1989.*

[47] *R. C. Marston, ed.,* Misalignment of Exchange Rates: Effects on Trade and Industry. *Chicago: University of Chicago Press, 1988.*

dispersed geographically, with many in Europe, Israel, and Japan. Since 1987, Marston has organized the macroeconomics and finance sessions of the Summer Institute, joined in 1989 by Froot. Richardson has continued to organize the trade sessions, joined in 1987 by Feenstra, in 1988 by Grossman, and in 1989 by Staiger.

Since 1987, three new international seminars, jointly or wholly sponsored by the NBER, have begun. The InterAmerican Seminar on Economics (IASE) is jointly sponsored by the Pontifica Universidade Catolica do Rio de Janeiro (PUC) and NBER, and meets annually in Latin America. It is organized by Edwards, and Edmar Bacha of PUC. Its papers appear in English in the *Journal of Development Economics* and in Spanish in *El Trimestre Económico*.

The International Seminar on International Trade (ISIT) is sponsored jointly with CEPR and meets biannually in the United States or Europe. It is organized by Robert Baldwin and Alan Winters. Its papers appear in *Weltwirtschaftliches Archiv*.

Finally, the East Asian Seminar on Economics (EASE), which will have its first meeting in Korea in 1990, is organized by Anne Krueger. The model for these seminars is the annual International Seminar on Macroeconomics (ISOM), sponsored jointly by the NBER and the Ecole des Hautes Etudes en Sciences Sociales (EHESS) in Paris and, since 1988, by the European Economic Association (EEA). The ISOM is organized by Robert J. Gordon of the NBER and Georges de Ménil of EHESS and meets each June in Europe. Its papers are published in the *European Economic Review*, now the journal of the EEA, in the May issue following the meeting.

An exceptional meeting, sponsored by the Foundation for Advanced Information and Research (FAIR), Japan, was held in Tokyo in 1988.

Research Summaries

Exchange Rates

Takatoshi Ito

Since the Plaza Agreement of September 1985, the exchange rates of the major industrial countries have changed dramatically. The dollar depreciated against the yen and the mark by more than 60 percent in the six months following the Plaza Agreement. The dollar's decline continued, although at a slower pace, throughout 1986 and 1987. In 1988, fluctuations in exchange rates decreased significantly but 1989 has been another volatile year.

What kinds of information can trigger large changes in the exchange rate? Why is the volatility apparently clustered in particular periods? How do expectations among traders change when there are large movements in exchange rates, and do their expectations affect the path of the exchange rate? To help answer these questions about exchange rate dynamics, researchers turn to both intradaily data and survey data on exchange rate expectations.

Intradaily Exchange Rate Dynamics: News Announcements, 1980-5

If the foreign exchange market is "efficient," then any movement of the exchange rate should reflect the arrival of new information or "news." For example, an announcement of an unexpected increase in the money supply should affect the exchange rate. In my research, I considered how exchange rates responded to important news about money supply, inflation, and industrial production. Working backward, I also recorded the days (and hours) when large changes in the exchange rate occurred, and then tried to identify the news behind these large jumps.

Because of the time difference between Japan and the United States, the hours of the Tokyo and New York foreign exchange markets do not overlap. Thus, it is possible to distinguish exchange rate movements caused by Tokyo news from those caused by New York news. V. Vance Roley and I exploit this idea by examining the responses of the exchange rate to announcements of the money supply, the inflation rate, and the industrial production index in the United States and Japan.[1] If the market is efficient, there should be a response within minutes after an announcement. We show that when the Federal Reserve pursued a money supply target, from October 1979 to October 1982, the U.S. money supply announcement had a significant effect on the exchange rate. Unexpected increases in the money supply created an expectation that the money supply would be curtailed in the coming months, so that the interest rate, and consequently the dollar, would have to rise. Even after the New York market closed, the exchange rate responded to the money supply announcement, suggesting that it took not just minutes, but hours, for the market to reach an agreement about the meaning of the announcement. After the Fed abandoned the money supply target in October 1982, this announcement effect disappeared.

The Japanese money supply announcement did not have much effect on the yen/dollar exchange rate at

[1] *T. Ito and V. V. Roley, "News from the United States and Japan: Which Moves the Yen/Dollar Exchange Rate?" NBER Reprint No. 889, August 1987, and* Journal of Monetary Economics *19, 2 (1987), pp. 255–277.*

any time, suggesting that the market did not believe that the Bank of Japan followed strict money supply targeting. Nor did announcements of the price index or of industrial production in the United States prompt significant responses in the yen/dollar exchange rate.

Although the announcement of the price index in Japan did not affect the exchange rate, announcement of Japan's industrial production index had an impact on the exchange rate for some periods into the future. This suggests that the market believed that Japanese policy would respond to news about economic growth.

Intradaily Exchange Rate Dynamics: After the Plaza Agreement

In examining the sharp appreciation of the yen after the Plaza Agreement, I find that large changes usually, but not always, accompany the arrival of news in the market.[2] For example, the large appreciation in the yen during New York market hours following the Plaza Agreement indicates that the shift in U.S. policy toward more policy cooperation with other countries was responsible. The yen appreciation in late October 1985, mainly during the Tokyo market hours, corresponds to the surprising increase in interest rates engineered by the Bank of Japan at that time. These were both instances when the market-specific news moved the exchange rate during the market hours in that market, but not in other countries.

The reasons for yen appreciation in the first half of 1986 are not as clear-cut. Yen appreciation occurred not only in the Tokyo and New York markets but also in the European market, indicating that some factor, such as the decrease in oil prices, played a role along with monetary news in Tokyo and New York.

Heat Waves versus Meteor Showers

Once the market becomes volatile (that is, undergoes large changes), it stays that way for weeks or months. If volatility clustering reflects the clustering of country-specific news (as in a "heat wave" in one country), then volatility should be correlated only daily in the specific market. However, if the volatility clustering occurs around the clock in many countries (as in a worldwide meteor shower), then it is caused by random policy coordination or by information being digested over a prolonged period.

Robert F. Engle III, Wen-Ling Lin, and I show that volatility clustering is like a meteor shower.[3] Once there is a large jump in one market, the volatility spills over to the next market that opens. This meteor shower volatility existed after the Plaza Agreement, and during the first half of the 1980s, when the policy coordination among the industrialized countries was almost nonexistent. Thus, we conclude that volatility clustering within a day is caused mainly by slow processing of information in the market.

Micro Survey Data

I also analyze panel data from the expectations survey of the Japan Center of International Finance (JCIF) and find that market participants are persistently heterogeneous.[4] Biases among the participants are statistically significant: exporters have a depreciation bias and importers and trading companies have an appreciation bias. Exporters gain from yen appreciation, given that price pass-through is incomplete.

These kinds of "wishful expectations" can be explained either as naive, nonrational behavior or as sophisticated, manipulative behavior. The usual test of rationality (orthogonality of forecast errors from information available at the time of forecast) reveals that many participants have irrational expectations.

A recent appreciation in the yen creates an expectation of a further yen appreciation in the short run (say, one month) and an expectation of depreciation in the long run (six months). I also find that these short- and long-run expectations are not internally consistent in the JCIF dataset and in survey data from the United States and Europe.[5]

[2] *T. Ito, "The Intradaily Exchange Rate Dynamics and Monetary Policies After the Group of Five Agreement," NBER Reprint No. 954, December 1987, and* Journal of the Japanese and International Economies *1, 1 (1987).*

[3] *R. F. Engle III, T. Ito, and W.-L. Lin, "Meteor Showers or Heat Waves? Heteroskedastic Intradaily Volatility in the Foreign Exchange Market," NBER Working Paper No. 2609, June 1988, and* Econometrica, *forthcoming; and "Where Does the Meteor Shower Come From? Capital Control, Stochastic Policy Cordination, or Private Information?" forthcoming as an NBER Working Paper.*

[4] *T. Ito, "Foreign Exchange Rate Expectations: Micro Survey Data," NBER Working Paper No. 2679, August 1988, and* American Economic Review, *forthcoming.*

[5] *K. A. Froot and T. Ito, "On the Consistency of Short-Run and Long-Run Exchange Rate Expectations," NBER Working Paper No. 2577, April 1988, and* Journal of International Finance and Money, *forthcoming.*

The Conflict Between Managers and Shareholders

Randall Mørck, Andrei Shleifer, and Robert W. Vishny

Economists since Adam Smith have been concerned that professional managers who own little equity in the companies they run have little incentive to serve their shareholders. This concern peaked during the Great Depression, rose again during the 1960s, and resurfaced in the 1980s with the advent of hostile takeovers. The recent concern has stimulated new empirical work asking whether managers indeed fail to serve their

shareholders, and how financial markets discipline such managers. As a result of this work, we now know a lot more about the conflict between managers and shareholders than we did ten years ago.

Is Low Ownership by Managers Indeed a Problem?

Underlying the discussion of the conflict between managers and shareholders is the belief that managers who own few shares in firms they run do not maximize profits. But is this belief correct? Do the firms with lower management ownership indeed perform worse than firms with higher management ownership? For a sample of 371 *Fortune* 500 companies in 1980 we find that the answer is *yes* at low levels of management ownership.[1] Performance of firms with management ownership between 5 and 20 percent, as measured by profitability or by the ratio of market value to the replacement cost of assets, is indeed better than the performance of firms with management ownership between zero and 5 percent. This result is consistent with the standard view that ownership gives incentives for better performance.

However, we also find that performance deteriorates as management ownership rises beyond 20 percent. This result suggests that managers who own controlling blocks of shares do not care so much about becoming even richer than they already are and use their complete control to pursue personal objectives that might well be different from value maximization.

Managers of large public corporations typically own much less than 5 percent of their firms' total shares. The traditional concern that ownership levels are too low to guarantee top performance therefore is supported by the data.

What Do Managers Do That Hurts Shareholders?

Managers have many objectives that might lead them to make decisions that do not maximize value. Often they would like their firms to grow beyond what is profitable to provide opportunities for themselves and for other employees as well as to increase the scope of their control. Managers also try to reduce risk by diversifying or by having too little leverage, since they worry a great deal more about the firm's risk than do the shareholders. Some managers also buy lavish perquisites with company money, such as airplanes, or museums named after themselves, although such perquisites hardly can reduce the firm's value much.

Understanding the managers' objectives helps us look for decisions that do not maximize value. For example, are acquisitions that are likely to serve the interest of managers indeed the ones that hurt the bidding firms' shareholders? Specifically, how do the stock prices of bidding firms change when they announce different types of acquisitions?[2] We find considerable support for the view that acquisitions that hurt the bidding firms' shareholders tend to serve managers. For example, bidders who buy rapidly growing firms tend to pay too much and so lose market value when they announce such acquisitions. Of course, pursuing growth is a well-known objective of managers. We also find that bidders who buy firms outside the lines of business in which they currently operate lose market value (particularly in the 1980s). Again, diversification is typically a managerial rather than a shareholder objective. Although the short-term market reaction is not always a good gauge of the wisdom of an acquisition, it is a telling fact that these short-run reactions are negative only when the managers are likely to benefit.

Of course, overpaying for an acquisition is not the only managerial action that can hurt shareholders. Previous studies have shown that the stock market also reacts negatively to the announcements of other investment projects, particularly in oil exploration. There is also ample evidence that managers adopt antitakeover provisions and resist takeovers more generally, even when such actions reduce the market values of their firms. Interestingly, several studies have shown that managers with low ownership stakes are more likely to make value-reducing acquisitions and to resist value-increasing takeovers of their own firms. These results confirm the view that low stock ownership in part is responsible for the prevalence of behavior that does not maximize value.

What Are the Forces That Discipline Managers?

In light of the clear evidence that some managerial actions hurt shareholders, why don't shareholders do something about it? In principle, the task of monitoring the managers to assure that they serve shareholders is entrusted to the board of directors, whom shareholders elect as their representatives. In practice, however, are the boards keen and energetic proponents of shareholder causes, keeping managers on their toes, or are they just passive endorsers of managerial wishes? The evidence suggests that the answer is somewhere in between.

Recent studies show that poor managerial performance leads to a higher probability of internally precipitated turnover of the top management.[3] However, the incidence of such turnover is very low, and only very poor performance for a long time brings about

[1] *R. Mørck, A. Shleifer, and R. W. Vishny, "Management Ownership and Corporate Performance: An Empirical Analysis," NBER Working Paper No. 2055, October 1986, and* Journal of Financial Economics *(March 1988).*

[2] *R. Mørck, A. Shleifer, and R. W. Vishny, "Do Managerial Objectives Drive Bad Acquisitions?" NBER Working Paper No. 3000, June 1989.*

[3] *J. B. Warner, R. L. Watts, and K. H. Wruck, "Stock Prices and Top Management Changes,"* Journal of Financial Economics *(1988).*

turnover, which is usually an early retirement and hardly ever an outright dismissal. We have found that boards tend to respond to particularly poor performance of a firm relative to its industry peers by precipitating turnover of the top management.[4] Boards appear to need a great deal of evidence that top managers are performing poorly, gained by looking at relative performance, before they encourage them to leave. Because boards typically are not very sure and certainly do not take negative stock market reactions to acquisition and other announcements as clear evidence of mismanagement, boards do not appear to be very effective in deterring behavior that does not maximize value.

The Disciplinary Role of Hostile Takeovers

The ineffectiveness of the boards of directors in enforcing shareholder interests has made room for an alternative disciplining device: the hostile takeover. The frequency and the size of such takeovers have increased dramatically in the 1980s, and they have become perhaps the most common form of reasserting the preferences of shareholders over those of managers.

The view that hostile takeovers are an alternative disciplining device, practiced when managers deviate from value maximization and when directors fail to address this problem, receives considerable empirical support. We have found that *Fortune* 500 targets of hostile takeovers indeed are very poorly performing companies: the ratios of their market values to the replacement cost of their physical assets are roughly 38 percent below those of all publicly traded *Fortune* 500 companies.[5] We also have found that these targets of hostile takeovers tend to be in poorly performing industries, as well as being poor performers relative to their industries.[6] Interestingly, Mitchell and Lehn find that firms that lose market value when they make acquisitions themselves are likely to become future targets of takeovers.[7] Hostile acquirers sometimes get back at managers whose actions reduce market values of their firms.

Conclusion

Our research, as well as that of many others, confirms the empirical significance of the problems identified by Adam Smith. Low management ownership does cause performance problems. Managers with low ownership stakes do pursue policies that help themselves but hurt shareholders. Boards of directors at best are only partially effective in restraining such behavior of managers. Finally, hostile takeovers do tend to help shareholders of poorly performing firms to realize at least some of the value of their investment.

[4] *R. Mørck, A. Shleifer, and R. W. Vishny, "Alternative Mechanisms for Corporate Control," NBER Working Paper No. 2532, March 1988, and* American Economic Review *(September 1988).*

[5] *R. Mørck, A. Shleifer, and R. W. Vishny, "Characteristics of Hostile and Friendly Takeover Targets," NBER Working Paper No. 2295, June 1987, and in* Takeovers: Causes and Consequences, *A. J. Auerbach, ed. Chicago: University of Chicago Press, 1988.*

[6] *R. Mørck, A. Shleifer, and R. W. Vishny, "Alternative Mechanisms for Corporate Control."*

[7] *Mitchell and Lehn, "Do Bad Bidders Become Good Targets?"* Journal of Political Economy, *forthcoming.*

Economic Outlook Survey

Third Quarter 1989

Victor Zarnowitz

According to the September survey of 15 professional forecasters taken by the NBER and the American Statistical Association, real GNP is expected to grow by 2.7 percent this year and 1.7 percent in 1990. Inflation as measured by the consumer price index (CPI) is forecast to fall from 5.1 percent in 1988–9 to 4.7 percent in 1989–90. Short- and long-term interest rates also are predicted to be lower on average in 1990 than in 1989.

Views on Recession and Unemployment: Divided but Stable

There is little change from the previous survey in the estimated probabilities of a recession. The mean estimates of the probability that total output will decline are 12 percent, 17 percent, 23 percent, 29 percent, and 29 percent for the five successive quarters 1989:3–1990:3. They are skewed to the right: that is, the medians are smaller than the means. The interquartile ranges shift upward from 0–15 percent for 1989:3 to 10–38 percent for 1990:3. In sum, a few forecasters see the likelihood of a recession in the year ahead as rising to a relatively high level, but most do not.

Most forecasters see the unemployment rate as increasing slightly. The medians are 5.4 percent for both 1990:3 and 1990 as a whole; the means are slightly higher. The ranges are 5.0–6.2 percent for 1990:3 and 5.1–6.5 percent for 1990.

Projections of GNP and Other Economic Indicators, 1989-90

	Annual				
				Percent Change	
	1988 Actual	1989 Forecast	1990 Forecast	1988 to 1989	1989 to 1990
1. Gross National Product ($ billions)	4880.6	5230.0	5553.1	7.2	6.2
2. GNP Implicit Price Deflator (1982 = 100)	121.3	126.6	132.0	4.4	4.3
3. GNP in Constant Dollars (billions of 1982 dollars)	4024.4	4132.0	4203.5	2.7	1.7
4. Unemployment Rate (percent)	5.5	5.3	5.4	-0.2[1]	0.1[1]
5. Corporate Profits After Taxes ($ billions)	168.9	172.4	176.1	2.1	2.1
6. Nonresidential Fixed Investment (billions of 1982 dollars)	493.8	511.0	526.0	3.5	2.9
7. New Private Housing Units Started (annual rate, millions)	1.5	1.4	1.5	-4.6[2]	4.1[2]
8. Change in Business Inventories (billions of 1982 dollars)	27.9	21.5	20.5	-6.4[3]	-1.0[3]
9. Treasury Bill Rate (3-month, percent)	6.7	8.1	7.4	1.4[1]	-0.6[1]
10. Consumer Price Index (annual rate)	4.1	5.1	4.7	1.0[1]	-0.4[1]

	Quarterly							
		1989		1990			Percent Change	
	1989 Q2 Actual	Q3	Q4	Q1	Q2	Q3	Q2 89 to Q2 90	Q3 89 to Q3 90
		Forecast						
1. Gross National Product ($ billions)	5194.9	5269.0	5342.0	5419.2	5524.0	5610.0	6.3	6.5
2. GNP Implicit Price Deflator (1982 = 100)	126.0	127.3	128.6	129.9	131.1	132.8	4.1	4.3
3. GNP in Constant Dollars (billions of 1982 dollars)	4123.9	4140.0	4158.0	4166.5	4185.1	4218.6	1.5	1.9
4. Unemployment Rate (percent)	5.3	5.3	5.4	5.4	5.4	5.4	0.1[1]	0.1[1]
5. Corporate Profits After Taxes ($ billions)	170.6	171.5	173.5	172.5	174.4	177.0	2.2	3.2
6. Nonresidential Fixed Investment (billions of 1982 dollars)	510.2	515.0	518.2	521.0	523.5	527.0	2.6	2.3
7. New Private Housing Units Started (annual rate, millions)	1.4	1.4	1.4	1.4	1.5	1.5	8.2[2]	5.7[2]
8. Change in Business Inventories (billions of 1982 dollars)	22.0	20.0	18.5	21.0	21.3	22.3	-0.8[3]	2.3[3]
9. Treasury Bill Rate (3-month, percent)	8.4	7.9	7.8	7.6	7.5	7.4	-0.9[1]	-0.5[1]
10. Consumer Price Index (annual rate)	6.6	4.3	4.5	4.7	4.6	4.6	-2.0[1]	0.3[1]

SOURCE: The National Bureau of Economic Research and American Statistical Association, Business Outlook Survey, September 1989. The figures on each line are medians of fifteen individual forecasts.

[1]Change in rate, in percentage points.
[2]Possible discrepancies in percentage changes are caused by rounding.
[3]Change in billions of dollars.

Somewhat Lower Inflation Expected Next Year

The median forecast of the GNP implicit price deflator (IPD) is 4.4 percent in 1988-9 and 4.3 percent in both 1989-90 and 1989:3-1990:3. In terms of the CPI, inflation rates are expected to average between 4.3 percent and 4.7 percent in 1989:3-1990:3. Most of the individual predictions fall between 4 percent and 5 percent, with the outliers near 3 percent and 6 percent.

The mean probability distributions of relative changes in IPD exhibit persistent and high uncertainty about inflation in 1990. However, the following table indicates a moderate decline in inflation forecasts since the June survey.

Percentage Change in IPD	*1988-9*	*1989-90*	*1989-90 (June)*
8 percent or more	0	4	4
6.0-7.9 percent	8	13	15
4.0-5.9 percent	76	56	61
Less than 4.0 percent	16	27	20

A Short-Lived Slowdown and Uncertain Improvement

The median forecasts of the annual growth rates in the economy's output are close to 1.6 percent for 1989:3, 1989:4, and 1990:2; 0.8 percent for 1990:1; and 3.2 percent for 1990:3. There are only three single-quarter de-

clines among the individual predictions and no declines of longer duration. The record shows that expectations of sluggish growth (below 2 percent annual rate) prevail for the second half of 1989, but that gradually they give way to expectations of higher growth rates later in 1990. Between 1989:3 and 1990:3, real GNP is expected to gain 1.9 percent.

Although 1990 should be better than the second half of 1989, according to the forecasts it will have less real growth than 1989 overall. Percentage distributions of the means, calculated from the probabilistic forecasts of output reported by the survey participants, indicate an almost 50–50 division between optimists and pessimists. Still, this is somewhat better than the corresponding results in the June survey, when pessimists outnumbered optimists 60–40.

Percentage Change in Real GNP	*1988–9*	*1989–90*	*1989–90 (June)*
4.0 percent or more	4	6	4
2.0–3.9 percent	73	45	39
0–1.9 percent	23	39	44
Negative	0	10	13

Lower Interest Rates, Too

The medians from the new NBER-ASA survey predict that the three-month Treasury bill rate will average 7.8 percent in 1989:3 (down from the actual 8.4 percent in 1989:2). Thereafter, the rate is forecast to decline by approximately 0.1 percent per quarter, to 7.4 percent in 1990:3. The median for 1990 is about the same; the range of forecasts is 6.5–8.9 percent. The corresponding mean is slightly higher (7.6 percent, with a standard deviation of 0.8 percent). As many as 80 percent of the forecasters expect the T-bill rate to be lower in 1990:3 than in 1989:2, and to be lower overall in 1990 than in 1989.

The yield on new high-grade corporate bonds also is predicted to decline from 9.7 percent in 1989:2 to 9.1 percent in 1989:3, then slightly to 9.0 percent in the first half of 1990. The forecasts for 1990:3 average 9.2 percent and range from 7.9–10.0 percent. Thus, most forecasters expect the long-term interest rates to be fairly stable in the year ahead but to stay considerably lower than they were in the first half of 1989.

Forecasts of both the bill rate and the bond yield declined since the previous survey.

Consumption Steady, Housing Weak but Improving

Real personal consumption expenditures are predicted to grow approximately in step with real GNP in 1989:3–1990:3 at 1.9 percent. Their gains in 1988–9 and 1989–90 should be 2.2 percent and 2.0 percent, respectively.

Housing starts are expected to decline by 4.6 percent in 1988–9 but to rise by 5.7 percent in 1989:3–1990:3 and 4.1 percent in 1989–90. For residential fixed investment in 1982 dollars, the corresponding median forecasts are -1.6 percent, 2.2 percent, and -0.2 percent.

Business Investment Relatively Strong

Nonresidential fixed investment in 1982 dollars is expected to increase by 3.5 percent in 1988–9, 2.3 percent in 1989:3–1990:3, and 2.9 percent in 1989–90, considerably above expected growth in real GNP.

Business inventory investment generally is expected to be positive. The inventory change is forecast to average a little above $20 billion of 1982 dollars in both 1989 and 1990, not much lower than in 1988. Although the individual forecasts vary a great deal for this volatile series, no absolute declines in inventories are anticipated.

Small Gains in Industrial Production, Corporate Profits, and Trade

Industrial production (output of manufacturing, mining, and utilities) is forecast to rise a strong 3.4 percent in 1988–9, but only 0.9 percent in 1989:3–1990:3, and 1.6 percent in 1989–90. For corporate profits after taxes in current dollars, the corresponding annual growth rates are 2.1 percent, 3.3 percent, and 2.1 percent.

Net exports of goods and services in millions of 1982 dollars are predicted to average -75 in 1988, -52 in 1989, and -47 in 1990. This implies a decrease in the real trade deficit reductions to be achieved. The forecasts reflect the recent revision of the underlying data.

Smaller Increases in Government Spending

Federal government purchases of goods and services in constant dollars are expected to rise 3.3 percent in 1988–9 and 0.3 percent in 1989–90. Defense outlays generally are expected to change very little or decline slightly in the year ahead.

Most forecasts imply moderate and steady real growth for state and local government purchases (2.5 percent in 1988–9, 2.6 percent in 1989:3–1990:3, and 2.3 percent in 1989–90).

Major Assumptions

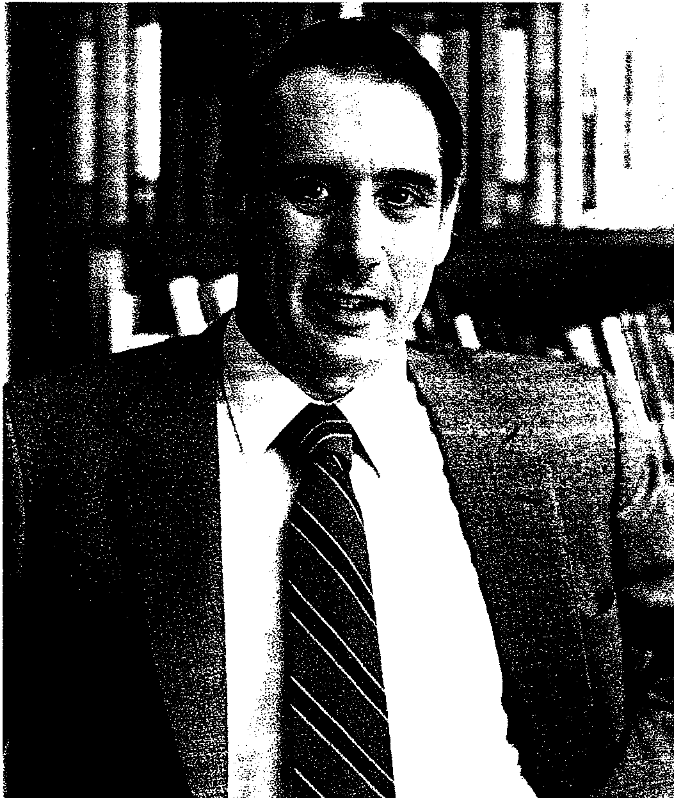
Most forecasters assume "no significant changes" in tax policy. Some respondents consider the probability of small tax increases and a reduction in the capital gains tax in the year ahead. The few reported assumptions about monetary growth rates are concentrated between 2 percent and 6–7 percent for both 1989 and 1990 and for both M1 and M2. The views on energy demand and prices are fairly evenly divided between those who expect stability and those who specify increases. The quoted prices of oil vary in the range of $15–22 per barrel. The views on the dollar are divided similarly between rises and declines, but most of the expected changes are described as "slight" or "moderate."

This report summarizes a quarterly survey of predictions by 15 business, academic, and government economists who are professionally engaged in forecasting and are members of the Business and Economics Statistics Section of the American Statistical Association. Victor Zarnowitz of the Graduate School of Business of the University of Chicago and NBER, assisted by Robert E. Allison and Deborah A. Nicholson of NBER, was responsible for tabulating and evaluating this survey.

NBER Profiles

William C. Brainard

William C. Brainard, a member of the NBER's Board of Directors since 1988, is the Frederick W. Beinecke Professor of Economics at Yale University. He joined the economics faculty at Yale as an assistant professor in 1962, and was named full professor in 1969.



Brainard received his B.A. from Oberlin College and his M.A. and Ph.D. degrees from Yale. He was provost of Yale University from 1981-6, and director of the Cowles Foundation for Research in Economics from 1971-3 and again from 1976-81. Brainard also has been a visiting professor at the University of California at San Diego and the University of Essex (England).

His work on financial markets has been published in the *American Economic Review* and in other leading journals. He is currently coeditor of the *Brookings Papers on Economic Activity.*

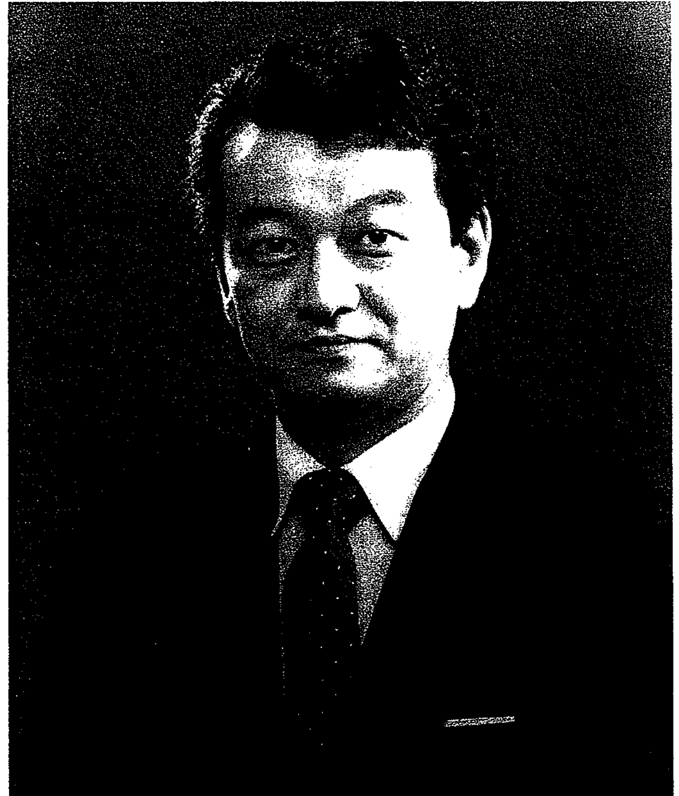
Brainard and his wife Ellen live in New Haven. They have three grown sons. He is an outdoor sports enthusiast and enjoys repairing old cars and houses.

Takatoshi Ito

Takatoshi Ito is a research associate in the NBER's Programs in Financial Markets and Monetary Economics and International Studies. He holds a B.A. and M.A. in economics from Hitotsubashi University (Tokyo), and an M.A. and Ph.D. in economics from Harvard University.

Ito was named assistant professor of economics at the University of Minnesota in 1979 and was promoted to associate professor in 1986. He also has had a joint appointment in East Asian Studies at Minnesota since 1983. Ito has taught macroeconomics, microeconomics, mathematical economics, and a course on the Japanese economy. He was a visiting professor at Stanford University in 1984-5 and at Harvard University in 1986-7.

Ito's work on the Japanese economy and on international finance (especially U.S.-Japan interdependence) has been published in many professional journals. Presently he is a coeditor of the *Journal of Japanese and International Economies.*

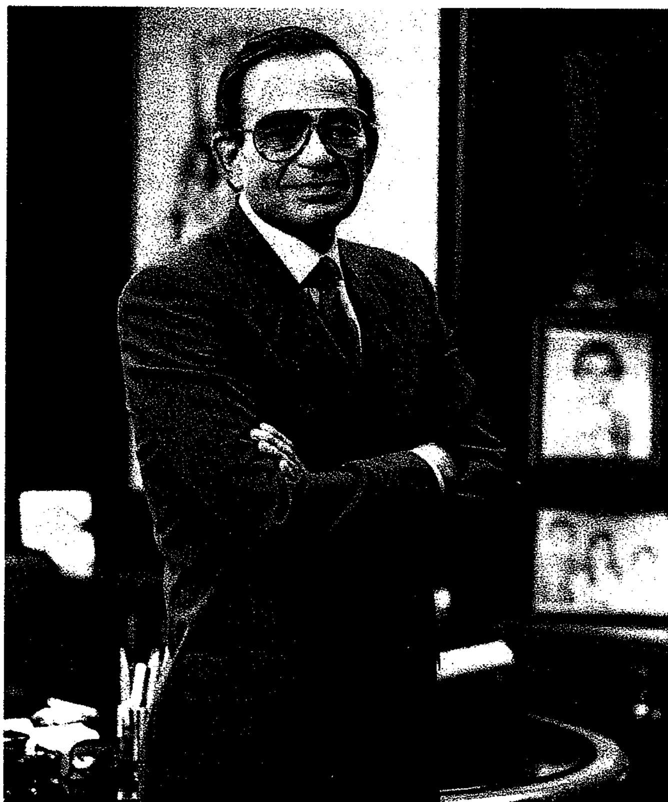


Ito and his wife, Keiko, have two children, Hana (4) and Ken (2). When he finds the time, Ito likes to play violin, accompanied by Keiko, who is a music therapist.

Leo Melamed

Leo Melamed, chairman of the Executive Committee of the Chicago Mercantile Exchange (CME), became a member of the NBER's Board of Directors in 1988. An attorney, Melamed received his Doctor of Jurispru-

dence (J.D.) degree from the John Marshall Law School (Chicago) in 1955.



Melamed is the founder and architect of financial futures, which he introduced at the CME in 1972. In 1982, he became chairman of the National Futures Association, a congressionally sanctioned self-regulatory body. He is also an advisor to the Commodity Futures Trading Commission, a federal agency, and has lectured and written extensively about financial futures markets. An active futures trader, Melamed is chairman of Dellsher Investment Company.

Melamed was editor of *An Anthology: The Merits of Flexible Exchange Rates*, published in 1988. He is a Life Master in bridge and authored a science fiction novel, *The Tenth Planet*, published in 1987.

Conferences

Information, Capital Markets, and Investment

The NBER held a conference on "Information, Capital Markets, and Investment" in Cambridge on May 5–6. Research Associate R. Glenn Hubbard of Columbia University organized the following program:

Bruce C. Greenwald, Bell Communications Research; Joseph E. Stiglitz, NBER and Stanford University; and Andrew Weiss, NBER and Boston University, "Models of Equity and Credit Rationing"
Discussant: Mark Gertler, NBER and University of Wisconsin

Roger E. A. Farmer, University of California at Los Angeles, "A.I.L. Theory and the Ailing Phillips Curve: A Contract-Based Approach to Aggregate Supply" (NBER Working Paper No. 3115)
Discussant: R. Glenn Hubbard

William A. Brock and Blake LeBaron, University of Wisconsin, "Liquidity Constraints in Production-Based Asset Pricing Models" (NBER Working Paper No. 3107)
Discussant: Bruce N. Lehmann, NBER and Columbia University

Michael Devereux, Institute for Fiscal Studies, London; and Fabio Schiantarelli, Boston University, "Investment, Financial Factors, and Cash Flow: Evidence from U.K. Panel Data" (NBER Working Paper No. 3116)
Discussant: Jeffrey K. MacKie-Mason, NBER and University of Michigan

Peter C. Reiss, NBER and Stanford University, "The Economic and Financial Determinants of Oil and Gas Exploration Activity" (NBER Working Paper No. 3077)
Discussant: John Meyer, Harvard University

John Meyer, and John Strong, College of William and Mary, "Free Cash Flow and Discretionary Investment: A Residual-Funds Study of the Paper Industry"
Discussant: Steven M. Fazzarri, Washington University

William Gale, University of California at Los Angeles, "Information, Collateral, and Government Intervention in Credit Markets" (NBER Working Paper No. 3083)
Discussant: Andrew Weiss

Jeffrey K. MacKie-Mason, "Does Internal Financing Differ from External?"
Discussant: David Scharfstein, MIT

Colin Mayer, City University, London, "Financial Systems, Corporate Finance, and Economic Development"
Discussant: Roger E. A. Farmer

Robert A. Korajczyk and Deborah Lucas, Northwestern University; and Robert L. McDonald, NBER and Northwestern University, "Stock Price and Earnings Behavior Around the Time of Equity Issues"
Discussant: Jeremy Stein, Harvard University

Takeo Hoshi, University of California at San Diego; Anil Kashyap, Federal Reserve Board; and David Scharfstein, "Bank Monitoring and Investment: Evidence from the Changing Structure of Japanese

Corporate Banking Relationships" (NBER Working Paper No. 3079)
Discussant: James Kahn, University of Rochester

John Pound, Harvard University; and Richard J. Zeckhauser, NBER and Harvard University, "Are Large Shareholders Effective Monitors? An Investigation of Share Ownership and Corporate Performance"
Discussant: Gary Gorton, University of Pennsylvania

Greenwald, Stiglitz, and Weiss consider the effects on investment decisions of equity and credit rationing at the firm level. They model the banking sector, which is assumed to be effectively constrained in raising new equity capital. The availability of credit to firms depends on the financial condition (accumulated internal net worth) to both firms and the banking sector, reinforcing the accelerator mechanism in investment. In the short run, the effects of monetary policy on investment and output are magnified through relaxation of financing constraints. Long-run dynamics are driven by rates of accumulation in capital and internal equity.

Farmer focuses on movements in interest rates in bringing about Phillips curve correlations in data. He stresses the role of the nominal interest rate: for the firm, the optimal contract trades off the opportunity cost of holding liquid balances against the benefits of additional liquidity. The benefits arise from the fact that liquidity buffers permit firms to offer more stable wages, facilitating more efficient employment decisions. Using data for the United States for 1931–86, Farmer finds that movements in the unemployment rate are negatively correlated with movements in inflation and corporate profits and positively correlated with movements in nominal interest rates.

Brock and LeBaron consider the impact of financial constraints on the market valuation of firms. They use a particular class of asset pricing models to analyze mean reversion in security returns and find that it is amplified by financing constraints: positive shocks to productivity affect a constrained firm's investment program more than the program of an unconstrained firm. Binding credit constraints are an important feature of mean-reverting returns in security markets.

Devereux and Schiantarelli use panel data on 689 U.K. manfacturing firms during 1969–86, to test for differences in the sensitivity of investment to the availability of internal funds for firms of different sizes and ages. They find that lagged measures of firm cash flow have an important effect on investment, holding constant investment opportunities (as measured by q); this effect is present for all sizes of firms. Devereux and Schiantarelli find that cash flow effects are particularly important for younger, smaller firms, perhaps because of information problems. They note that the cash flow effects for large firms could reflect their more diversified ownership structure and greater associated agency costs of finance.

Reiss analyzes investment behavior over the past decade for firms in oil and gas extraction. The large fluctuations in oil and gas prices led to significant changes both in investment opportunities and in the value of firms' net worth (as measured by the value of oil and gas reserves in place). Fluctuations in capital spending in the industry over this period were much more pronounced than in the economy as a whole. Reiss finds that during the 1986 downturn, shortages in internal finance accentuated declines in investment spending. He also finds that smaller producers experience relatively greater fluctuations in internal finance, and hence investment. A firm's liquidity position also affects its positions regarding ownership of wells. Smaller firms, and firms with less internal finance, hold significantly smaller interests in each well that they drill.

Meyer and Strong ask whether firms with larger "free" cash flows exhibit different investment behavior from other firms and whether these differences in investment behavior might lead to poorer or better financial performance. They consider investment decisions in 34 large paper companies from 1971 to 1986. The paper industry experienced substantial fluctuations in operating performance during that time, and has undergone considerable restructuring. Meyer and Strong confirm that discretionary investment is influenced by movements in residual funds. Moreover, links between discretionary investment and shareholder returns are consistent with an agency-cost interpretation: higher discretionary expenditures depress shareholder returns.

Gale considers the efficiency costs generated by using collateral as a sorting device when it is worth less to lenders than to borrowers. In equilibrium, relatively high-risk borrowers choose a contract with a high interest rate and low collateral requirement; low-risk borrowers choose to put up substantial collateral in exchange for a lower interest rate. As long as all borrowers have projects whose gross returns are greater than their social opportunity cost, government intervention can decrease the efficiency loss created by the use of collateral. Subsidies to unrationed borrowers will reduce the extent of rationing in the whole sector and will increase efficiency. On the other hand, interventions that target borrowers who are denied loans in private credit markets can raise the extent of rationing and reduce efficiency.

MacKie-Mason documents trends and patterns in incremental sources of financial capital at the industry and aggregate level and analyzes a large sample of incremental corporate financial decisions. He distinguishes between debt or equity financing and between privately or publicly marketed sources. Using data drawn from SEC-registered offerings, matched with COMPUSTAT data on firm characteristics, MacKie-Mason finds that problems of asymmetric information are an important determinant of financing choices. That is, firms are concerned with who provides their financing and not just with the standard factors thought to influence the mix of "debt" and "equity" finance.

In his overview of financing patterns in the United States, United Kingdom, Japan, Italy, Germany, France, Finland, and Canada, Mayer describes some common trends in corporate finance. Those patterns include

the dominance of internal funds in financing investment, the importance of bank finance as a source of external funds, and systematic variations in financing patterns across firms of various sizes. Mayer believes these common factors support recent models linking corporate finance to corporate control. The particular link he stresses is the claim that outside investors can make in the event of a default by insiders. In particular, assets specific to their current employment will be difficult to finance externally, and the use of external finance will be related negatively to the cost of organizing external control.

Korajczyk, Lucas, and McDonald note that stock prices increase just prior to an equity issue and then drop just after the issue. They assume that managers—who act in the interest of existing shareholders—have private information about the firm's true value. Korajczyk, Lucas, and McDonald find that price increases occur prior to secondary issues (large block sales by existing equity holders) that reveal information but have nothing to do with additions to the firm's capital. On the other hand, firms that issue equity experience a rise in Tobin's q prior to the issue and a subsequent fall: a pattern consistent with firms' issuing equity to finance growth opportunities.

In the early 1980s, Japan eased restrictions on issuing bonds abroad, and for the first time permitted the issuance of noncollateralized bonds in domestic securities markets. Firms' reliance on banks for debt finance diminished substantially during this period. Hoshi, Kashyap, and Scharfstein compare firms that decreased their reliance on main bank finance (seeking finance instead from domestic and foreign bond markets) with firms that retained their bank ties. For the latter group, investment remained insensitive to movements in firm liquidity (holding constant investment opportunities) before and after banking deregulation. For the former, investment spending became more sensitive to fluctuations in firm liquidity.

Pound and Zeckhauser outline the potential impact of large shareholders on insiders' incentives and the flow of information. They then use cross-sectional data on firms to test for systematic variation in performance among firms with large shareholders (after controlling for industry differences). Pound and Zeckhauser classify industries according to whether capital and investments are highly firm-specific. When assets are specific to the management, it is more difficult for large shareholders (acting as monitors) to improve performance. They find that earnings-price ratios (their measure of performance) are significantly lower for firms with large shareholders in industries in which assets are less specific and monitoring is easier. There is no comparable "large shareholder" effect for firms in industries in which assets are firm-specific.

Also attending were: Carliss Y. Baldwin and Benjamin M. Friedman, NBER and Harvard University; Ben S. Bernanke, NBER and Princeton University; David Bizer, Johns Hopkins University; Charles W. Calomiris, Northwestern University; Geoffrey Carliner, NBER; Andrew W. Lo and James M. Poterba, NBER and MIT; Frederic S. Mishkin, NBER and Columbia University; Bruce C. Petersen, Federal Reserve Bank of Chicago; Terry Vaughn, MIT Press; Mark A. Wolfson, Stanford University; and Stephen P. Zeldes, NBER and University of Pennsylvania.

The conference papers and discussions are expected to be published by the University of Chicago Press. The availability of the volume will be announced in the *NBER Reporter*.

International Seminar on Macroeconomics

The twelfth annual International Seminar on Macroeconomics (ISOM) was held in Paris on June 19-20. ISOM is cosponsored by the National Bureau of Economic Research, the Maison des Sciences de l'Homme, and the European Economic Association. This year it was hosted by the Banque de France at the Château de la Vrillière in Paris. ISOM is organized jointly by Robert J. Gordon of the NBER and Northwestern University and Georges de Ménil of the Ecole des Hautes Etudes en Sciences Sociales.

The major themes of this year's meeting were deregulation and trade liberalization in the context of Europe in 1992. Topics discussed included: welfare effects of trade liberalization; economic integration in imperfectly competitive markets; job security and employment; internal and external economies; industrial policy in the airline industry; intrafirm trade in the manufacturing industries; and financial deregulation in Japan. The papers and their discussants were:

Victor Norman, Norwegian School of Economics and Business Administration, "Assessing Trade and Welfare Effects of Trade Liberalization"
Discussants: William H. Branson, NBER and Princeton University; and Alan Winters, University College of North Wales

Anthony Venables, University of Southampton, "The Economic Integration of Oligopolistic Markets"
Discussants: Henryk Kierzkowski, Institute of Graduate Studies, Geneva; and Jean Waelbroeck, Free University of Brussels

Giuseppe L. Bertola, Princeton University, "Job Security, Employment, and Wages"
Discussants: Dennis Snower, Birkbeck College; and Jacques Mairesse, NBER and ENSAE

Ricardo J. Caballero, Columbia University; and Richard K. Lyons, NBER and Columbia University, "Internal versus External Economies in European Industry"
Discussants: Heinz König, Universität Mannheim; and Daniel Cohen, CEPREMAP

Gernot Klepper, Kiel Institute of World Economics, "Entry into the Market for Large Transport Aircraft"
Discussants: Robert W. Crandall, Brookings Institution; and Didier Laussel, Université d'Aix-Marseille II

Richard E. Baldwin, NBER and Columbia University, "Measuring 1992's Medium-Term Dynamic Effects"
Discussants: Paul R. Krugman, NBER and MIT; and Damien Nevin, INSAED

Takatoshi Ito, NBER and Hitotsubashi University, "Financial Deregulation and Money in Japan, 1985–8"
Discussants: Koichi Hamada, NBER and Yale University; and Yves Barroux, Banque de France

Norman's paper addresses two questions: Does the "new" international economics indicate significantly different effects of trade policy on the intersectorial pattern of international trade and the allocation of resources than the conventional theory of competitive advantage? Second, what modeling approach would incorporate the "new" trade theory into computable general equilibrium (CGE) models? Norman uses several numerical model experiments in which CGE models with product differentiation and reciprocal dumping are contrasted with comparative advantage models based on the approach developed by Paul Armington. Norman concludes that imperfect competition matters significantly for interindustry trade and the welfare effects of trade liberalization. Less aggressive competition reduces elasticities of equilibrium quantities, so that comparative advantage is not fully exploited. In addition, the Armington approximation is poor in regard to welfare effects and interindustry trade.

Venables uses a model of international trade under oligopoly to investigate the implications of two types of integration: reductions in the cost of trade, or reductions in the extent to which firms regard markets as being internationally segmented. Economic integration may change the degree of market segmentation and thereby may alter the nature of strategic interaction between firms in different countries. Expanding on his work with Smith, Venables uses a two-stage game model. Three separate points on the spectrum of market integration are identified as Nash equilibriums. Venables shows that if the initial equilibrium is of the intermediate type, then potential gains from further integration of the European market are lower than previous studies have estimated.

Bertola examines the arguments that the poor employment performance of European economies is caused by obstacles to firing that make labor less attractive to firms. Bertola also scrutinizes the theory that firing restrictions may allow incumbent workers to bargain for high wages as they disregard unemployment among "outsiders." He finds that job security provisions do not bias the firm's labor demand toward lower average employment at given wages, just as they do not bias wage determination toward higher wages and lower unemployment. Employment is more stable where job security provisions are stronger. In addition, the medium- and long-run employment performance of the countries Bertola considers appears unrelated to the extent of job security legislation in those countries. In countries with high job security, wages tend to be lower and more sensitive to "outside" unemployment, suggesting that wages are more strongly influenced by other factors than by job security provisions. In sum, the evidence suggests that job security provisions alone should not be blamed for the poor employment performance of European countries.

Caballero and Lyons estimate internal returns to scale and external economies for two-digit manufacturing industries in four European countries: West Germany, France, the United Kingdom, and Belgium. They find little evidence of increasing returns to scale. However, external economies are evident in all four countries, especially in France and Belgium. Failure to take external economies into account results in upward-biased estimates of internal elasticities of output with respect to capital and labor at the industry level. Caballero and Lyons conclude that economic integration will create substantial external economies and higher growth in many European industries.

European governments have been accused of unfairly subsidizing their large commercial aircraft industries. Klepper examines the likely results of market entry and estimates the additional cost that a firm faces when it is late in entering the market for transport aircraft. In the analysis, a capacity game is calibrated to the expected market for transport aircraft from 1987 to 2006. The results show that it takes a long time to overcome the disadvantage of late entry. Hence, without government subsidies, market entry is unlikely. Klepper finds that the scale and scope effects of production outweigh the output-reducing effects of a monopoly.

Baldwin examines a broad-based market liberalization stemming from the 1992 program in Europe as a source of dynamic gains, specifically in the marginal productivity of capital. In Solow and Arrow growth models, liberalization increases the steady-state capital-labor ratio, leading to a one-time upward shift in output greater than that suggested by the static effect. Baldwin attempts to gauge the effects of 1992 on a country-by-country basis. He finds that the dynamic gain is between 30 and 136 percent of the static effect. Hence, current EC estimates of the increase in GDP resulting from the 1992 integration are anywhere from 30 to 136 percent too small. Baldwin estimates that 1992 will raise GDP by between 3.1 and 25.4 percent. The imprecision of this range is a result of the lack of precise knowledge of the actual output elasticity of capital.

Ito evaluates the effect of recent financial deregulation in Japan on the behavior of money supply and demand. Deregulation in Japan has coincided with decreasing interest rates and a booming stock market, making it difficult to identify the source of the money supply increase. Therefore, Ito estimates the magnitude of deregulation by the size of a shift from conventional to new types of deposits. He finds that a major portion of the observed increases in large-amount time deposits and money market certificates comes from

decreases in other components of money, especially certificates of deposit and small-amount time deposits.

The conference also included a roundtable discussion entitled, "The Macroeconomic Environment of 1992." Among the participants were Michael L. Mussa of the University of Chicago, John Flemming of the Bank of England, and Jacob A. Frenkel of the NBER, the IMF, and the University of Chicago.

Selected papers from ISOM 1989 will be published in the *European Economic Review* in spring 1990.

Studies of Firms and Industries

About 40 economists met in Cambridge on July 11–12 for an NBER conference on Studies of Firms and Industries. Research Associates Timothy F. Bresnahan, Stanford University; R. Glenn Hubbard, Columbia University; and Ariel Pakes, Yale University, organized the following program:

Ricardo J. Caballero, Columbia University; and Richard K. Lyons, NBER and Columbia University, "The Role of External Economies in U.S. Manufacturing" and "Internal versus External Economies in European Industry" (This paper is described in "International Seminar on Macroeconomics.")

Frank R. Lichtenberg, NBER and Columbia University; and Donald Siegel, State University of New York at Stony Brook, "The Effects of Leveraged Buyouts on Productivity and Related Aspects of Firm Behavior" (NBER Working Paper No. 3022)

Steven N. Kaplan, University of Chicago, "Management Buyouts: Evidence on Post-Buyout Operating Changes"

William P. Rogerson, Northwestern University, "Profit Regulation of Defense Contractors and Prizes for Innovation"

Anil Kashyap and David W. Wilcox, Federal Reserve Board, "Production Smoothing at the General Motors Corporation during the 1920s and 1930s"

Thomas J. Holmes, University of Wisconsin at Madison; and James A. Schmitz, Jr., State University of New York at Stony Brook, "A Theory of Entrepreneurship and Its Applications to the Study of Business Transfers"

Timothy F. Bresnahan, and Peter C. Reiss, NBER and Stanford University, "How Much Does Entry Change Competition?"

Tito Boeri, New York University, "Product Choice, Growth of Incumbent Firms, Entry, and Exit"

Caballero and Lyons develop a method for joint estimation of internal returns to scale and external economies. They then estimate indexes of returns to scale for U.S. manufacturing industries at the two-digit level. Overall, they find that only three of the 20 industry categories show any evidence of internal increasing returns: primary metals, electrical machinery, and paper products. However, there is very strong evidence of external economies, defined as external to a given two-digit industry and internal to the United States. They estimate that if all manufacturing industries simultaneously raise their inputs by 10 percent, aggregate manufacturing production will rise by 13 percent, of which about 5 percent is caused by external economies. Thus, when an industry increases its inputs in isolation by 10 percent, its output rises by no more than 8 percent.

Based on 1100 manufacturing plants involved in leveraged buyouts (LBOs) during 1981–6, Lichtenberg and Siegel find that plants involved in LBOs had significantly higher rates of total factor productivity (TFP) growth than other plants in the same industry. The impact of LBOs on productivity is much larger than the authors' previous estimates of the impact of ownership changes in general on productivity. Management buyouts appear to have a particularly strong positive effect on TFP. Labor and capital employed tend to decline (relative to the industry average) after the buyout, but at a slower rate than they did before the buyout. The ratio of nonproduction-to-production labor cost declines sharply, and wage rates for production workers increase, following LBOs. Plants involved in management buyouts (but not in other LBOs) are less likely to close subsequently than other plants. The average R and D intensity of firms involved in LBOs increased at least as much from 1978 to 1986 as did the average R and D intensity of all firms responding to the NSF/ Census Survey of industrial R and D.

Kaplan presents evidence on changes in operating cash flows for a sample of 76 large management buyouts of public companies completed between 1980 and 1986. In the three years after the buyouts, these companies had increased operating income (before depreciation), decreased capital expenditures, and increased net cash flow (the difference between operating income and capital expenditures). Consistent with the operating changes, the (median) combined market adjusted return to pre-buyout public shareholders and post-buyout investors is 77 percent. Kaplan considers three explanations for the post-buyout changes: employment cuts, informational advantages held by managers, and the new incentives created by the buyout. The evidence is strongest for the incentive explanation.

Rogerson argues that constraints on information and incentives require that regulatory institutions create prizes for innovation. Since the quality of an innovation is difficult to describe objectively or to measure, the most natural method for awarding prizes is to allow firms to earn positive economic profit on production contracts. Rogerson calculates the value of the prizes offered on 12 major aerospace systems. The prizes clearly are large enough to support the contention that their existence is an important aspect of the current regulatory structure.

Kashyap and Wilcox examine the development and implementation of production control methods at the General Motors Corporation during the 1920s and 1930s. They show that GM's senior management understood the costs and benefits of production smoothing and implemented an aggressive program of production control roughly 30 years before the economics profession had formally studied the problem. Using new data for 1922 to 1940, Kashyap and Wilcox show that production often was smoother than sales, especially prior to the Great Depression. Critical to this finding, however, is explicit recognition of the importance of model changeover. Production smoothing became less evident after 1932, coincident with a major revision in corporate policy that had the effect of granting greater autonomy to the various divisions of the corporation, and limiting central control. In comparing these policies with current practices, two important lessons emerge. First, both then and now the production planning horizon is tied to the model year. Therefore, there is no direct link between business cycle conditions and inventory positions. Second, to the extent that seasonal variation in demand is an important factor in production and inventory planning, the planning problem has become easier over time because seasonal swings are now much less pronounced than in the prewar era.

Holmes and Schmitz formalize a view of entrepreneurship in which entrepreneurs respond to the opportunities for creating new products that arise because of technological progress. The theory has implications for entry and exit, specialization of labor, and business transfers. These business transfers correspond to individuals changing jobs and sales of firms, among other things. Transfers are seen as a mechanism facilitating division of labor.

Bresnahan and Reiss estimate the equilibrium number of producers in oligopolistic markets, recognizing the importance of scale economies and allowing for heterogeneity in entrants' costs. They show how firms' incentives to enter a market, because of an increase in market demand, depend on the strength of post-entry competition. Using this framework to estimate how entry affects competition in geographically concentrated retail and professional markets, Bresnahan and Reiss find that almost all of the variation in competitive conduct in markets with five or fewer firms occurs in monopolies and duopolies. By the time the market has three to five firms, the next entrant has little effect on competitive conduct.

Studies based on longitudinal samples of business units have found that: 1) job gains from entry of business units systematically exceed job losses caused by exit; 2) growth of incumbent units is unstable; and 3) the growth rate of continuing firms is heterogeneous within sectors. To explain this, Boeri focuses on the interaction between incumbent firms and entrants in a market with product differentiation and uncertainty about the evolution of consumers' preferences over varieties. In the presence of adjustment costs to changing the design of products, entrants might find a more favorable location than incumbent units and erode their market share. Because entry does not occur immediately after a shock, continuing firms temporarily "overshoot" the level of output that can be sustained by their choice of location.

Topics in Industrial Organization

The NBER held a conference on "Topics in Industrial Organization" in Cambridge on July 31 and August 1. NBER researchers Paul L. Joskow and Nancy L. Rose, both of MIT, organized the following program:

Severin Borenstein, University of Michigan, "Price Discrimination in Retail Gasoline Markets"
Discussant: Andrea L. Shepard, MIT

Ann F. Friedlaender, MIT, "Efficient Rail Rates and Deregulation"
Discussant: John R. Meyer, Harvard University

Michael A. Salinger, Columbia University, "A Test of Successive Monopoly and Foreclosure Effects: Vertical Integration between Cable Systems and Pay Service"
Discussant: Paul L. Joskow

Scott E. Masten and Edward A. Snyder, University of Michigan, and James W. Meehan, Jr., Colby College, "The Cost of Organization"
Discussant: Ingo Volgelsang, Boston University

Randal R. Rucker, North Carolina State University, and Keith B. Leffler, University of Washington, "Transaction Costs and Efficient Organization of Production: A Study of Timber Harvesting"
Discussant: R. Glenn Hubbard, NBER and Columbia University

William P. Rogerson, Northwestern University, "Profit Regulation of Defense Contractors and Prizes for Innovation" (This paper is summarized in "Studies of Firms and Industries" in this issue.)
Discussant: Michael D. Whinston, NBER and Harvard University

James Blumstein, Vanderbilt University; Randall Bovbjerg, Urban Institute; and Frank A. Sloan, NBER and Vanderbilt University, "Valuing Life and Limb in Tort: A Common Law of Damages and Insurance Contracts for Future Services"
Discussant: Joseph P. Newhouse, Harvard University

Michael Moore and W. Kip Viscusi, Duke University, "The Effect of Product Liability on Innovation"
Discussant: Roger G. Noll, Stanford University

Ralph Winter, University of Toronto, "The Dynamics of Competitive Insurance Markets"
Discussant: J. David Cummins, University of Pennsylvania

Why is the retail margin on regular unleaded gasoline consistently higher than the retail margin on regular leaded gasoline? The average difference grew from less than one cent in 1979 to more than five cents in 1986 but since has fallen to about two-and-a-half cents in 1989. Borenstein finds that cost-based explanations —focusing on differences in inventory costs, average size of purchases, or use of credit cards—explain little, if any, of the levels or changes in margin differences. Using a panel of gasoline prices in 57 SMSAs from 1984 to 1989, Borenstein finds price discrimination based on heterogeneity in buyers' costs of switching sellers. As the average income of buyers of leaded gas has fallen relative to the average income of buyers of unleaded gas, the margin difference has widened. After 1986, many stations stopped selling leaded gas—increasing the relative switching costs of buyers of leaded gas—and the margin on leaded gas has risen relative to the margin on unleaded gas. Changes in relative incomes explain a small proportion of the changes in margin differences. But the decline in the availability of leaded gasoline explains between one-quarter and one-half of the change in margin of differences since 1986.

Are "fair" rates to captive shippers compatible with "fair" rates of return for the railroads in the period of quasi-deregulation since 1980? To answer this, Friedlaender develops a model in which a public utility faces a breakeven constraint while selling in two sectors: a competitive one, in which price equals marginal cost, and a captive one, which has to bear the entire revenue burden. The markup in the captive sector depends on the degree of economies of scale and on the marginal-cost revenue shares in the captive and competitive sectors. Using the results of a cost function based on panel data of Class I railroads from 1974-86, Friedlaender shows that under reasonable assumptions concerning the appropriate measure of economies of scale, the two goals are not incompatible in the long run. Thus, the relevant policy question is not whether reregulation should be instituted but how to devise appropriate policies to move from the current situation, marked by a high degree of scale economies, to a long-run equilibrium marked by moderate scale economies.

Salinger compares the prices charged, and the services offered, by vertically integrated and unintegrated cable systems to test for successive monopoly and foreclosure effects. He finds that integrated cable systems are less likely to offer at least three pay channels, and somewhat less likely to offer four pay channels, than unintegrated systems are, but there is no significant difference in the prices charged for pay services by integrated and unintegrated systems.

Masten, Snyder, and Meehan suggest ways of overcoming difficulties inherent in direct tests of economic theories of organization. Specifically, they discuss problems in testing transaction-cost arguments and identify parallels to familiar selection and censoring problems. They then apply these methods to a sample of components from a large naval construction project. The data permit them to: 1) test the relationship between attributes of the transaction and the costs of organizing, both within and between firms; and 2) provide dollar estimates of those costs.

Rucker and Leffler examine the choice of selling privately owned standing timber by lump sum or per unit. Empirical results, obtained by using primary data on individual private timber sales contracts, support the predictions of a transaction cost model and reject several predictions from a risk-based model of contract choice.

Blumstein, Bovbjerg, and Sloan describe two possible reforms to our tort system: the first is a reporting system to record current damage awards that would have precedent value. Future jury awards in the middle half of the expected distribution would be presumptively valid, and more extreme findings would have to be justified explicitly. This approach would allow the law on appropriateness of damages to progress in common-law, monitored fashion rather than on the traditional ad hoc basis. The second proposal is a method of "structuring" damages for future medical care and other services to injured claimants. It would pay for future services not in cash (whether as a traditional lump sum at settlement or through newer annuity-like periodic payments), but instead by funding an actual service contract for necessary care.

The substantial rise in product liability costs has altered the financial incentives for innovation greatly. Higher liability costs increase the incentive to improve product safety and discourage firms from introducing new high-risk products. At very high levels of liability, firms will abandon innovation and focus on no-risk products, typically those characterized by generally accepted technologies. Moore and Viscusi use two large datasets for 1980-4. They match data from the PIMS survey on R and D, patents, and new product introductions with detailed information on insurance premiums and losses from the Insurance Services Office. They find that product liability has a nonlinear effect on innovation. At low liability levels, increases in liability costs increase measures of innovation, but this influence becomes negative at extremely high levels of innovation. The effects are stronger for product innovation than for process innovation, which is consistent with the greater importance of liability for design defects, as compared with manufacturing defects. The findings are robust across a variety of liability cost measures and are replicated using other data on R and D.

In the conventional economic treatment of insurance pricing, premiums equal the expected present value of claims. Winter offers an alternative, dynamic model of insurance markets based on two assumptions: first, risks are dependent because of common factors in the distribution of losses. This assumption, together with limited liability of insurers, implies that the industry stock of net worth or equity limits the amount of insurance that can be offered credibly at any time. Second, there is a cost advantage to internal capital over external equity in raising financing. An insurance cycle, or persistence of the gap between premiums

and the present value of claims, results. Tight markets or "crises" of high premiums and profits are caused by depletion of capacity (net worth) through bad draws on the common factors. Crises persist because insurers rationally prefer to wait out the rapid accumulation of retained earnings rather than to resort to costly external capital. Soft markets arise from the accumulation of retained earnings and persist because of the chance that the excess stock of internal equity will be needed in the future. In tight markets, gains to trade disappear in the riskiest times when there is dependence in the events of losses. In the context of liability insurance, this dependence is attributed to uncertain liability standards in tort law. Nonlinear pricing, such as coverage limits, arises because of dependence or common factors in the size of losses (for example, uncertain tort awards).

Also attending the conference were: Geoffrey Carliner, NBER; Richard E. Caves, Harvard University; Frank M. Gollop, Boston College; Zvi Griliches, NBER and Harvard University; Scott E. Harrington, University of South Carolina; Oliver D. Hart, Garth Saloner, and Jean Tirole, MIT; Alvin E. Klevorick, Richard C. Levin, and Ariel Pakes, NBER and Yale University; B. Peter Pashigian, University of Chicago; Robin A. Prager, Vanderbilt University; Peter C. Reiss, NBER and Stanford University; Michael H. Riordan, Boston University; and Carl Shapiro, NBER and Princeton University.

European Economic Integration

Twenty-five economists from the United States and Europe met in Cambridge on August 3-4 for a conference on "European Economic Integration: Towards 1992" sponsored by the NBER and the Centre for Economic Policy Research (CEPR). Willem H. Buiter, of NBER, Yale University, and CEPR, organized the following program:

Jeffrey D. Sachs, NBER and Harvard University; and Xavier Sala-I-Martin, Harvard University, "Federal Fiscal Policy and Currency Unions: Some Lessons for Europe from the United States"
Discussant: Willem H. Buiter

Francesco Giavazzi, NBER, University of Bologna, and CEPR; and Marco Pagano, University of Naples and CEPR, "Confidence Crises and Public Debt Management"
Discussant: Kenneth Kletzer, Yale University

Clas Wihlborg, Gothenburg University and University of Southern California, "Exchange Rate Arrangements for the Transition to a Common Currency" (jointly with Thomas Willett, University of Southern California)
Discussant: Vittorio U. Grilli, NBER, Yale University, and CEPR

Richard E. Baldwin, NBER and Columbia University, "On the Growth Effects of 1992" (This paper is described in "International Seminar on Macroeconomics.")
Discussant: David Ulph, University of Bristol and CEPR

Rick van der Ploeg, Center for Economic Research, Tilburg University, and CEPR, "Fiscal Aspects of Monetary Integration in Europe"
Discussant: Silvio Borner, University of Basel

Damien J. Neven, INSEAD and CEPR, "European Integration and Trade Flows" (jointly with Lars-Hendrik Roller, INSEAD)
Discussant: Alan Winters, University College of North Wales and CEPR

Vittorio U. Grilli and Nouriel Roubini, NBER and Yale University, "Financial Integration, Liquidity, and Exchange Rates"
Discussant: Lars E. O. Svensson, NBER and University of Stockholm

Sachs and Sala-I-Martin discuss the role of a federal fiscal government in a monetary union. They argue that a monetary union is more likely to survive if it is accompanied by a federal government that redistributes income from positively to adversely shocked regions so as to make nominal exchange rate adjustments less necessary. They find that, within the United States, a one dollar negative shock to the average U.S. region triggers higher federal transfers (between 6 and 10 cents) and lower federal taxes (between 28 and 30 cents), so the decrease in disposable income is only about 62 to 65 cents. Hence, more than one-third of the shock is absorbed by the federal government and most of the action comes from the tax side. They suggest that, without a fiscal union, a European Monetary Union (EMU) is not likely to survive.

Giavazzi and Pagano argue that under free capital mobility, confidence crises can result in devaluations if fiscal authorities can obtain temporary money financing, even when fixed exchange rates are viable. During a crisis, domestic interest rates increase, reflecting the expected devaluation. Rather than selling debt at punitive rates, fiscal authorities may turn to temporary money financing, leading to equilibriums with positive probability of devaluation. These equilibriums can be ruled out if the amount of debt maturing during the crisis is sufficiently small: a condition that can be met by reducing the stock of public debt, lengthening its average maturity, and/or smoothing the time distribution of maturing issues.

Wihlborg analyzes the transition from the current "fixed but adjustable" exchange rate system among most members of the European Community (EC) to an irrevocably fixed system within which a common currency gradually would be substituted for the old national currencies. Wihlborg argues that basic conflicts between short-run political goals and economic efficiency are likely to arise during any attempted transition. Strategies that provide the greatest short-term

benefits to national governments therefore may not provide the most efficient path for securing the longer-run objective of monetary union. Ironically, the possibility exists that, the more closely the economies moving toward monetary union meet some of the criteria for an optimal currency area emphasized in the traditional literature, the greater is the likely conflict between short-run political incentives and efficient paths toward full monetary union.

Van der Ploeg uses a two-country model to analyze fiscal aspects of monetary integration in Europe. When an adverse supply shock hits a two-country Mundell-Fleming world, it causes unemployment and a rise in the cost of living. He compares the optimal fiscal policies under international policy coordination with those pursued in the absence of international coordination. Van der Ploeg considers three exchange rate regimes: freely floating rates; managed exchange rates with hegemony (such as the European Monetary System [EMS]); and a symmetric regime of fixed exchange rates (like certain versions of the proposed EMU). He also considers the effects of comprehensive economic integration (1992), of indexation of wages to the cost of living, and of interactions and spillovers between Europe and the United States.

Neven studies intra-European trade flows and trade between Europe and the rest of the world for 29 manufacturing sectors over 1975–85. Contrary to some claims, European integration has not slowed down in recent years. Rather, European integration has proceeded alongside integration with the rest of the world. Neven finds evidence of significant unexhausted scale economies in European industry. Nontariff barriers to trade hamper trade between Europe and the rest of the world significantly more than they hamper intra-European trade.

Grilli and Roubini ask two questions suggested by the EC's decision to liberalize capital movements by 1990. First, will capital liberalization make it harder to maintain fixed exchange rate parities in the EMS area? Second, given the existence of large budget deficits and high public debt-GDP ratios in a number of EMS countries, will capital liberalization (together with the need to maintain fixed parities) make the financing and management of public debt more difficult? Using a model that has "cash-in-advance constraints" for transactions in financial markets as well as for transactions in goods markets, they find that capital controls (in the form of taxes on foreign asset acquisitions) tend to appreciate the currency in the country imposing the controls. That is because the controls reduce the share of foreign money used for asset transactions and thus increase the share used for goods transactions. Also, a move by a country toward a longer maturity structure of the public debt will tend to depreciate that country's currency by reducing the share of the country's money used for asset transactions. Countries that are simultaneously liberalizing capital movements and lengthening the maturity structure of their public debt therefore may expect to face a weakening of their currency. Finally, even when the monetary and real "fundamentals" are not subject to uncertainty, uncertainty about the process governing public debt issues can lead to volatility of nominal and real exchange rates. This increases the burden put on monetary policies in the pursuit of exchange rate stability.

U.S./Japan Conference on Aging

The National Bureau of Economic Research and the Japan Center for Economic Research jointly sponsored a conference on "The Economics of Aging" in Tokyo on September 8 and 9. The program was:

Laurence J. Kotlikoff, NBER and Boston University, "Some Macroeconomic Implications of Aging Populations"
Discussant: Yasushi Iwamoto, Osaka University

Yukio Noguchi, Hitotsubashi University, "Macroeconomic Implications of Population Aging"
Discussant: James H. Stock, NBER and Harvard University

Michael D. Hurd, NBER and State University of New York at Stony Brook, "The Economic Status of the Elderly in the United States"
Discussant: Toshiaki Tachibanaki, Kyoto University

Noriyuki Takayama, Hitotsubashi University, "Household Asset and Wealth Holdings in Japan"
Discussant: Michael D. Hurd

Daniel McFadden, NBER and MIT, "Problems of Housing the Elderly in the United States"
Discussant: Miki Seko, Nihon University

Seiritsu Ogura, Saitama University, "Cost of Aging: Public Finance Perspective for Japan"
Discussant: Laurence J. Kotlikoff

Alan M. Garber, NBER and Stanford University, "Financing Health Care for Elderly Americans in the 1990s"
Discussant: Hiroo Urushi, Sophia University

Shuzo Nishimura, Kyoto University, "Health Care Demand by the Elderly in the Japanese Growing Economy"
Discussant: Martin Feldstein, NBER and Harvard University

Robin Lumsdaine, Harvard University, and David A. Wise, NBER and Harvard University, "Aging and Labor Force Participation: A Review of Trends and Explanations"
Discussant: Haruo Shimada, Keio University

Atsushi Seike, Keio University, "The Effect of the Employee Pension on the Labor Supply of the Japanese Elderly"
Discussant: Edward P. Lazear, NBER and University of Chicago

Kotlikoff suggests that declining saving rates over the first half of the next century will be associated with higher real wage rates and more capital per worker. These increased real wages will help to absorb the significant cost of projected increases in Social Security tax rates.

Noguchi predicts that the aging of the Japanese population, which is occurring much more rapidly than the aging of the U.S. population, will lead to reduced saving in Japan. Indeed, he suggests that Japan might become a capital-importing country in the next century. Noguchi argues that over the next two decades the Japanese government should expand investment in housing and urban infrastructure; after that, it will be difficult to allocate sufficient resources for that investment because of the shortage of national saving. He further suggests that an increase in Japanese domestic spending is desirable for international harmony. Both Kotlikoff and Noguchi emphasize that their results are sensitive to model specification. Current estimates of the effect of aging on national saving vary widely, they acknowledge.

Hurd reports that the elderly in the United States are at least as well off, and possibly substantially better off, than the nonelderly. In addition, they are well protected from inflation because much of their income, including Social Security, is indexed. In the relatively near future, the economic status of the elderly who are currently retired seems well assured, according to Hurd. However, in the more distant future, when the baby-boom generation retires and there are many more retirees per employed person, the consumption of the elderly relative to the consumption of employed persons will be lower then than it is today.

Takayama finds that the elderly in Japan are wealthier than the working-age population. Because of the recent rapid rise in Japanese land prices, the difference between the wealth of the old and the wealth of the young has widened. As in the United States, equity in housing is the major asset of most elderly households. Under current circumstances, Takayama emphasizes, a young person who works all his life will be unable to buy a home in a Tokyo suburb if he has to depend on his own earnings. Takayama also points to the need of older Japanese to liquidate home assets by using equity conversion schemes, such as reverse annuity mortgages.

McFadden finds that the share of income spent on shelter rises with age in the United States, primarily because income falls more rapidly than payments for housing, but also because real housing prices increased substantially at the end of the 1970s. This supports the common perception that the elderly are being squeezed by housing costs. On the other hand, the pattern of mobility among the elderly and the housing choices made when the elderly *do* move suggest no significant "bottled-up" demand for converting housing equity to income. There appear to be no major market barriers that prevent the elderly from choosing between nonliquid and liquid assets. McFadden also suggests that the baby-boom generation will face more difficult economic circumstances in retirement than the previous generation did.

Ogura discusses the implications of Japan's aging population for the cost of health care and public retirement benefits. As in the United States, public health insurance in Japan provides health care to the elderly at little or no cost to the patient. Apparently as a consequence, the per capita cost of health care for the elderly has risen sharply in recent years. Nonetheless, health care in Japan costs only about 6 percent of GNP, approximately half of the cost in the United States. In 1973, benefits under the Japanese public pension plans were increased substantially, and subsequent costs increased very rapidly. According to Ogura's analysis, the cost of both health insurance and pension plans will continue to increase sharply in the next several decades and will peak around the year 2021, when the cost of government medical programs will be about 50 percent higher than it is today and the cost of public pension plans will double. Together, the two plans will absorb about one-quarter of national income, about ten percentage points more than the current cost. Ogura questions whether future generations of workers will be willing to continue to support the elderly at the levels that they have been supported in the recent past.

Garber surveys demographic trends that influence the utilization of health care in the United States and examines the key financial issues surrounding hospital and physicians' services for the elderly. He also discusses the obstacles to improved financing and delivery of long-term care. Garber argues that marketing long-term care insurance to younger persons should help to prevent the adverse selection that mitigates against selling long-term care insurance to elderly persons. Nonetheless, because of the open-ended nature of potential long-term care services, moral hazard will remain an obstacle to the efficient functioning of a long-term care insurance market. As larger numbers of people purchase long-term care insurance, nursing homes are likely to change, providing high-quality housing and related services, Garber emphasizes. Many individuals who would not consider entering a nursing home today would be willing to do so if quality improved in this sense. Garber concludes that the development of private financing mechanisms is likely to be the major response to the need for long-term care.

Nishimura emphasizes the increase in health care expenditure since 1973 in Japan. He suggests that this is caused in large part by the very low cost of health care under government health insurance plans. He shows that since 1973 per capita health care expenditures for the elderly have risen much more rapidly than per capita expenditures for the population as a whole.

Lumsdaine and Wise summarize trends in the labor force participation of older Americans. They show that the labor force participation rates of men 60 and older remained essentially constant from 1870 through 1937, but then began to decline and are still falling. Lumsdaine and Wise attribute that decline to the introduction of Social Security and private pension plans, which provide most of the support for the majority of retirees; most older Americans have very little personal saving. Personal wealth is primarily in the form of housing equity, which tends not to be converted to liquid assets as the elderly age. Both the provisions of Social Security and firm pension plans and the income from them tend to encourage early retirement. Although persons are living longer and longer, they are leaving the labor force at younger and younger ages. The trend is unrelated to personal saving but rather is associated with government promises of Social Security benefits after retirement and the saving by employers for their employees through firm pension plans.

Seike studies the effect of government pensions on the labor supply of older Japanese. Labor force participation of both older Japanese and older Americans is declining. Still, Japanese labor force participation rates are about twice as high as comparable U.S. rates. For men over 65, for example, the participation rate is 37 percent in Japan compared with 17 percent in the United States. Seike shows that the government pension plan for employees contributes significantly to withdrawal of older employees from the labor force. The lump-sum tax imposed by the earnings test in Japan, similar to the U.S. Social Security earnings test, substantially reduces the labor supply of those who are receiving retirement benefits.

In summary, the Japanese and the American papers revealed striking similarities between the two countries. The populations in both countries are aging rapidly, although the rate is faster in Japan than in the United States. Workers are leaving the labor force at younger ages in both countries, although the trend is much more pronounced in the United States than in Japan. In both countries, earlier retirement may be attributed in large part to public and private pension benefits. Public health insurance that provides health care at little or no cost to patients contributed to rapid increases in costs of health care in both countries, although the per capita cost in Japan is still only half of the U.S. per capita health care cost. Housing equity is the primary asset of both elderly Americans and elderly Japanese. In both countries, the elderly are at least as well off as younger members of the population. Although Japan's national saving rate is much higher than the U.S. rate, both Japanese and American authors predict that population aging will reduce future saving rates in both countries. The cost of health care and, more generally, the prospect of a smaller proportion of employed persons supporting an expanding proportion of retired persons are important concerns in both countries.

Economic Growth

The NBER held a Conference on Economic Growth in Cambridge on October 6–7. Robert J. Barro, NBER and Harvard University, and Paul M. Romer, NBER and University of Chicago, organized the following program:

Jess Benhabib and Boyan Jovanovic, New York University, "Externalities and Growth Accounting"
Discussant: Stanley Fischer, NBER, MIT, and World Bank

Robert J. Barro, and Xavier Sala-I-Martin, Harvard University, "Economic Growth and Convergence across the United States"
Discussant: Anne O. Krueger, NBER and Duke University

Dale W. Jorgenson, Harvard University, and Peter J. Wilcoxen, University of Melbourne, "Environmental Regulation and U.S. Economic Growth"
Discussant: Timothy J. Kehoe, Federal Reserve Bank of Minneapolis

Ricardo J. Caballero, Columbia University, and Richard Lyons, NBER and Columbia University, "The Role of External Economies in U.S. Manufacturing" (NBER Working Paper No. 3033) (This paper is summarized in "Studies of Firms and Industries" in this issue.)
Discussant: Kevin M. Murphy, NBER and University of Chicago

Philippe Aghion, MIT, and Peter Howitt, University of Western Ontario, "A Model of Growth through Creative Destruction"
Discussant: Nancy Stokey, Northwestern University

Sebastian Edwards, NBER and University of California at Los Angeles, "Openness, Outward Orientation, Trade Liberalization, and Economic Performance in Developing Countries" (NBER Working Paper No. 2908)
Discussant: Rudiger W. Dornbusch, NBER and MIT

Jeremy Greenwood, Federal Reserve Bank of Minneapolis, and Boyan Jovanovic, "Financial Development, Growth, and the Distribution of Income"
Discussant: Kenneth S. Rogoff, NBER and University of California at Berkeley

Using quarterly and annual postwar U.S. aggregate data on the growth of output, labor, and capital, Benhabib and Jovanovic find no evidence of increasing returns to scale in the aggregate production function, or of a large positive externality on the capital input. This agrees with the findings of most others who look at the microdata on R and D expenditures. They also examine inputs and output over longer periods. They find that the simultaneity problems caused by the correlation between the inputs and the production function disturbance persist in long-run averages of growth rates. The puzzle that the macrodata present, then, is not that externalities are very large but that we need not appeal

to externalities at all to understand long-run movements in aggregates.

Do poor countries tend to grow faster than rich ones, so that income and production levels converge over time? Barro and Sala-I-Martin find substantial indications of convergence among the 48 contiguous states: poor states tend to grow faster than rich ones. However, the authors also find that the variance of income across states has not declined over time.

The rate of U.S. economic growth fell sharply in the 1970s and has remained low throughout the 1980s. One factor often held responsible is the increase in environmental regulation. Jorgenson and Wilcoxen analyze the economic impact of pollution controls by simulating the growth of the U.S. economy with and without regulation. They construct a model of the economy that includes the determinants of long-term growth and find that environmental regulation has been an important contributor to the growth slowdown. They also find that the cost of emission controls is more than 10 percent of the total cost of government purchases of goods and services.

Aghion and Howitt present a model in which economic growth results exclusively from technological progress, which in turn is the result of innovations produced by competitive research firms. Each innovation consists of a new line of intermediate goods that can be used to produce final output more efficiently than before. Research firms are motivated by the prospect of monopoly rents. Those rents will be destroyed by the next innovation, which will render obsolete the existing line of intermediate goods. In the model there is an equilibrium with a constant allocation of labor between research and manufacturing. Aghion and Howitt show that laissez-faire may produce too much or too little research and that cyclical equilibriums are possible.

Edwards asks how trade regimes determine economic performance and growth in developing countries. He argues that a key limitation of previous work has been its inability to create measures of trade orientation that are objective, continuous, and comparable across countries. Edwards develops a growth model that relates trade orientation to the ability to absorb technological progress from the rest of the world. He tests the model using a new index of trade orientation that is free of earlier limitations. Edwards finds that countries with a less distorted external sector grow faster than countries with a more distorted external sector.

Greenwood and Jovanovic present a model in which both the extent of financial intermediation and the rate of economic growth are determined endogenously. Financial intermediation promotes growth because it allows a higher rate of return to be earned on capital. Growth in turn provides the means to implement costly financial structures. Thus, financial intermediation and economic growth are inextricably linked. The model also generates a development cycle: in the transition from a primitive, slow-growing economy to a developed, fast-growing one, a nation passes through a stage in which the distribution of wealth across the rich and poor widens.

Also attending the conference were: Costas Azariadis, University of Pennsylvania; Geoffrey Carliner, NBER; Zvi Griliches, NBER and Harvard University; Larry E. Jones and Sergio Rebelo, Northwestern University; Nathaniel H. Leff, Columbia University; Glenn McDonald, University of Western Ontario; Rodolfo E. Manuelli, Stanford University; Ariel Pakes, NBER and Yale University; Edward C. Prescott, Federal Reserve Bank of Minneapolis; Andrei Shleifer, NBER and University of Chicago; and Kenneth L. Sokoloff, NBER and University of California at Los Angeles.

Conference Calendar

Each *NBER Reporter* includes a calendar of upcoming conferences and other meetings that are of interest to large numbers of economists (especially in academia) or to smaller groups of economists concentrated in certain fields (such as labor, taxation, finance). The calendar is primarily intended to assist those who plan conferences and meetings, to avoid conflicts. **All activities listed should be considered to be "by invitation only," except where indicated otherwise in footnotes.**

Organizations wishing to have meetings listed in the Conference Calendar should send information, comparable to that given below, to Conference Calendar, National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. Please also provide a short (fewer than fifty words) description of the meetings for use in determining whether listings are appropriate for inclusion. The deadline for receipt of material to be included in the Winter 1989/90 issue of the *Reporter* is December 1. If you have any questions about procedures for submitting materials for the calendar, please call Kirsten Foss Davis at (617) 868-3900.

December 4, 1989
Program Meeting: Productivity, NBER

December 4-5, 1989
Environmental Challenge: The Energy Response, Royal Institute of International Affairs*

December 8-9, 1989
Universities Research Conference: Labor Markets in the 1990s, NBER

December 8-10, 1989
General Equilibrium Theory, Conference on Econometrics and Mathematical Economics

December 14-15, 1989
Panel on Economic Activity: Microeconomics, Brookings Institution

December 15-16, 1989
Program Meeting: International Studies: "International Competitiveness," NBER

December 28-30, 1989
Annual Meeting, American Economic Association*

December 28-30, 1989
North American Winter Meeting, Econometric Society*

January 4-6, 1990
Mismatch and Labor Mobility, Center for Economic Policy Research

January 4-6, 1990
1990 Special International Conference, International Association for Energy Economics*

January 4-6, 1990
Winter Conference, American Statistical Association*

January 7-8, 1990
Conference on Corporate Finance, NBER, Tokyo Center for Economic Research, and Center for Economic Policy Research

January 22-23, 1990
European Financial Integration, Center for Economic Policy Research

February 2, 1990
Program Meeting: Economic Fluctuations, NBER

February 2-3, 1990
Political Economy, NBER

February 9-10, 1990
Firms and Industries, NBER

February 27-28, 1990
Policy Seminar, National Association of Business Economists*

March 1, 1990
The Impact of 1992 on European Trade and Industry, Center for Economic Policy Research

March 2, 1990
Higher Education, NBER

March 9-10, 1990
5th Annual Macroeconomics Conference, NBER

*Open conference, subject to rules of the sponsoring organization.

March 16-17, 1990
Conference on Trade, NBER

March 16-17, 1990
3rd Annual InterAmerican Seminar on Economics, NBER

March 17-23, 1990
International Atlantic Economic Conference, Atlantic Economic Association*

March 22-24, 1990
Conference on Financial Crisis, NBER

March 29-31, 1990
Annual Meeting, Midwest Economics Association*

April 5-6, 1990
Panel on Economic Activity, Brookings Institution

April 5-7, 1990
Conference on Aging, NBER

April 5-7, 1990
1990 Annual Meeting, Eastern Finance Association*

April 12-14, 1990
Conference on Economic Growth, NBER

April 19-20, 1990
Program Meeting: Taxation, NBER

April 27, 1990
Macroeconomic History, NBER

April 20-21, 1990
Carnegie-Rochester Public Policy Conference, Carnegie-Mellon University—University of Rochester

May 1, 1990
Macroeconomic Policy and the External Constraint, Center for Economic Policy Research

May 4-5, 1990
Conference on Research in Income and Wealth: Measurement Issues in the Service Sector, NBER

May 11-12, 1990
Universities Research Conference, Financial Markets and Monetary Economics, NBER

May 14-15, 1990
Politics and Economics in the Eighties, NBER

May 14-15, 1990
Regulating International Financial Markets, Columbia (with MOF, FAIR)*

May 18-19, 1990
Conference on Populist Economics in Latin America, NBER

May 21-22, 1990
Spring Symposium, National Tax Associatiation-Tax Institute of America*

June 14-16, 1990
Economic Policy in Political Equilibrium, Center for Economic Policy Research

*Open conference, subject to rules of the sponsoring organization.

June 19-21, 1990
1990 12th Annual International Conference, International Association for Energy Economics*

June 28-30, 1990
1990 Meetings, Society for Economic Dynamics and Control*

June 29-July 3, 1990
65th Annual International Conference, Western Economic Association*

August 6-9, 1990
Joint Statistical Meetings, American Statistical Association'

August 22-29, 1990
World Congress, Econometric Society*

August 26-30, 1990
46th Conference: Public Finance with Several Levels of Government, International Institute of Public Finance*

September 13-14, 1990
Panel on Economic Activity, Brookings Instution

September 23-26, 1990
Annual Meeting, National Association of Business Economists*

October 18-20, 1990
Annual Research Conference, Association for Public Policy Analysis and Management*

October 18-21, 1990
Conference on American Economic Policy, NBER

November 11-14, 1990
83rd Annual Conference on Taxation, National Tax Associatiation–Tax Institute of America*

November 18-20, 1990
Annual Meeting, Southern Economic Association*

December 28-30, 1990
Annual Meeting, American Economic Association*

January 4, 1991
US/Japan Housing Markets, NBER

March 21-24, 1991
Conference on Economic Crisis, NBER

April 4-6, 1991
Annual Meeting, Midwest Economic Association*

August 19-22, 1991
Joint Statistical Meetings, American Statistical Association*

August 25-29, 1991
47th Conference, International Institute of Public Finance*

September 22-25, 1991
Annual Meeting, National Association of Business Economists*

October 11-14, 1991
International Atlantic Economic Conference, Atlantic Economic Society*

November 24-26, 1991
Annual Meeting, Southern Economic Association*

**Open conference, subject to rules of the sponsoring organization.*

Bureau News

Bureau Mourns Fabricant

NBER Research Associate Emeritus Solomon Fabricant died on September 13, two days before his 83rd birthday. He had been involved with the Bureau throughout his career as an economist and he will be sorely missed.

Fabricant was born in Brooklyn in 1906. He received his bachelor's degrees from City College and New York University (NYU) and worked as an accountant from 1925 to 1929. In 1930 he received a master's degree from Columbia University and joined the NBER staff. He received a Ph.D. from Columbia in 1938.

Fabricant began his teaching career at NYU as a lecturer in 1946. He became an associate professor in 1947 and a full professor in 1948. Fabricant also served as the Bureau's research director from 1953 to 1965. He joined the NBER's Board of Directors in 1955 and became a director emeritus in 1981.

Fabricant's first Bureau publication, "Recent Corporate Profits in the United States," appeared in 1934. Over the next 50 years, he produced a steady stream of research on a wide variety of topics, including manufacturing output and employment, business cycles, savings, government employment, and productivity change. His last Bureau publication was a brief history, entitled "Toward a Firmer Basis of Economic Policy: The Founding of the National Bureau of Economic Research."

1989-90 Olin Fellows

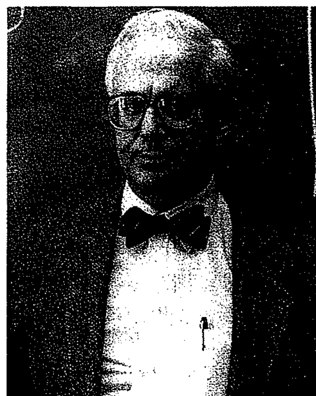
The four Olin Fellows for 1989-90 are: Alberto Alesina, Alan B. Krueger, Karen Lewis, and David Scharfstein. The Fellows Program is made possible by a grant from the John M. Olin Foundation.

Alesina is on leave from Harvard University; his research will examine the interaction of politics and economics in formulating fiscal and monetary policy. Krueger, who comes to the NBER from Princeton University, will study various aspects of the U.S. labor market. Lewis, who is on the faculty of New York University's Graduate School of Business Administration, will investigate the fluctuations in exchange rate and asset markets. Scharfstein, of MIT's Sloan School of Management, will analyze the relationship between corporate financial structure and investment.

New Directors Named

The NBER's Board of Directors elected six new members at its September meeting: Jagdish Bhagwati, representing Columbia University; Franklin Fisher, MIT; Gail Fosler, The Conference Board; Ronald Gallant, American Statistical Association; Craig Swan, University of Minnesota; and Michael Yoshino, Harvard University.

Jagdish Bhagwati



Franklin Fisher

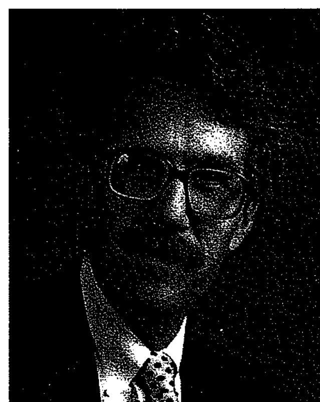
Bhagwati has been the Arthur Lehman Professor of Economics at Columbia since 1981, and a professor of political science there since 1986. He studied at Bombay University and Oxford University, received his M.A. from Cambridge University, and has a Ph.D. from MIT. He taught economics at MIT from 1968–80.

Fisher, an NBER research associate since 1980, has taught economics at MIT since 1960. He received his A.B., M.A., and Ph.D. degrees from Harvard University. Fisher was the 1973 winner of the John Bates Clark Award of the American Economic Association.

Fosler is chief economist and executive director of the economics program at the Conference Board. Previously, she was the chief economist and deputy staff director for the Senate Budget Committee, acting as principal economic advisor to Senator Pete Domenici. Fosler has a B.A. from the University of Southern California and an M.B.A. from New York University.

Gail Fosler

Ronald Gallant



Craig Swan

Michael Yoshino

Gallant is a professor of statistics and economics at North Carolina State University and an adjunct professor of economics at Duke University. He also has taught at Northwestern University and the University of Chicago. Gallant received his A.B. from San Diego State University, his M.B.A. from the University of California at Los Angeles, and his Ph.D. from Iowa State University.

Swan is an associate dean and executive officer at the University of Minnesota, where he has taught since 1969. He holds a B.A. from the University of California at Berkeley, and an M.A. and Ph.D. from Yale University. Swan was president of the Minnesota Economics Association in 1985–6.

Yoshina is a professor of business administration and a director of research at the Harvard Business School. He has also taught at the University of California and has done research at Stanford University. Yoshino received his M.B.A. at Columbia University and his Ph.D. from Stanford.

1989 Summer Institute

Over 600 economists from 58 universities and organizations around the world attended the NBER's Eleventh Annual Summer Institute. This year's program was funded primarily by a grant from the Lynde and Harry Bradley Foundation, with additional support from the National Science Foundation. There were 31 separate workshops on topics including international taxation, corporate finance, asset pricing models, credit market failures, unemployment, higher education, international macroeconomics, aging, and state and local government finance. A catalog of all papers and work in progress discussed at the Summer Institute can be obtained by writing to: Summer Institute Catalog, NBER, 1050 Massachusetts Avenue, Cambridge, MA 02138.

1989-90 Research Associates

Andrew B. Abel
John M. Abowd
Katharine G. Abraham
Joshua Aizenman
George A. Akerlof
Steven G. Allen
Kathryn H. Anderson
Albert Ando
Orley C. Ashenfelter
Jeremy Atack
Alan J. Auerbach
Martin Neil Baily
Carliss Y. Baldwin
Robert E. Baldwin
Robert J. Barro
Ann P. Bartel
Ben S. Bernanke
Ernst R. Berndt
B. Douglas Bernheim
Olivier Jean Blanchard
Daniel Blanchflower
Francine D. Blau
Alan S. Blinder
David E. Bloom
Zvi Bodie
Michael D. Bordo
George J. Borjas
David F. Bradford
James A. Brander
William H. Branson
Timothy F. Bresnahan
Charles C. Brown
Michael Bruno
Willem H. Buiter
Jeremy I. Bulow
John Y. Campbell
David Card
Dennis W. Carlton
Stephen G. Cecchetti
Gary Chamberlain
Kim B. Clark
Charles T. Clotfelter
Douglas Coate
George M. Constantinides
Russell Cooper
Hope Corman
Partha S. Dasgupta
Lance E. Davis
Jorge Braga de Macedo
Angus S. Deaton
William T. Dickens
W. Erwin Diewert
Rudiger W. Dornbusch
Bernard Dumas
Jonathan Eaton
Sebastian Edwards
Ronald G. Ehrenberg
Barry J. Eichengreen
David T. Ellwood
Stanley L. Engerman
Robert F. Engle III
Ray C. Fair
Henry S. Farber
Daniel R. Feenberg
Robert C. Feenstra
Martin Feldstein
Franklin M. Fisher
Marjorie Flavin
Roderick Floud
Robert W. Fogel
Richard G. Frank
Jeffrey A. Frankel
Richard B. Freeman
Kenneth R. French
Benjamin M. Friedman
Victor R. Fuchs
Don Fullerton
Melvyn A. Fuss
David W. Galenson
Robert E. Gallman
Alan M. Garber
Peter M. Garber
Paul J. Gertler
Francesco Giavazzi
Claudia D. Goldin
Fred Goldman
Robert J. Gordon
Roger Hall Gordon
John W. Graham III
Alan G. Green
Jerry R. Green
Zvi Griliches
Reuben Gronau
Gene M. Grossman
Herschel I. Grossman
Michael Grossman
Sanford J. Grossman
Alan L. Gustman
Michael R. Haines
Robert E. Hall
Koichi Hamada
Daniel S. Hamermesh
Lars Peter Hansen
Jeffrey E. Harris
Jerry A. Hausman
Fumio Hayashi
James J. Heckman
John F. Helliwell
Elhanan Helpman
Patric H. Hendershott
Dale W. Henderson
J. Vernon Henderson
Robert J. Hodrick
Charles Y. Horioka
R. Glenn Hubbard
Charles R. Hulten
Michael D. Hurd
Robert P. Inman
Yannis M. Ioannides
Takatoshi Ito
George E. Johnson
Paul L. Joskow
Theodore J. Joyce
Kenneth L. Judd
Alex Kane
Edward J. Kane
Louka T. Katseli
Lawrence F. Katz
James R. Kearl
Mervyn A. King
Alvin E. Klevorik
Laurence J. Kotlikoff
Irving B. Kravis
Anne O. Krueger
Paul R. Krugman
Naomi R. Lamoreaux
Edward P. Lazear
Edward E. Leamer
John B. Legler
Bruce N. Lehmann
Jonathan S. Leonard
Richard M. Levich
Richard C. Levin
Eugene Lewit
Frank R. Lichtenberg
Robert E. Lipsey
Andrew W. Lo
Robert E. Lucas, Jr.
Harold S. Luft
Thomas E. MaCurdy
Jacques Mairesse
N. Gregory Mankiw
Charles F. Manski
Robert A. Margo
Nancy Peregrim Marion
James R. Markusen
Terry A. Marsh
Richard C. Marston
Bennett T. McCallum
Rachel McCulloch
Robert L. McDonald
Daniel L. McFadden
Charles E. McLure, Jr.
James L. Medoff
Angelo Melino
Robert C. Merton
Jacob A. Mincer
Jeffrey A. Miron
Frederic S. Mishkin
Olivia S. Mitchell
Robert A. Moffitt
Edward B. Montgomery
Catherine J. Morrison
Kevin M. Murphy
Michael L. Mussa
Stewart C. Myers
M. Ishaq Nadiri
Charles R. Nelson
William D. Nordhaus
Maurice Obstfeld
Andrew J. Oswald
Ariel Pakes
John H. Pencavel
Robert S. Pindyck
Charles I. Plosser
A. Mitchell Polinsky
William Poole
Clayne L. Pope
Richard Portes
James M. Poterba
Edward C. Prescott
Samuel H. Preston
Ingmar R. Prucha
Robert H. Rasche
Assaf Razin
J. David Richardson
Hugh T. Rockoff
Kenneth S. Rogoff
V. Vance Roley
Sherwin Rosen
Julio J. Rotemberg
Michael Rothschild
Richard S. Ruback
Jeffrey D. Sachs
Henry Saffer
David S. Salkever
Thomas J. Sargent
Ryuzo Sato
Mark Schankerman
Myron S. Scholes
Andrew Schotter
Anna J. Schwartz
G. William Schwert
Nevin S. Scrimshaw
Carl Shapiro
Steven Shavell
Robert J. Shiller
Andrei Shleifer
John B. Shoven
Christopher A. Sims
Kenneth J. Singleton
Hans-Werner Sinn
Jonathan S. Skinner
Joel B. Slemrod
Frank A. Sloan
Kenneth L. Sokoloff
A. Michael Spence
Barbara J. Spencer
Richard H. Steckel
R. Knight Steel
Joseph E. Stiglitz
James H. Stock
Alan C. Stockman
Lawrence H. Summers
Richard C. Sutch
Lars E. O. Svensson
Richard E. Sylla
Robert A. Taggart, Jr.
Paul J. Taubman
Peter Temin
Marie C. Thursby
Robert H. Topel
T. James Trussell
Steven R. Turnovsky
Steven F. Venti
Robert W. Vishny
Paul Wachtel
Kenneth W. Wachter
Neil Wallace
John J. Wallis
Mark W. Watson
Roger N. Waud
Thomas J. Weiss
John Whalley
Larry T. Wimmer
David A. Wise
Ann Dryden Witte
Barbara L. Wolfe
Mark A. Wolfson
Tadashi Yamada
Victor Zarnowitz
Richard J. Zeckhauser

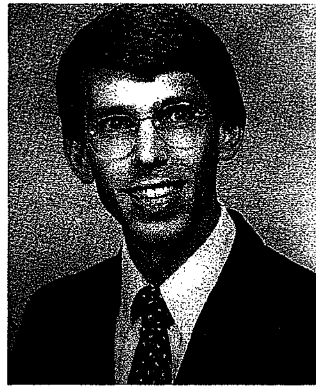
NBER Associate Assumes Treasury Post

Research Associate Harvey S. Rosen, a member of the NBER's Program in Taxation since 1978, was recently named deputy assistant secretary for tax policy of the U.S. Department of the Treasury. Rosen was a professor of economics at Princeton University at the time of his appointment. He also has directed the NBER's Project on State and Local Government Finance since 1983.

Goldin and Poterba Named Associate Directors

James M. Poterba was recently named associate director of the NBER's Program in Taxation and Claudia Goldin was made associate director of the Bureau's Program in Development of the American Economy (DAE). Poterba is a professor of economics at MIT and a research associate in the Bureau's Programs in Taxation, Financial Markets and Monetary Economics, Productivity, and Aging. Goldin is a professor of econom-

Claudia Goldin



James M. Poterba

ics at the University of Pennsylvania and has been a member of the DAE program since 1978.

The new associate directors will work closely with the program directors and are expected to succeed them after two years.

In announcing these appointments, NBER President Martin Feldstein praised the substantial record of achievements of David F. Bradford, director of the Program in Taxation, and Robert W. Fogel, director of the Program in Development of the American Economy. Feldstein noted that Bradford and Fogel are the first directors of their programs and are responsible for developing the existing programs and their research agendas.

Three Olin Fellowships Available for 1990–1: A Call for Applicants

John Olin Fellowships in Economics are designed to bring outstanding young economists to NBER's Cambridge office for a year of intensive research on important economic issues. Olin Fellows are free of all teaching and other university responsibilities. Three fellowships are available for the 1990–1 academic year.

The fellowships provide a stipend equal to one's university salary and a limited travel budget to cover moving expenses, travel connected to the research, and participation in scientific meetings. Funds are also available for research assistants, data, and computing costs.

Olin Fellows are selected from economics departments and business schools. To be eligible, you must have a Ph.D., preferably completed within the last five years. Anyone under the age of 35 is eligible. The key criteria for selection are general excellence and promise as an empirical researcher on a subject of potential national importance.

Anyone interested in applying should send a curriculum vitae, a list of publications, and a brief summary of research plans (not to exceed 1000 words) by November 27 to: Geoffrey Carliner, NBER, 1050 Massachusetts Avenue, Cambridge, MA 02138. Winners will be announced by December 15.

Asset Pricing and Financial Markets: A Call for Papers

On May 11 and 12, 1990, the National Bureau of Economic Research will hold a conference in Cambridge on Asset Pricing and Financial Markets. The program, being organized by Professor John Y. Campbell of the NBER and Princeton University, will consist of seven or eight papers with two formal discussants for each paper. There will be no published proceedings, but the conference will be summarized in the *NBER Reporter*.

The conference will include a wide range of research on the determination of financial asset prices, interpreted broadly to include short- and long-term fixed-income securities, equities, foreign currencies, commodities, real estate, futures, and options. Papers presented at the conference might try to explain any of the following empirical phenomena: the cross-sectional pattern of mean returns on financial assets; time variation in conditional mean returns; the volatility of returns, and changes through time in volatility; the relationships between returns and the state of the macroeconomy; the relationships among returns measured over different horizons; and the volume and pattern of trade in financial assets.

Priority will be given to empirical research or theoretical work with direct empirical implications. Models with heterogeneous agents are of special interest.

Papers will be selected on the basis of abstracts of about 500 words or, when possible, completed papers, with preference given to papers by younger members of the profession. Any research not published at the time of the conference may be submitted. The deadline for submission of abstracts and papers is January 19, 1990. Authors chosen to present papers will be notified by February 23, 1990. The NBER will pay expenses of those chosen to give papers at the conference.

Abstracts should be sent to Professor John Y. Campbell, National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138.

Economic Fluctuations Research Meeting

Over 100 economists attended a research meeting of the NBER's Program in Economic Fluctuations in Cam-

bridge on July 13. The program, organized by Research Associates Andrei Shleifer of the University of Chicago and Lawrence H. Summers of Harvard University, was:

Robert B. Barsky, NBER and University of Michigan, and J. Bradford De Long, NBER and Harvard University, "Why Have Stock Prices Fluctuated?"
Discussant: John Y. Campbell, NBER and Princeton University

Knut Anton Mork, Vanderbilt University, and Hans Terje Mysen and Oystein Olsen, Central Bureau of Statistics, Norway, "Macroeconomic Responses to Oil Price Increases and Decreases in Six OECD Countries"
Discussant: James Hamilton, University of Virginia

Lawrence M. Ausubel, Northwestern University, "The Failure of Competition in the Credit Card Market"
Discussant: Julio J. Rotemberg, NBER and MIT

Lawrence H. Summers, and Chris Carroll, MIT, "Consumption Growth Parallels Income Growth: Some New Evidence"
Discussant: Angus Deaton, NBER and Princeton University

Steve J. Davis, University of Chicago, and John C. Haltiwanger, University of Maryland, "Gross Job Creation, Gross Job Destruction, and Employment Reallocation"
Discussant: Lawrence J. Katz, NBER and Harvard University

Finn E. Kydland, Carnegie-Mellon University, and Edward C. Prescott, University of Minnesota, Cyclical Movements of the Labor Input and Its Real Wage"
Discussant: Kevin M. Murphy, NBER and University of Chicago

Barsky and De Long reassess the relationship between stock prices and current and expected future dividends to determine whether market fluctuations are caused by shifts in fundamentals. Using data on dividends from 1900 to the present, they find that changes in the rationally expected growth rate of dividends may account for the sizable long-run variation in the dividend/price ratio. Movements in current and expected future dividends themselves also can explain much about the major historical long swings in stock prices. Previous conclusions to the contrary appear to depend on agents' assumed knowledge of certain features of the dividend process, but that knowledge was unavailable to investors at the time, Barsky and De Long believe.

Mork, Mysen, and Olsen analyze the correlations between oil price movements and GNP/GDP fluctuations for the United States, Canada, West Germany, Japan, the United Kingdom, and Norway. They find the clearest correlations for the United States, which also shows evidence of asymmetric responses to price increases and decreases. West Germany, Canada, and Norway show significant univariate, but not multivariate, correlations with oil price increases.

The bank credit card market, containing 4000 firms and lacking regulatory barriers, appears to be an example of perfect competition. Nevertheless, Ausubel reports that credit card interest rates have been exceptionally sticky relative to the cost of funds. Moreover, credit card issuers appear to have earned three to five times the ordinary rate of return in banking from 1983–7. The competitive model may fail partly because of consumer search or switch costs, which may be exacerbated by adverse selection.

Summers and Carroll argue that the versions of the permanent-income and life-cycle theories that recently have become fashionable are inconsistent with the most obvious features of cross-country and cross-sectional data on consumption and income. Consumption and income growth are much more closely linked than these theories would predict. Furthermore, consumption smoothing appears to take place over periods of several years, not several decades. Thus the usefulness of standard representative consumer approaches to the analysis of saving behavior is questionable. Increased emphasis on liquidity constraints and short-run precautionary saving may be necessary to explain consumption behavior.

Davis and Haltiwanger measure the heterogeneity of employment changes in the U.S. manufacturing sector at the establishment level from 1972–86. Their dataset has approximately 860,000 annual observations and 3.4 million quarterly observations on 160,000 manufacturing establishments. Based on March-to-March changes in establishment level employment, gross job reallocation (that is, job creation minus job destruction) averages 20 percent per year. Reallocation rates range from 17 to 23 percent per year in the manufacturing sector, Davis and Haltiwanger find. Virtually all of the time-series variation in gross job reallocation is explained by time-series variation in the idiosyncratic components of establishment growth rates. They conclude that the intensity of shifts in the pattern of employment opportunities across establishments is strongly countercyclical. This finding provides evidence of a systematic connection between aggregate fluctuations and the heterogeneity of employment changes at the establishment level.

Using data for 1969–82 on almost 5000 people in the Panel Study of Income Dynamics, Kydland and Prescott ask if aggregate hours worked are a good measure of labor input over a business cycle. The validity of aggregate hours as a cyclical measure requires that the composition of the work force by skill and ability remain approximately unchanged over the cycle. However, aggregate hours are more volatile cyclically than labor input is. Furthermore, the real wage is strongly procyclical, while average compensation per hour is not. Thus, aggregate hours are a poor measure of labor input.

Reprints Available

The following NBER Reprints, intended for nonprofit education and research purposes, are now available. (Previous issues of the *NBER Reporter* list titles 1-1192 and contain abstracts of the Working Papers cited below.)

These reprints are free of charge to corporate associates and other sponsors of the National Bureau. For all others there is a charge of $2.00 per reprint to defray the costs of production, postage, and handling. Please do not send cash. Reprints must be requested by number, in writing, from: Reprint Series, National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138.

1193. "Investment, Financing Decisions, and Tax Policy" by Steven R. Fazzari, R. Glenn Hubbard, and Bruce C. Petersen, 1988 (NBER Working Paper No. 2387)

1194. "Spending, Taxes, and Deficits: International-Intertemporal Approach" by Jacob A. Frenkel and Assaf Razin, 1988 (NBER Working Paper No. 2065)

1195. "An Assessment of the Benefits of Air Pollution Control: The Case of Infant Health" by Theodore J. Joyce, Michael Grossman, and Fred Goldman, 1989 (NBER Working Paper No. 1928)

1196. "Tariffs, the Real Exchange Rate, and the Terms of Trade: On Two Popular Propositions in International Economics" by Sebastian Edwards and Sweder J. G. van Wijnbergen, 1987 (NBER Working Paper No. 2365)

1197. "Bank Portfolio Choice with Private Information about Loan Quality" by Deborah Lucas and Robert L. McDonald, 1987 (NBER Working Paper No. 2421)

1198. "Terms of Trade, Tariffs, and Labor Market Adjustment in Developing Countries" by Sebastian Edwards, 1988 (NBER Working Paper No. 2110)

1199. "The Productivity Slowdown, Measurement Issues, and the Explosion of Computer Power" by Martin N. Baily and Robert J. Gordon, 1988

1200. "The Estimation of Prewar Gross National Product: Methodology and New Evidence" by Nathan S. Balke and Robert J. Gordon, 1989 (NBER Working Paper No. 2674)

1201. "Recent Developments in Macroeconomics" by Stanley Fischer, 1988 (NBER Working Paper No. 2473)

1202. "Looking for the News in the Noise: Additional Stochastic Implications of Optimal Consumption Choice" by Laurence J. Kotlikoff and Ariel Pakes, 1988 (NBER Working Paper No. 1492)

1203. "Investment and Sales: Some Empirical Evidence" by Andrew B. Abel and Olivier J. Blanchard, 1988 (NBER Working Paper No. 2050)

1204. "Understanding Real Interest Rates" by Frederic S. Mishkin, 1988 (NBER Working Paper No. 2691)

1205. "Credit, Money, and Aggregate Demand" by Ben S. Bernanke and Alan S. Blinder, 1988 (NBER Working Paper No. 2534)

1206. "The Labor Market Consequences of Generational Crowding" by David E. Bloom, Richard B. Freeman, and Sanders D. Korenman, 1988 (NBER Working Paper No. 1829)

1207. "Order Backlogs and Production Smoothing" by Kenneth D. West, 1988 (NBER Working Paper No. 2385)

1208. "Productivity and Changes in Ownership of Manufacturing Plants" by Frank R. Lichtenberg and Donald Siegel, 1988

1209. "The Evolution of Unemployment in the United States: 1968-85" by Kevin M. Murphy and Robert H. Topel, 1987

1210. "What Are the Costs of Excessive Deficits?" by David Romer, 1988

1211. "Debt Neutrality, Professor Vickrey, and Henry George's 'Single Tax'" by Willem H. Buiter, 1989 (NBER Working Paper No. 2673)

1212. "International Evidence on the Demand for Money," by Ray C. Fair, 1987 (NBER Working Paper No. 2106)

1213. "The Corporate Cost of Capital in Japan and the United States," by Albert Ando and Alan J. Auerbach, 1988 (NBER Working Paper No. 1762)

1214. "Do We Collect Any Revenue from Taxing Capital Income?" by Roger H. Gordon and Joel B. Slemrod, 1988

1215. "The ECU—An Imaginary or Embryonic Form of Money: What Can We Learn from History?" by Michael D. Bordo and Anna J. Schwartz, 1989 (NBER Working Paper No. 2345)

1216. "Obstacles to International Macroeconomic Policy Coordination," by Jeffrey A. Frankel, 1988 (NBER Working Paper No. 2505)

1217. "IR and D Projected Data and Theories of R and D Investment," by Frank R. Lichtenberg, 1989 (NBER Working Paper No. 2720)

1218. "Learning in Equilibrium Models of Arbitration," by Robert S. Gibbons, 1988 (NBER Working Paper No. 2547)

1219. "On the Interpretation of Near Random-Walk Behavior in GNP," by Kenneth D. West, 1988 (NBER Working Paper No. 2364)

1220. "The Ricardian Approach to Budget Deficits," by Robert J. Barro, 1989 (NBER Working Paper No. 2685)

1221. "The Empirical Foundations of the Arbitrage Pricing Theory," by Bruce N. Lehmann and David M. Modest, 1988 (NBER Working Paper Nos. 1725 and 1726)

1222. "The Revenues-Expenditures Nexus: Evidence from Local Government Data," by Douglas Holtz-Eakin, Whitney K. Newey, and Harvey S. Rosen, 1989 (NBER Working Paper No. 2180)

1223. "Trade Deficits in the Long Run," by Barry J. Eichengreen, 1989 (NBER Working Paper No. 2437)

1224. "Venture Capital and Capital Gains Taxation," by James M. Poterba, 1989 (NBER Working Paper No. 2832)

1225. "International Effects of Tax Reforms," by Jacob A. Frenkel and Assaf Razin, 1989 (NBER Working Paper No. 2873)

1226. "Lifetime Incidence and the Distributional Burden of Excise Taxes," by James M. Poterba, 1989 (NBER Working Paper No. 2833)

1227. "Tariffs, Capital Controls, and Equilibrium Real Exchange Rates," by Sebastian Edwards, 1989 (NBER Working Paper No. 2162)

1228. "The Simple Analytics of Debt-Equity Swaps," by Elhanan Helpman, 1989 (NBER Working Paper No. 2771)

1229. "The Efficiency of the Market for Single-Family Homes," by Karl E. Case and Robert J. Shiller, 1989 (NBER Working Paper No. 2506)

1230. "Exchange Controls, Devaluations, and Real Exchange Rates: The Latin American Experience," by Sebastian Edwards, 1989 (NBER Working Paper No. 2348)

1231. "The Costs of Conflict Resolution and Financial Distress: Evidence from the Texaco-Pennzoil Litigation," by David M. Cutler and Lawrence H. Summers, 1988 (NBER Working Paper No. 2418)

1232. "What Moves Stock Prices?" by David M. Cutler, James M. Poterba, and Lawrence H. Summers, 1989 (NBER Working Paper No. 2538)

1233. "Mean Reversion in Stock Prices," by James M. Poterba and Lawrence H. Summers, 1988 (NBER Working Paper No. 2343)

1234. "The Choice of Monetary Instrument in Two Interdependent Economies under Uncertainty," by Stephen J. Turnovsky and Vasco d'Orey, 1989 (NBER Working Paper No. 2604)

1235. "Is Everything Neutral?" by B. Douglas Bernheim and Kyle Bagwell, 1988 (NBER Working Paper No. 2086)

1236. "The Flexible Exchange Rate System: Experience and Alternatives," by Rudiger Dornbusch and Jeffrey A. Frankel, 1988 (NBER Working Paper No. 2464)

1237. "Relative Wage Variability in the United States 1860-1983," by Steven G. Allen, 1987 (NBER Working Paper No. 2221)

1238. "The Behavior of Home Buyers in Boom and Post-Boom Markets," by Karl E. Case and Robert J. Shiller, 1989 (NBER Working Paper No. 2748)

1239. "Country Risk, Incomplete Information, and Taxes on International Borrowing," by Joshua Aizenman, 1989 (NBER Working Paper No. 1880)

1240. "A Bequest-Constrained Economy: Welfare Analysis," by Marc Nerlove, Assaf Razin, and Efraim Sadka, 1988 (NBER Working Paper No. 2779)

1241. "Exchange Rate Volatility and Misalignment: Evaluating Some Proposals for Reform," by Jacob A. Frenkel and Morris Goldstein, 1988 (NBER Working Paper No. 2894)

1242. "The International Monetary System: Developments and Prospects," by Jacob A. Frenkel and Morris Goldstein, 1988 (NBER Working Paper No. 2648)

1243. "Productivity Levels and Productivity Change under Unionism," by Steven G. Allen, 1988 (NBER Working Paper No. 2304)

1244. "Sovereign Debt as a Contingent Claim: Excusable Default, Repudiation, and Reputation," by Herschel I. Grossman and John B. Van Huyck, 1988 (NBER Working Paper No. 1673)

1245. "Structural Adjustment Policies in Highly Indebted Countries," by Sebastian Edwards, 1989 (NBER Working Paper No. 2502)

1246. "Sources of Business Cycle Fluctuations," by Matthew D. Shapiro and Mark W. Watson, 1988 (NBER Working Paper No. 2589)

1247. "Monopolistic Competition, Relative Prices, and Output Adjustment in the Open Economy," by Joshua Aizenman, 1989 (NBER Working Paper No. 1787)

1248. "The General Equilibrium Effects of Inflation on Housing Consumption and Investment," by James Berkovec and Don Fullerton, 1989 (NBER Working Paper No. 2826)

1249. "Divergent Expectations as a Cause of Disagreement in Bargaining: Evidence from a Comparison of Arbitration Schemes," by Henry S. Farber and Max H. Bazerman, 1989 (NBER Working Paper No. 2139)

1250. "A Disaggregate Equilibrium Model of the Tax Distortions among Assets, Sectors, and Indus-

tries," by Don Fullerton and Yolanda Kodrzycki Henderson, 1989 (NBER Working Paper No. 1905)

1251. "Financial Factors in Business Fluctuations," by Mark Gertler and R. Glenn Hubbard, 1988 (NBER Working Paper No. 2758)

1252. "Credibility, Debt, and Unemployment: Ireland's Failed Stabilization," by Rudiger Dornbusch, 1989 (NBER Working Paper No. 2785)

1253. "Labor Markets and the Choice of Technology in an Open Developing Economy," by Joshua Aizenman, 1989 (NBER Working Paper No. 1998)

1254. "Sectorial and National Aggregate Disturbances to Industrial Output in Seven European Countries," by Alan C. Stockman, 1988 (NBER Working Paper No. 2313)

1255. "Exchange Rate Management Viewed as Tax Policies," by Jacob A. Frenkel and Assaf Razin, 1989 (NBER Working Paper No. 2653)

1256. "Utilization and Case-Mix Impacts of Per-Case Payment in Maryland," by David S. Salkever and Donald M. Steinwachs, 1988 (NBER Working Paper No. 2010)

1257. "Unions and Job Security in the Public Sector," by Steven G. Allen, 1988 (NBER Working Paper No. 2108)

1258. "Shunto, Rational Expectations, and Output Growth in Japan," by Herschel I. Grossman and William S. Haraf, 1989 (NBER Working Paper No. 1144)

1259. "Economic Efficiency in Recent Tax Reform History: Policy Reversals or Consistent Improvements?" by Don Fullerton and James B. Mackie, 1989 (NBER Working Paper No. 2593)

1260. "The Health and Earnings of Rejected Disability Insurance Applicants," by John Bound, 1989 (NBER Working Paper No. 2816)

1261. "Industry Rents: Evidence and Implications," by Lawrence F. Katz and Lawrence H. Summers, 1989 (NBER Working Paper No. 2739)

1262. "Anatomy of Financial Crises," by Barry J. Eichengreen and Richard Portes, 1987 (NBER Working Paper No. 2126)

1263. "Homeownership Rates of Married Couples: An Econometric Investigation," by Donald R. Haurin, Patric H. Hendershott, and David C. Ling, 1988 (NBER Working Paper No. 2305)

1264. "Patents: Recent Trends and Puzzles," by Zvi Griliches, 1989 (NBER Working Paper No. 2922)

1265. "Patent Renewal Data," by Ariel Pakes and Margaret Simpson, 1989

1266. "Precautionary Saving and the Timing of Taxes" by Miles S. Kimball and N. Gregory Mankiw, 1989 (NBER Working Paper No. 2680)

1267. "Sources of Economic Fluctuations in the United States," by Ray C. Fair, 1988 (NBER Working Paper No. 2112)

1268. "The Economic Dynamics of an Aging Population: The Case of Four OECD Countries," by Alan J. Auerbach, Laurence J. Kotlikoff, Robert P. Hagemann, and Giuseppe Nicoletti, 1989 (NBER Working Paper No. 2797)

1269. "Consumer Discrimination and Self-Employment," by George J. Borjas and Stephen G. Bronars, 1989 (NBER Working Paper No. 2627)

1270. "The Incidence and Efficiency Costs of Corporate Taxation When Corporate and Noncorporate Firms Produce the Same Good," by Jane G. Gravelle and Laurence J. Kotlikoff, 1989 (NBER Working Paper No. 2462)

1271. "Hegemonic Stability Theories of the International Monetary System," by Barry J. Eichengreen, 1989 (NBER Working Paper No. 2193)

1272. "Structural and Stabilization Aspects of Fiscal and Financial Policy in the Dependent Economy," by Willem H. Buiter, 1988 (NBER Working Paper No. 2023)

1273. "The Theory and Measurement of Macroeconomic Disequilibrium in Centrally Planned Economies," by Richard Portes, 1989 (NBER Working Paper No. 1875)

1274. "Why Do Individual-Effects Models Perform So Poorly? The Case of Academic Salaries," by Daniel S. Hamermesh, 1989 (NBER Working Paper No. 2135)

1275. "The Seasonal Cycle and the Business Cycle," by Robert B. Barsky and Jeffrey A. Miron, 1989 (NBER Working Paper No. 2688)

1276. "Price Flexibility, Credit Availability, and Economic Fluctuations: Evidence from the United States, 1894–1909," by Charles W. Calomiris and R. Glenn Hubbard, 1989 (NBER Working Paper No. 1767)

1277. "Country Risk and Contingencies," by Joshua Aizenman, 1989 (NBER Working Paper No. 2236)

1278. "Hypothesis Testing with Restricted Spectral Density Matrices, with an Application to Uncovered Interest Parity," by Takatoshi Ito and Danny Quah, 1989 (NBER Technical Working Paper No. 50)

1279. "Interest Rate Targeting," by Robert J. Barro, 1989 (NBER Working Paper No. 2581)

1280. "Household Formation and Homeownership: Impacts of Demographic, Sociological, and Eco-

nomic Factors," by Patric H. Hendershott, 1988 (NBER Working Paper No. 2375)

1281. "Workers' Trust Funds and the Logic of Wage Profiles," by George A. Akerlof and Lawrence F. Katz, 1989 (NBER Working Paper No. 2548)

1282. "Trade Restrictions as Facilitating Practices," by Kala Krishna, 1989 (NBER Working Paper No. 1546)

1283. "Research and Development and Intraindustry Spillovers: An Empirical Application of Dynamic Duality," by Jeffrey I. Bernstein and M. Ishaq Nadiri, 1989 (NBER Working Paper No. 2002)

1284. "Risk, Uncertainty, and Exchange Rates," by Robert J. Hodrick, 1989 (NBER Working Paper No. 2429)

1285. "Bubbles, Fads, and Stock Price Volatility Tests: A Partial Evaluation," by Kenneth D. West, 1988 (NBER Working Paper No. 2574)

1286. "The Term Structure of Interest Rates and the Effects of Macroeconomic Policy," by Stephen J. Turnovsky, 1989 (NBER Working Paper No. 2902)

1287. "Real Business Cycles: A New Keynesian Perspective," by N. Gregory Mankiw, 1989 (NBER Working Paper No. 2882)

1288. "Relative Wages, Efficiency Wages, and Keynesian Unemployment," by Lawrence H. Summers, 1988 (NBER Working Paper No. 2590)

1289. "Tax Policy and International Competitiveness," by Lawrence H. Summers, 1988 (NBER Working Paper No. 2007)

Technical Papers Series

The following studies in the NBER Technical Working Papers series are now available (see previous issues of the *NBER Reporter* for other titles). Like NBER Working Papers, these studies may be obtained by sending $2.00 per paper to: Technical Working Papers, National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. Please do not send cash.

78. "Full Information Estimation and Stochastic Simulation of Models with Rational Expectations," by Ray C. Fair and John B. Taylor, August 1989 (JEL No. 211)

79. "Estimation of Polynomial-Distributed Lags and Leads with End-Point Constraints," by Donald W. K. Andrews and Ray C. Fair, October 1989 (JEL No. 211)

80. "A Simple, Consistent Estimator for Disturbance Components in Financial Markets," by James A. Levinsohn and Jeffrey K. MacKie-Mason, October 1989 (JEL Nos. 210, 230)

81. "The Influence of Probability on Risky Choice: A Parametric Examination," by Joanna R. Baker, Pamela K. Lattimore, and Ann Dryden Witte, October 1989 (JEL No. 026)

Bureau Books

Understanding the Gender Gap

Understanding the Gender Gap: An Economic History of American Women, by Claudia Goldin, is available from Oxford University Press for $29.95.

Why do women earn less than men and have less opportunity for advancement, despite the fact that they have been entering the labor market in unprecedented numbers and with high skill levels? Goldin uses new data and innovative methods to show that women's economic status has evolved gradually over the last two centuries and that past conceptions of women workers are not easily discarded.

The book should be useful for economists, historians, sociologists, and lay readers who are interested in women's studies.

Goldin is associate director of the NBER's Program in Development of the American Economy. She also is a professor of economics at the University of Pennsylvania.

This volume may be ordered directly from Oxford University Press, 200 Madison Avenue, New York, NY 10016.

Current Working Papers

Individual copies of NBER Working Papers and Historical Factors in Long-Run Growth Working Papers are available free of charge to corporate associates and other supporters of the National Bureau. Others can receive copies of Working Papers by sending $2.00 per copy to Working Papers, National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. Please make checks payable to the National Bureau of Economic Research, Inc. Please do not send cash.

Journal of Economic Literature (JEL) subject codes, when available, are listed after the date of the Working Paper. Abstracts of all Working Papers issued since July 1989 are presented below. For previous papers, see past issues of the *NBER Reporter*. Working Papers are intended to make results of NBER research available to other economists in preliminary form to encourage discussion and suggestions for revision before final publication. They are not reviewed by the Board of Directors of the NBER.

Historical Factors in Long-Run Growth

Buying the American Dream: Housing Demand in the United States in the Late Nineteenth Century

Allen C. Goodman and **Michael R. Haines**
Historical Working Paper No. 5
August 1989
JEL No. 042

This paper examines homeownership and housing demand for a sample of approximately 6800 urban industrial workers in the United States for 1889–90. Using data from the Sixth and Seventh Annual Reports of the U.S. Commissioner of Labor, we analyze housing demand as a two-part process: first, the "tenure choice" decision, whether to own or rent; and, second, how much of either type of housing to purchase. We estimate equations for tenure choice and renter demand, using the concept of expected income rather than current income. Data limitations did not permit estimation of owner demand.

The results indicate lower homeownership rates among American workers circa 1890 than later. Income, age of household head, region, industry, occupation, ethnicity, and family size and composition all had significant effects on ownership. Rental prices and value/rent ratios affected ownership in the expected directions. Partial and full elasticities calculated for renter demand reveal downward biases if only current income is used to estimate housing demand. The results indicate that modern housing demand theory performs well with historical data.

Consumer Behavior and Immigrant Assimilation: A Comparison of the United States, Britain, and Germany, 1889–90

Michael R. Haines
Historical Working Paper No. 6
August 1989
JEL Nos. 042, 044, 920

This paper uses household-level budget data from the 1889–90 U.S. Commissioner of Labor Survey to estimate the full Almost Ideal Demand System with demographic and other covariates. Price data are from the Aldrich Report of 1892. The purpose of this study is to make better use of the entire dataset by incorporating demographic variation and then examining whether the consumption patterns of immigrants and the native born were significantly different once the effects of total expenditure, prices, family composition, region of residence, industry, occupation, and age of household head were taken into account. I also compare Engel curves to those of households in Great Britain and Germany. Estimation of Engel curves and the full model (with prices) for six commodity categories (food, housing, clothing, fuel and lighting, liquor and tobacco, and "other" goods and services) revealed that differences across ethnic groups within the United States could be reduced but not eliminated by the effects of the covariates. The foreign born spent relatively more on food and on liquor and tobacco. Although differences by ethnicity existed, both British and German immigrants to the United States were closer in their consumption patterns to workers in the area of destination than to workers in the area of origin. Inclusion of prices did reduce the regional effects (within the United States) found in the Engel curves. Demographic effects were important. Food, housing, and fuel and lighting appeared to be necessities, while clothing, liquor and tobacco, and "other" goods and services were luxuries.

Economic Growth before 1860: Revised Conjectures

Thomas Weiss
Historical Working Paper No. 7
October 1989
JEL No. 042

The current view of U.S. economic growth before 1860 is based on conjectural estimates of output made by Paul David (1967). This paper sets forth new estimates of the farm labor force for 1800-60 and uses them to revise his conjectures about growth of per capita output. I produce an additional conjectural estimate based on recent evidence about manufacturing productivity.

The new estimates of the farm labor forces are lower for the years before 1830 by 10 to 15 percent, but higher for 1840, 1850, and 1860 by 5 to 9 percent. As a consequence, the farm work force grew more rapidly than was previously believed, and farm productivity grew more slowly.

The impact of the revisions varies by subperiod and is concentrated almost entirely in the middle 20 years. Because the advance in farm productivity was the major determinant of change in the conjectural estimates of per capita output, that series grows at a slower rate as well, especially from 1820-40. A refined estimate, which incorporates the recent evidence on manufacturing productivity, alters the picture somewhat, but still shows slower growth and more gradual acceleration of output per capita than is revealed in the David series.

NBER Working Papers

How Elastic Is the Government's Demand for Weapons?

Frank R. Lichtenberg
Working Paper No. 3025
July 1989
JEL No. 322

I make inferences about the elasticity of the government's demand for specific weapons by analyzing the statistical relationship between quantity and cost revisions across the population of major weapons systems, using data contained in the Pentagon's Selected Acquisition Reports. The cost revisions in part are caused by the arrival of technological information generated in the course of research and development. When I standardize the data by program base year, I find that the elasticity of demand is .55 and is significantly different from both zero and unity. Thus, the government's demand for specific weapons is inelastic, but not perfectly inelastic. The estimates also imply that weapons acquisition is characterized by increasing returns: the mean and median values of the elasticity of total cost with respect to quantity are .78 and .72, respectively.

Formal Employee Training Programs and Their Impact on Labor Productivity: Evidence from a Human Resources Survey

Ann P. Bartel
Working Paper No. 3026
July 1989
JEL Nos. 824, 825

Although economic models of training decisions are framed in terms of a company's calculation of the costs and benefits of such training, empirical work never has been able to test this model directly on company behavior. This paper uses a unique database to analyze the determinants of the variation in formal training across businesses and the impact of such training on labor productivity. I find that large businesses, those introducing new technology, and those that rely on internal promotions to fill vacancies are more likely to have formal training programs. Formal training also has a positive effect on labor productivity.

Commodity Trade and International Risk Sharing: How Much Do Financial Markets Matter?

Harold L. Cole and **Maurice Obstfeld**
Working Paper No. 3027
July 1989
JEL No. 431

This paper evaluates the gains from international risk sharing in some simple general equilibrium models with output uncertainty. Under empirically plausible calibration, the incremental loss from a ban on international portfolio diversification is quite small: about 0.15 percent of output per year. Even the theoretical gains from asset trade may disappear under alternative sets of assumptions about preferences and technology. We argue that the small potential gains from trade, coupled with the low costs of cross-border financial transactions, may explain the apparently inconsistent empirical findings on the degree of international capital mobility.

Intertemporal Dependence, Impatience, and Dynamics

Maurice Obstfeld
Working Paper No. 3028
July 1989
JEL Nos. 023, 111, 131

This paper develops simple geometric methods for analyzing dynamic behavior in models with intertemporally dependent consumer tastes. Since the preferences I studied do not assume time-additivity, they allow the marginal utility of consumption on a given date to vary with consumption on other dates. I induce intertemporal dependence by the presence of a variable individual rate of time preference. I easily derive the optimal consumption responses to transitory and anticipated changes in incomes and interest rates and find they are similar in important ways to the responses implied by the standard model with constant time preference. Finally, I provide explanations of the first-order conditions describing optimal paths.

The Employers' Cost of Workers Compensation Insurance: Magnitudes, Determinants, and Public Policy

Alan B. Krueger and **John F. Burton, Jr.**
Working Paper No. 3029
July 1989
JEL No. 822

This paper estimates the average cost of the workers compensation insurance program for a homogeneous group of employers by state. These estimates reflect the operation, direct nominal costs, and the efficiency of workers compensation. We find that when cost equations are estimated by ordinary least squares, there is a unit elasticity of costs with respect to benefits. Instrumental variable estimates of the effect of benefits yield a greater-than-unit elasticity. The results also indicate that the presence of a state insurance fund is associated with higher average costs to employers, all else equal. Finally, we explore the impact that the minimum standards recommended by the National Commission on State Workmen's Compensation Laws would have on workers compensation costs.

Employment, Wages, and Unionism in a Model of the Aggregate Labor Market in Britain

John H. Pencavel
Working Paper No. 3030
July 1989
JEL No. 824

Two propositions figure prominently in explanations for Britain's comparatively low growth in employment: first, the wage-setting mechanism is insufficiently responsive to the growth of unemployment; second, there exists a well-defined causal relationship from wages to employment with the features of a conventional labor demand function. Using aggregate annual observations from 1953 to 1979, I find the evidence for a conventional labor demand curve to be fragile. I also find little support for the notion that trade union objectives are unaffected by unemployment, as some variations of the "insider-outsider" hypothesis would maintain. In general, the empirical results in this paper emphasize that confident inferences about Britain's employment record cannot be drawn from aggregate data.

Monopsony Power in the Market for Nurses

Daniel Sullivan
Working Paper No. 3031
July 1989
JEL No. 824

I estimate the inverse elasticity of supply of nursing services to the individual hospital, a quantity that is a natural measure of employer market power. The estimates corresponding to employment changes taking place over one year are quite high (about 0.79) and even for changes taking place over three years are substantial (about 0.26). The estimates do not differ significantly for hospitals in major metropolitan areas and do not depend very sensitively on the assumed form of the oligopsony equilibrium.

Copycatting: Fiscal Policies of States and Their Neighbors

Anne C. Case, James R. Hines, Jr., and **Harvey S. Rosen**
Working Paper No. 3032
July 1989
JEL Nos. 324, 321

This paper formalizes and tests the notion that the expenditures of state governments depend on the spend-

ing of similarly situated states. Even after allowing for fixed state effects, year effects, and common random shocks between neighbors, we find that a state government's level of per capita expenditure is positively and significantly affected by the expenditure levels of its neighbors. Other things equal, a one dollar increase in a state's neighbors' expenditures increases its own expenditure by over 70 cents.

The Role of External Economies in U.S. Manufacturing

Ricardo J. Caballero and **Richard K. Lyons**
Working Paper No. 3033
July 1989
JEL Nos. 131, 630

This paper develops a method for joint estimation of internal returns to scale and external economies. We then estimate returns-to-scale indexes for U.S. manufacturing industries at the two-digit level. Overall, we find that only three of the 20 industries show any evidence of increasing internal returns: (1) primary metals, (2) electrical machinery, and (3) paper products. However, there is very strong evidence of external economies, that is, external to a given two-digit industry and internal to the United States. According to our estimates, if all manufacturing industries simultaneously raise their inputs by 10 percent, aggregate manufacturing production will rise by 13 percent, of which about 5 percent is the result of external economies. Thus, when an industry increases its inputs in isolation by 10 percent, its output rises by no more than 8 percent.

Invariance Properties of Solow's Productivity Residual

Robert E. Hall
Working Paper No. 3034
July 1989
JEL Nos. 620, 131

In 1957, Robert Solow published a paper that provided the theoretical foundation for almost all subsequent work on productivity measurement. Although most applications of Solow's method have measured trends over fairly long time periods, his method also has important uses at higher frequencies. Under constant returns to scale and competition, the Solow residual measures the pure shift of the production function. Shifts in product demand and factor supplies should have no effect on the residual. Tests of this invariance property show that it fails in a great many industries. Although other explanations may deserve some weight, it appears that the leading cause of the failure of invariance is increasing returns and market power. The empirical findings give some support to the theory of monopolistic competition.

An Analysis of the Earnings of Canadian Immigrants

David E. Bloom and **Morley Gunderson**
Working Paper No. 3035
July 1989
JEL No. 821

We estimate simple wage equations fitted to cross-sectional and pseudo-longitudinal data for Canadian immigrants in the 1971 and 1981 Canadian censuses. The estimates are used to assess: the usefulness of cross-sectional analyses for measuring the pace of immigrant earnings growth; the labor market implications of admissions policies that place different weights on the work skills possessed by prospective entrants; and the relative impact of selective outmigration and job-matching on immigrant earnings as their stay in the new country increases.

We find a small to moderate assimilation effect, suggesting that immigrants make up for relatively low entry wages, although the catch-up is not complete until 13 to 22 years after their entry into Canada. These results are revealed clearly in both the pseudo-longitudinal and the cross-sectional analyses.

We also find that the unobserved quality of immigrants' labor market skills declined after changes in Canada's immigration policies in 1974 led to a sharp increase in the proportion of immigrants admitted on the basis of family ties.

Finally, there is no evidence that the variance of immigrant earnings increases with their duration of stay in Canada, and there are no differential immigrant-native changes in higher-order moments of the earnings distribution as duration of stay increases. Thus the results are inconclusive with respect to the importance of selective outmigration and job-matching in the evolution of immigrant earnings distributions over time.

Treasury Bill Rates in the 1970s and 1980s

Patric H. Hendershott and **Joe Peek**
Working Paper No. 3036
July 1989
JEL Nos. 311, 313

As is widely recognized, real interest rates in the early 1980s were at peaks not witnessed since the late 1920s. Less well perceived is the sharp decline in real interest rates since 1984. By 1986–8, real interest rates were back at their average levels of the previous quarter century. This paper seeks to identify the underlying deter-

minants of the major movements in real six-month Treasury bill rates.

Not surprisingly, the rise in real interest rates between the middle 1970s and early 1980s results from a variety of factors. First, rates were unusually low in the middle 1970s because of the first OPEC shock, which lowered investment demand and increased world saving by transferring wealth from the high-consuming developed countries to OPEC. Second, tight money, high inflation, and heightened nuclear fear all contributed to real rates becoming unusually high in the early 1980s. The eventual decline of OPEC surpluses following the second OPEC shock prolonged the period of high real rates. The decline in real rates to more normal levels in 1986-8 is also the result of multiple factors: lower inflation, declining marginal tax rates, and easy monetary policy.

Interest Rates in the Reagan Years

Patric H. Hendershott and **Joe Peek**
Working Paper No. 3037
July 1989
JEL Nos. 311, 313

The Reagan administration entered office in 1981 with one of the clearest and most ambitious agendas in recent times. The new administration advanced five economic/budgetary goals to rebuild America economically and militarily: 1) reduce inflation; 2) deregulate the economy; 3) cut taxes; 4) increase military spending; and 5) reduce nondefense spending sufficiently to balance the budget. Achieving, or not achieving, these economic/budgetary goals likely had a significant impact on interest rates. This paper investigates six specific hypotheses.

During the first Reagan term, the battle to lower inflation helped to maintain the high real interest rates carried over from the Carter years. While the increase in structural deficits did not raise real rates much, the reduction in private saving caused by the second OPEC shock, and an aggressive foreign policy that heightened fear of nuclear war, raised real interest rates to levels not seen since the late 1920s. Moreover, the increased volatility of interest rates during this protracted battle with inflation raised yields on callable fixed-rate mortgages by over a percentage point relative to the already inflated yields on noncallable Treasuries.

By the end of Reagan's second term, inflation, marginal tax rates, nuclear fear, and interest rate volatility were all down. As a result, nominal Treasury rates have plunged (real bill rates since 1986 are below their average values for the previous quarter century) and yields on callable securities have receded to more normal levels relative to noncallable Treasuries. Yields on tax-exempt securities are 1.25 percentage points higher, relative to Treasuries, than in the pre-Reagan years, and yields on fixed-rate mortgages are up by 0.5 percentage point. These constitute an intended reduction in the previous financial subsidies to state and local and household capital formation.

Optimal Taxation and Optimal Tax Systems

Joel B. Slemrod
Working Paper No. 3038
July 1989
JEL No. 321

For the past two decades, the theory of optimal taxation has been the reigning normative approach to taxation. This paper argues that, in its current state, optimal tax theory is incomplete because it has not yet come to terms with taxation as a system of coercively collecting revenues from individuals who will tend to resist. The coercive nature of tax collection implies a high resource cost of implementing a tax system. Differences in the cost of administering various tax systems have been and will continue to be a critical determinant of appropriate tax policy.

The paper first presents the three cornerstone propositions of optimal tax theory. Then it discusses the influence of these propositions on recent tax policy developments. It concludes by sketching an alternative, called the theory of optimal tax systems, which embraces the insights of optimal taxation but also considers the technology of raising taxes and the constraints placed upon tax policy by that technology. The optimal tax systems perspective sheds light on the choice of tax instruments, the problem of tax evasion, and the appropriate tax treatment of capital income.

Do Firms Care Who Provides Their Financing?

Jeffrey K. MacKie-Mason
Working Paper No. 3039
July 1989
JEL Nos. 310, 320

This paper demonstrates that firms are concerned with who provides their financing, not just with the debt-equity distinction. I document aggregate and industry trends and patterns in the incremental sources of financial capital and econometrically analyze a large sample of incremental corporate financial decisions. There are large and persistent differences in the patterns of internal and external financing, both in the aggregate and across industries. Individual firms have distinct preferences for different providers of funds. Several indicators of potentially costly hidden information

problems are important and significant determinants of choices between private and publicly marketed sources, even after controlling for the type of security (debt or equity).

An Explanation of the Behavior of Personal Savings in the United States in Recent Years

Eytan Sheshinski and **Vito Tanzi**
Working Paper No. 3040
July 1989

A sharp increase in real interest rates in the United States in the 1980s was expected to induce a higher personal saving rate. Actually, between 1981 and 1983, the personal saving rate fell from 7.5 percent to 5.4 percent; for 1985–8, it averaged only 4 percent, even though real interest rates have remained high. We argue that one possible explanation for this is the large fraction of wealth, especially financial wealth, held by persons over 65. This group has received more than 50 percent of all interest income in the United States during this period. As we demonstrate, life-cycle theory suggests that the wealth effect created by an increase in the rate of interest reduces the savings of old persons and raises the savings of the young. Hence the effect on aggregate savings depends on the age distribution in the population.

Dynamic Factor Demand Models, Productivity Measurement, and Rates of Return: Theory and an Empirical Application to the U.S. Bell System

M. Ishaq Nadiri and **Ingmar R. Prucha**
Working Paper No. 3041
July 1989
JEL No. 226

Prucha and Nadiri (1982, 1986, 1988) introduced a methodology for estimating systems of dynamic factor demand that allows considerable flexibility in choosing the functional form of the technology and the expectation formation process. This paper uses the methodology to estimate the U.S. Bell System's production structure, and its demand for labor, materials, capital, and R and D. We provide estimates for short-, intermediate-, and long-run price and output elasticities of the inputs, as well as estimates of the rate of return on capital and R and D. The paper also discusses the measurement of technical change if the firm is in temporary, rather than long-run, equilibrium and the technology is not assumed to be linear homogeneous. We estimate input and output-based technical change, as well as returns to scale. Further, the paper provides a decomposition of the traditional measure of total factor productivity growth.

Tax Effects on Foreign Direct Investment in the United States: Evidence from a Cross-Country Comparison

Joel B. Slemrod
Working Paper No. 3042
July 1989
JEL No. 323

This paper investigates how the tax system of the United States and a capital-exporting country can combine to affect the flow of foreign direct investment (FDI) into the United States. First, using aggregate data, I corroborate earlier work that suggests that the U.S. effective tax rate influences the amount of FDI financed by transfers of funds but not the amount financed by retained earnings. I then disaggregate the data by major capital-exporting country to see if, as theory suggests, FDI from countries that exempt foreign-source income from taxation is more sensitive to U.S. tax rates than FDI from countries that attempt to tax foreign-source income. The analysis reveals no clear differential responsiveness between these two groups of countries. This suggests either difficulties in accurately measuring effective tax rates or the availability of financial strategies that render the home country tax system immaterial in affecting the return on FDI.

Labor Supply Flexibility and Portfolio Choice

Zvi Bodie and **William Samuelson**
Working Paper No. 3043
July 1989
JEL No. 520

This paper develops a model that shows that people who have flexibility in choosing how much to work prefer to invest substantially more of their money in risky assets than those without such flexibility. Viewed this way, labor supply flexibility offers insurance against adverse investment outcomes. The model provides support for the conventional wisdom that the young can tolerate more risk in their investment portfolios than the old can.

The model has other implications for the study of household financial behavior over the life cycle. It implies that households will take account of the value of labor supply flexibility in deciding how much to invest in their own human capital and when to retire. At the macro level, it implies that people will have a labor supply response to shocks in the financial markets.

Leadership and Cooperation in the European Monetary System: A Simulation Approach

Nouriel Roubini
Working Paper No. 3044
July 1989
JEL No. 431

To assess the importance of economic interdependence and the potential gains from policy coordination in the European area, this paper analyzes the international transmission of policies and disturbances in a rational expectations dynamic general equilibrium simulation model of the world economy and applies the analysis to the European Monetary System (EMS). International spillover effects and potential gains from coordination appear to be small under the assumption of flexible exchange rates in the European area. I compare the implications of a fixed rate EMS with German leadership to those of a cooperative fixed exchange rate regime. Finally, I find that capital controls under fixed rates fail to ensure policy autonomy and insulation from external disturbances for the countries restricting the capital movements.

Does Monetary Policy Matter? Narrative versus Structural Approaches

Ray C. Fair
Working Paper No. 3045
July 1989
JEL No. 311

This paper compares results from the narrative approach of Romer and Romer (1989) to those from the structural approach regarding the effects of monetary policy on real output. The results from both approaches lead to the conclusions that monetary policy does matter and that the effects build slowly following a monetary policy shock. However, the narrative approach leads to larger and more persistent effects than the structural approach does. This paper presents reasons why this might be so.

Is the Extended Family Altruistically Linked? Direct Tests Using Microdata

Joseph G. Altonji, Fumio Hayashi, and **Laurence J. Kotlikoff**
Working Paper No. 3046
July 1989
JEL No. 010

What is the basic economic decisionmaking unit: the household or the extended family? The question is fundamental to economic analysis and policy design. The answer given by the life-cycle and Keynesian models is that the economic unit is the household. According to these models, members of particular households act selfishly and do not share resources fully with extended family members in other households. Hence, altering the distribution of resources across households within the extended family will alter the consumption and labor supply of those households who acquire or lose resources.

In contrast to the life-cycle and Keynesian models, the altruism model implies that the extended family is linked through altruism and, as a result, acts as if it fully shares resources. In the altruism model, nondistortionary changes in the distribution of resources across households within the extended family will have no effect on the consumption or labor supply of any of its members.

Despite their importance, the boundaries of economic decisionmaking units have not been examined directly with microdata, to our knowledge. Stated differently, the altruism model has not been tested against the life-cycle and Keynesian alternatives with such data. This paper uses matched data on parents and their adult children, contained in the Panel Study of Income Dynamics, to perform such a test. In essence, our test asks whether the distribution of consumption and labor supply across households within the extended family depends on the distribution of resources across households within the extended family.

Our findings provide quite strong evidence against the altruism model. The distribution of resources across households within the extended family is a highly significant (statistically and economically) determinant of the distribution of consumption within the extended family. This finding holds for the entire sample as well as for the subsample consisting of rich parents and poor children.

In addition to showing that the distribution of extended family resources matters for extended family consumption, we test the life-cycle model by asking whether only own resources matter; that is, whether the resources of extended family members have any effect on a household's consumption. Our results indicate that extended family member resources have, at most, a modest effect on household consumption after one has controlled for the fact that extended family resources help predict a household's own permanent income.

Targets, Indicators, and Instruments of Monetary Policy

Bennett T. McCallum
Working Paper No. 3047
July 1989
JEL No. 310

It has become increasingly evident that the Federal

Reserve's official strategy of the past decade, involving the adherence to target paths for monetary aggregates, currently is not being used to any significant extent. While some commentators welcome and others deplore this development, most would agree that there is a need for a more explicit and coherent strategy for the conduct of monetary policy. This paper seeks to advance the strategic discussion in several ways. One involves a comparative consideration of targets for nominal GNP and the price level, with emphasis on robustness of specifications and implications for output variability. A second pertains to various "indicator" variables recently suggested by Fed officials and others. In this regard, it is necessary to be clear and specific about the role of potential indicators. Consequently, a careful review of the relevant conceptual distinctions—concerning instruments, targets, indicators, and so forth—is required. Finally, I give some attention to the proposal that strategy should be conducted so as to place minimal reliance on quantity variables, in the context of evidence concerning the merits of an interest rate instrument.

Tax Policy and International Direct Investment

Joosung Jun
Working Paper No. 3048
July 1989

I investigate the effects of taxes on direct investment capital outflows using a theoretical model that integrates the investment and financial decisions of the parent and subsidiary. The resulting marginal *q*s and costs of capital show that intrafirm investment allocation and tax neutrality results hinge critically on the marginal financing regime. By identifying a channel or channels through which a specific tax policy affects firm decisions, the model evaluates the combined effects of the home country tax system on direct investment. My analysis suggests that while the 1986 U.S. Tax Reform Act may have an ambiguous effect on the overall level of capital outflows, it may induce more equipment investments to be undertaken abroad.

U.S. Tax Policy and Direct Investment Abroad

Joosung Jun
Working Paper No. 3049
July 1989

The analysis presented in this paper shows that U.S. tax policy can have significant effects on U.S. direct investment outflows through various channels. I stress that a sensible choice of specification and data in an empirical model entails a rigorous examination of the theoretical underpinnings of the model. In particular, I emphasize the difference between foreign fixed investment undertaken by the foreign subsidiary and direct investment of the entire international firm, and the need to use different theoretical frameworks in each case.

I present estimated equations relating the balance-of-payments direct investment outflows—distinguishing between retained subsidiary earnings and parent transfers—to various measures of the U.S. net rate of return and the cost of funds. The evidence shows that U.S. tax policy toward domestic investment has an important effect on direct investment outflows by influencing the relative net rate of return between the United States and other countries. I estimate that a 16-cent reduction in transfers made by U.S. parent firms occurs for every one dollar increase in U.S. domestic investment. In contrast to previous studies, transfer equations fit much better than retained earnings equations for every net return variable used in the estimation. Of the various specifications tested, the transfer equation containing a marginal, forward-looking and corporate-investor net return variable fits best, a result that is consistent with the predictions of the theoretical framework.

Cyclical Pricing of Durable Goods

Mark Bils
Working Paper No. 3050
July 1989
JEL No. 023

I examine price markups in monopolistically competitive markets with fluctuations in demand caused by cyclical fluctuations in productivity. Markups depend positively on the average income of purchasers in the market. For a nondurable good, average income of purchasers is procyclical, so the markup is procyclical. For a durable good, however, the average income of purchasers is likely to decrease in booms, because low-income consumers of the good concentrate their purchases in boom periods; the markup is likely to be countercyclical. This is particularly true for growing markets. I find that markups make the aggregate economy fluctuate more in response to productivity if goods are sufficiently durable.

Testing for Contracting Effects on Employment

Mark Bils
Working Paper No. 3051
July 1989
JEL No. 023

I test the importance of wage rigidities from long-

term contracts by observing how employment behaves when firms and workers recontract. If rigidities are important then we should observe employment adjusting after recontracting to undo movements in employment during the past contract that were excessive because of rigid wages.

The data are for 12 manufacturing industries that display a strong bargaining pattern. I find that contract rigidities are important, causing considerably larger fluctuations in employment than would occur with flexible wages. By far the most striking case is in the motor vehicle industry in which long-term contracts much more than double the size of fluctuations in employment. I also examine the behavior of wage rates when new contracts are introduced. Wage growth does respond to employment growth during the prior contract in several of the industries, but these responses are not related to the pattern of employment responses across industries.

Alcohol Advertising Bans and Alcohol Abuse: An International Perspective

Henry Saffer
Working Paper No. 3052
July 1989
JEL Nos. 913, 531

This paper empirically examines the effect on alcohol abuse of banning broadcast advertising of alcoholic beverages. The effect of a ban cannot be studied using data from one country because the adoption of new advertising bans is an infrequent event and requires many years for adjustment. However, an international dataset can be used, since there is considerable variation in the use of advertising bans across countries. This study uses a pooled time series from 17 countries for 1970–83. The empirical measures of alcohol abuse are alcohol consumption, liver cirrhosis mortality rates, and highway fatality rates. The cultural factors that influence alcohol use are measured by sets of country dummy variables. The empirical results show that countries with bans on spirits advertising have about 10 percent lower alcohol consumption and motor vehicle fatality rates than countries with no bans. The results also show that countries with bans on beer and wine advertising have about 23 percent lower alcohol consumption and motor vehicle fatality rates than countries with bans only on spirits advertising.

Why Are Stabilizations Delayed?

Alberto Alesina and **Allan Drazen**
Working Paper No. 3053
August 1989
JEL No. 431

When a stabilization has significant distributional implications (as in the case of tax increases to eliminate a large budget deficit), different socioeconomic groups will attempt to shift the burden of stabilization onto other groups. The process leading to a stabilization becomes a "war of attrition," with each group finding it rational to attempt to wait the others out. Stabilization occurs only when one group concedes and is forced to bear a disproportionate share of the burden of fiscal adjustment.

We construct a model of "rational" delay based on a war of attrition and present comparative statics results relating the expected time of stabilization to several political and economic variables. We also motivate this approach and its results by comparison to historical episodes.

Optimal Advice for Monetary Policy

Susanto Basu, Miles S. Kimball, N. Gregory Mankiw, and **David N. Weil**
Working Paper No. 3054
August 1989
JEL Nos. 023, 311

This paper addresses the issue of how to give optimal advice about monetary policy when it is known that the advice may not be heeded. We examine a simple macroeconomic model in which monetary policy has the ability to stabilize output by offsetting exogenous shocks to aggregate demand. The optimal policy rule for such a model is derived easily. But an advisor who knows that his/her advice may not be followed should not recommend the optimal policy rule. This is true because, in giving activist advice, such an advisor increases uncertainty about what monetary policy will be followed. We solve for the rule that such an advisor should use in giving advice.

Synthetic Eurocurrency Interest Rate Futures Contracts: Theory and Evidence

Annie Koh and **Richard M. Levich**
Working Paper No. 3055
August 1989
JEL No. 430

In this paper we develop a theoretical (arbitrage) pricing model for a Eurocurrency interest rate futures contract and measure its effectiveness at hedging. This synthetic Eurocurrency interest rate futures contract combines existing Eurodollar interest rate futures contracts with near-term and far-term currency futures contracts based on the covered interest rate parity relationship. In theory, the cash flows of the synthetic contract perfectly replicate the cash flows of a

Eurocurrency interest rate futures contract. Our empirical results show that the synthetic contracts are relatively efficient in hedging nondollar borrowing rates. These results have implications for the practice of hedging nondollar interest rate risk and for the development of actual Eurocurrency interest rate futures markets.

Taxing International Income: An Analysis of the U.S. System and Its Economic Premises

Hugh J. Ault and **David F. Bradford**
Working Paper No. 3056
August 1989

This paper describes the basic U.S. legal rules governing the taxation of international transactions, and it explores the economic policies or principles they reflect. We pay particular attention to the changes made by the Tax Reform Act of 1986, but it is impossible to understand those changes without placing them in the context of the general taxing system applicable to international transactions. We intend the exposition to be intelligible to readers with either legal or economic training.

Recent Trade Liberalization in the Developing World: What Is Behind It, and Where Is It Headed?

John Whalley
Working Paper No. 3057
August 1989
JEL No. 410

This paper documents recent external sector liberalization in developing countries, evaluates what is behind it, and assesses whether it is likely to persist, accelerate, or reverse itself. I draw heavily on material collected during a recent research project on developing countries and the global trading system (Whalley 1989) supported by the Ford Foundation and covering 11 developing countries: Argentina, Brazil, China, Costa Rica, India, Kenya, Mexico, Nigeria, the Philippines, Republic of Korea, and Tanzania.

Many factors underlie these liberalizations. They include rethinking the basic approach toward trade policy in a number of countries, with less commitment than earlier to import substitution and more interest in outward-oriented development strategies. Conditionality in World Bank and IMF lending programs appears important in Africa, and in some of the Asian and Latin American countries. In some cases, sector-specific liberalization also has been the result of bilateral pressure from the United States and the European Community. Recent strong macro performance in the developed world also has generated substantial growth in foreign exchange earnings for developing countries and has facilitated this liberalization.

The paper concludes by suggesting that, in the short to medium term, some reciprocal actions by the developed countries in the GATT Uruguay Round would help keep alive domestic political support for these liberalizations.

The Politics of Intergenerational Redistribution

Guido Tabellini
Working Paper No. 3058
August 1989
JEL Nos. 023, 020, 320

This paper studies the political-economic equilibrium of a two-period model with overlapping generations. In each period, the policy is chosen under majority rule by the generations currently alive. The paper identifies a "sustainable set" of values for public debt. Any amount of debt within this set is fully repaid in equilibrium, even in the absence of commitments. By issuing debt within this set, the first generation of voters redistributes revenue in its favor and away from the second generation. The paper characterizes the determinants of the equilibrium intergenerational redistribution carried out in this way and points to a difference between debt policy and Social Security legislation as instruments of redistribution. The key features of the model are heterogeneity within each generation and altruism across generations.

Judging Factor Abundance

Harry P. Bowen and **Leo Sveikauskas**
Working Paper No. 3059
August 1989
JEL No. 410

Recent theoretical developments have cast doubt on the reliability of the commonly used cross-industry regression as a method for inferring a country's abundant factors. This paper examines the empirical importance of these theoretical cautions by comparing regression-derived estimates of factor abundance with both revealed and actual factor abundances for 35 countries and up to 12 resources. Trade imbalances affect the regression estimates. Therefore we derive and implement a theoretically consistent trade balance correction. The results indicate that despite theoretical concerns, the regression measures often are reliable indicators of revealed factor abundances. The results thus enhance the credibility of the findings of the numerous regression studies that have been conducted over the past 30 years.

Interest Rate Term Premiums and the Failure of the Speculative Efficiency Hypothesis: A Theoretical Investigation

Carol L. Osler
Working Paper No. 3060
August 1989
JEL No. 431

This paper develops a new parity condition for international financial markets that relates differences between the forward exchange rate and the expected future exchange rate to interest rate term premiums. It begins with the general proposition that uncovered interest parity (UIP) cannot hold for all maturity horizons if interest rate term premiums are imperfectly correlated across countries and expectations are rational. I find the conditions under which UIP could hold for multiple horizons, under these two assumptions, to be very restrictive. I argue that if UIP holds at all under these circumstances, it is likely to hold only at a very short time horizon. Finally, I show that under these assumptions if UIP holds at the shortest time horizon, then the difference between forward exchange rates and expected future spot rates at all other horizons will be the difference in expected term premiums at each maturity.

A Note on Optimal Deterrence When Individuals Choose Among Harmful Acts

Steven Shavell
Working Paper No. 3061
August 1989
JEL Nos. 022, 916

The theory of deterrence has been concerned primarily with situations in which individuals consider whether to commit a *single* harmful act (whether to discharge a pollutant into a lake, whether to steal a car) rather than with situations in which individuals decide which of *several* harmful acts to commit (whether to discharge one pollutant or another pollutant into a lake, whether to engage in car theft or in burglary). In the latter situations, the threat of sanctions plays a role in addition to the usual one of deterring individuals from committing harmful acts: it influences which harmful acts *undeterred* individuals choose to commit. It accomplishes "marginal deterrence."

I show that *sanctions may increase more with harm when individuals choose among harmful acts than when individuals choose only whether to commit single harmful acts*. The reason is that a higher gradation of sanctions encourages undeterred individuals to commit less harmful acts. The assumption necessary for this conclusion is that probabilities of apprehension for different acts are equal, being determined by a *general* level of enforcement effort. If enforcement effort is *specific* to the act, the conclusion does not hold; optimal sanctions for different acts are then equal.

Specific versus General Enforcement of Law

Steven Shavell
Working Paper No. 3062
August 1989
JEL Nos. 022, 916

I examine the problem of optimal public enforcement of law in a model in which I distinguish two types of enforcement effort: *specific enforcement effort* (activity devoted to apprehending and penalizing individuals who have committed a single type of harmful act); and *general enforcement effort* (activity affecting the likelihood of apprehension of individuals who have committed any of a range of harmful acts). For instance, a policeman on the beat is able to apprehend many types of violators of law. If all enforcement effort is specific, then under wide assumptions it is optimal for sanctions to be extreme for all acts. However, if all enforcement effort is general, optimal sanctions are low for acts of small harmfulness, they increase with the degree of harmfulness, and they reach the extreme only for the most harmful acts (the main result of the paper). I also consider the assumption that enforcement effort may be both general and specific.

How Rational Is the Purchase of Life Insurance?

Alan J. Auerbach and **Laurence J. Kotlikoff**
Working Paper No. 3063
August 1989
JEL No. 921

This paper asks whether middle-aged American households purchase adequate amounts of life insurance. We base the analysis on SRI International's 1980, 1982, and 1984 surveys of the financial positions of American households. Our findings indicate that a significant minority of American wives are very underinsured with respect to the possible deaths of their husbands. Under the assumption that actuarially fair annuities are available, we find that just over 30 percent of wives are inadequately insured: they would suffer a loss in their rate of sustainable consumption of at least 30 percent in the event of being widowed. If one assumes that annuities are not available, the fraction of wives who are inadequately insured is 24 percent.

These findings on inadequate life insurance are even more striking if one focuses on those households in which over half of the couple's present expected value of resources is dependent on the husband's survival.

The fraction of wives in such households who are inadequately insured is 41 percent if one assumes fair annuities are available, and 31 percent if one assumes such annuities are unavailable. The problem of inadequate insurance is even more significant among households of more modest means. Almost half of wives in such households who need life insurance protection are inadequately insured, and this statement holds regardless of whether fair annuities are available.

The results of this paper, together with those of the related literature, strongly suggest that raising the share of Social Security benefits that are paid to surviving spouses and increasing employer-provided group life insurance could have considerable impact on the alleviation of poverty among widows, especially elderly widows.

What Is the Marginal Source of Funds for Foreign Investment?

Joosung Jun
Working Paper No. 3064
August 1989

This paper analyzes the marginal source of funds for foreign investment, using both aggregate data and microdata on the intrafirm transactions of U.S. international firms. Tax arbitrage regarding the form and timing of transactions, combined with risks involved with foreign operations and the desire of the parent to control subsidiaries, suggests that parent transfers provide the marginal source of funds for most foreign investment. Our conclusion is consistent with the seemingly puzzling evidence that some subsidiaries have positive dividends and transfers simultaneously despite the associated tax penalties, and others neither pay dividends nor receive transfers. Our analysis and empirical evidence are in sharp conflict with the widely held tax capitalization view: that retained subsidiary earnings are the marginal source of financing foreign investment.

Firms' Choice of Method of Pay

Charles C. Brown
Working Paper No. 3065
August 1989
JEL No. 821

Three types of pay-setting methods are: piece rates (pay mechanically linked to output), merit pay (pay based on less formal judgments by one's supervisor), and standard rates (pay based on one's job classification and perhaps seniority, but not directly on performance). Firms' choice among methods depends on balancing the gains from more precise links between performance and pay against the costs of either precise or judgmental measures of output. Using data from the BLS Industry Wage Study program, I test, and for the most part confirm, hypotheses suggested by this observation.

Endogenous Exchange Rate Regime Switches

Gabriel de Kock and **Vittorio U. Grilli**
Working Paper No. 3066
August 1989
JEL No. 430

We demonstrate that exchange rate regime switching is compatible with optimal government policies. We define nominal exchange rate regimes as equilibrium commitments on future seigniorage policies, and the collapse of an exchange rate peg as an excusable default that allows the government to levy a lump-sum tax on money holdings in the private sector. We demonstrate that a regime in which the exchange rate peg is allowed to collapse when government spending is unusually high is a trigger-strategy equilibrium. Such a regime can be superior to both fixed and flexible exchange rates, because it combines some of the flexibility of the floating exchange rates with some of the benefits of precommitment afforded by fixed rates.

Nominal Exchange Rate Regimes and the Real Exchange Rate: Evidence from the United States and Britain, 1885-1986

Vittorio U. Grilli and **Graciela Kaminsky**
Working Paper No. 3067
August 1989
JEL No. 430

Two propositions are common in the international finance literature: 1) the real exchange rate is a random walk; and 2) the real exchange rate time-series properties essentially depend on the nominal exchange rate regime. The first proposition has been used in support of the claim that purchasing power parity cannot even be considered a long-run relationship, since deviations from it are permanent. The second proposition has been used as evidence of price stickiness. Contradicting the first proposition, this paper shows that the random walk behavior of the real exchange rate is just a characteristic of the post-World War II period; in the prewar period, we observe transitory fluctuations. Also, although real exchange rate volatility appears to be different between fixed and flexible exchange rate regimes, these differences are not as systematic and large as the postwar data suggest.

Managing Exchange Rate Crises: Evidence from the 1890s

Vittorio U. Grilli
Working Paper No. 3068
August 1989
JEL No. 430

This paper investigates the effectiveness of the monetary authority's borrowing policies in resolving exchange rate crises. It shows why obtaining loans or lines of credit in foreign currency may avoid, at least temporarily, the devaluation of a fixed exchange rate. I also discuss the problem of the optimal size of the loan and/or the line of credit. The analysis focuses on a particular episode of foreign exchange rate pressure, during the troubled years between 1894 and 1896. The results suggest that the borrowing policy followed by the U.S. Treasury in those years was effective in avoiding the collapse of the U.S. gold standard, and that the amount of the borrowing undertaken by the Treasury might have been optimal.

The Impact of the Mariel Boatlift on the Miami Labor Market

David Card
Working Paper No. 3069
August 1989
JEL No. 820

This paper presents an empirical analysis of the effect of the Mariel Boatlift on the Miami labor market, focusing on the wages and unemployment rates of less-skilled workers. The Mariel immigrants increased the population and labor force of the Miami metropolitan area by 7 percent. Most of the immigrants were relatively unskilled: as a result, the proportional increase in labor supply to less-skilled occupations and industries was much greater. Nevertheless, an analysis of wages of non-Cuban workers over 1979–85 reveals virtually no effect of the Mariel influx. Likewise, there is no indication that the boatlift led to an increase in the unemployment rates of less-skilled blacks or other non-Cuban workers. Even among the Cuban population, wages and unemployment rates of earlier immigrants were not substantially affected by the arrival of the Mariels.

Taxation of Foreign-Owned Land

James A. Brander
Working Paper No. 3070
August 1989
JEL No. 420

This paper examines the welfare effects of a tax on foreign purchases of domestic land. Using a simple static framework, I show that an appropriately chosen tax generally will be welfare-improving for the domestic home country.

Trade Adjustment Assistance: Welfare and Incentive Effects of Payments to Displaced Workers

James A. Brander and **Barbara J. Spencer**
Working Paper No. 3071
August 1989
JEL No. 420

We analyze the welfare effects of conditional trade adjustment assistance (that is, assistance that is received only if displaced workers remain unemployed), and compare the conditional program with unconditional assistance. Taking the level of assistance as exogenous, we show that either the conditional or the unconditional program may impose greater efficiency costs, depending on underlying parameters. We then introduce an explicit social welfare function and solve for the optimal level of assistance for each program. Finally, we compare the optimized values of the two programs. If the distribution of wage offers is uniform, then the unconditional program is welfare superior.

Moderation Elections

Alberto Alesina and **Howard Rosenthal**
Working Paper No. 3072
August 1989

This paper extends the spatial theory of voting to an institutional structure in which policy choices are a function of the composition of the legislative and executive branches. In an institutional setup in which the policy outcome depends upon relative plurality, each voter has incentives to be strategic, since the outcome depends upon how everyone else votes. By applying the refinements of Strong Nash and Coalition Proof Nash to this game among voters, we prove the existence of equilibriums with properties that appear intuitive and realistic. In fact, the model has several testable implications that seem consistent with some observed patterns of voting behavior in the United States, and perhaps in other democracies, in which the executive is elected directly. For instance, the model predicts: 1) split-ticket voting; 2) for some parameter values, a split government with different parties controlling the executive and holding the majority in the legislature; and 3) the mid-term electoral cycle.

Election Polls, Free Trade, and the Stock Market: Evidence from the 1988 Canadian General Election

James A. Brander
Working Paper No. 3073
August 1989
JEL No. 420

This paper examines the relationship between the Toronto Stock Exchange (TSE) and election polls during the 1988 Canadian General Election campaign. I ask first, did polls influence the TSE, and second, if so, did the nature of the influence suggest that investors were reacting to expectations of the effect of the Canada-U.S. Free Trade Agreement (FTA)? I find that the TSE was positively related to Conservative popularity as measured by polls, but that the differential movement of TSE subindexes does not offer additional support to an FTA-based interpretation of events.

Consistent Valuation and Cost of Capital Expressions with Corporate and Personal Taxes

Robert A. Taggart, Jr.
Working Paper No. 3074
August 1989
JEL No. 520

This paper examines three valuation methods, each of which should lead to the same value for a given asset: the adjusted present value, adjusted discount rate, and flows-to-equity. To achieve identical valuations, however, the different methods must be implemented with cost-of-capital expressions that embody a consistent set of assumptions about the tax regime and the time pattern and riskiness of debt tax shields. I group and contrast valuation and cost of capital expressions proposed in the literature according to these assumptions. I also show that the familiar weighted average cost of capital can be consistent with any such set of assumptions, as long as the correct expression is used to estimate the relationship between the levered and unlevered cost of equity.

Israel's Crisis and Economic Reform: A Historical Perspective

Michael Bruno
Working Paper No. 3075
August 1989

This article analyzes the roots of the deep crisis that has afflicted the Israeli economy since 1973 and the attempt at economic reform and recovery since 1985. The background is the long-term evolution in Israel's structure and growth process. At the center of the analysis lie the implications of an oversized government and, especially, the devastating effects on growth and inflation of the large and persistent public sector deficit on top of the growing tax and public expenditure levels. The norm of "living beyond one's means" at the public sector level also has severely affected the norms of behavior of the private, household sector as well as the business sector.

Since 1985 there have been signs of recovery originating from the balancing of the budget and the relative stabilization of the currency. Labor and capital markets gradually are becoming more flexible and real interest rates are coming down. Even so, inflation rates are not yet down to international levels; continued budget balance is not assured; and excessive wage increases have diminished profit rates and investments in the business sector substantially. Structural problems, rooted in economic mismanagement of the crisis years, are surfacing.

Resumption of a sustained growth process requires persistent budget balance and a substantial additional reduction in public expenditure and tax levels. Structural reforms, only barely started, have to be persistently followed in the labor and capital markets, in the fiscal system, and in the further opening of commodity and financial markets to competition from both home and abroad.

Distance, Demand, and Oligopoly Pricing

Robert C. Feenstra and **James A. Levinsohn**
Working Paper No. 3076
August 1989

We demonstrate how to estimate a model of product demand and oligopoly pricing when products are differentiated multidimensionally. We provide an empirical counterpart to recent theoretical work on product differentiation. Using specifications informed by economic theory, we simultaneously estimate a demand system and price-cost margins for products differentiated in many dimensions.

Economic and Financial Determinants of Oil and Gas Exploration Activity

Peter C. Reiss
Working Paper No. 3077
August 1989
JEL Nos. 520, 630

This paper studies the investment activities of 44 independent oil and gas firms from 1978-86. A dynam-

ic model of oil and gas exploration and development predicts less of a decline in exploration activity than actually occurred in 1985-6. I consider the extent to which financial factors may have affected firms' investment plans during the 1985-6 deflation. There is some evidence that credit contracts in this industry did place important limitations on firms' abilities to respond to the energy price deflation. These constraints were imposed because lenders could not distinguish between unfavorable industry developments and poor individual firm performance.

Tax Compliance: An Investigation Using Individual TCMP Data

Kurt J. Beron, Helen V. Tauchen, and **Ann Dryden Witte**
Working Paper No. 3078
August 1989

This paper analyzes the tax compliance behavior of U.S. taxpayers using a 1979 dataset that combines: information from a random sample of individual tax returns, each of which has been thoroughly audited; IRS administrative records; and sociodemographic data from the Census. We find that both audits and tax code provisions affect compliance. However, the effects are significant only for the low- and high-income groups. Interestingly, previous research has shown that these groups also participate most actively in underground economic activities, the income from which is not reported on any tax returns. Our results for audits suggest that the "ripple," or general deterrent, effect of audits may be many times larger than the direct revenue yield of audits for high-income taxpayers. Our results also imply that the 1986 Tax Reform Act's changes to lower allowable subtractions from income may have encouraged compliance.

Bank Monitoring and Investment: Evidence from the Changing Structure of Japanese Corporate Banking Relationships

Takeo Hoshi, Anil Kashyap, and **David Scharfstein**
Working Paper No. 3079
August 1989
JEL No. 520

In the 1980s, the structure of corporate finance in Japan has changed dramatically. Japanese firms that once used bank debt as their prime source of financing now rely more heavily on the public capital markets. This trend was facilitated by the substantial deregulation of Japanese capital markets.

In a 1988 paper, we demonstrated that investment by firms with close bank relationships appears to be less liquidity-constrained than investment by firms without close bank ties. We interpreted this finding as evidence that bank ties tend to mitigate information problems in the capital market. This paper tracks the investment behavior of firms that have recently weakened their bank ties in favor of greater reliance on the bond market. The results suggest that these firms are now more liquididity-constrained. The paper concludes with a discussion of why firms would loosen their bank ties in light of these liquidity costs.

Optimal Incentives to Domestic Investment in the Presence of Capital Flight

Assaf Razin and **Efraim Sadka**
Working Paper No. 3080
August 1989
JEL Nos. 320, 430

This paper develops a model of an open economy with access to the world capital market and that employs distortionary taxes to finance public consumption. We ask how efficient are quantity restrictions on capital exports and the accompanying set of taxes. We distinguish between a benchmark case, in which the government can tax foreign-source income fully, and a more realistic case, in which the government cannot tax foreign-source income effectively.

Wage and Employment Uncertainty and the Labor Force Participation Decisions of Married Women

Francine D. Blau and **Adam J. Grossberg**
Working Paper No. 3081
August 1989
JEL No. 813

Over the past 30 years, research has concluded virtually without exception that the principal source of growth in the labor force participation rate for married women has been the concurrent growth of women's real wages. The experience of the 1970s suggests, however, that real wage growth cannot account for the increase in participation rates that occurred during that period. This paper argues that an important determinant of married women's current participation decisions is the level of uncertainty associated with expectations of future wages. High levels of uncertainty during the 1970s may have contributed substantially to the growth in participation that occurred during that time. Engle's model of autoregressive conditional heteroskedasticity

(ARCH) is applied to aggregate time-series data covering 1956–86 to measure the level of uncertainty at each point in time. Our estimates support the basic hypothesis that the level of uncertainty is an important determinant of labor force participation decisions for married women.

Health Benefits of Increases in Alcohol and Cigarette Taxes

Michael Grossman
Working Paper No. 3082
August 1989
JEL No. 913

Health taxes on alcohol and cigarettes imposed by the U.S. government have been very stable since 1951. This paper shows that increased taxation, which results in higher prices, would discourage alcohol abuse and cigarette smoking. A policy to raise the federal excise tax on beer in line with the rate of inflation over the last three decades would cut motor vehicle fatalities for 18–20 year olds, many of which are alcohol-related, by about 15 percent, saving more than 1000 lives per year. Also, in the cohort of Americans who were 12 years or older in 1984, over 800,000 premature deaths would be averted if the federal excise tax on cigarettes were restored to its real value in 1951.

Collateral, Rationing, and Government Intervention in Credit Markets

William G. Gale
Working Paper No. 3083
August 1989
JEL No. 321

This paper analyzes the effects of government intervention in credit markets when lenders use collateral, interest, and the probability of granting a loan as potential screening devices. I examine equilibriums with and without rationing. The principal theme is that credit policies operate through their effect on the incentive compatibility constraint, which inhibits high-risk borrowers from mimicking the behavior of low-risk borrowers. Any policy that loosens (tightens) the constraint raises (reduces) efficiency.

Most government credit programs explicitly attempt to fund investors who cannot obtain private financing. In the model presented here, these subsidies increase the extent of rationing and reduce efficiency. In contrast, policies that subsidize the nonrationed borrowers, or all borrowers, enhance the efficiency and reduce the extent of rationing.

Explaining Pension Dynamics

Rebecca A. Luzadis and **Olivia S. Mitchell**
Working Paper No. 3084
August 1989

Will the U.S. labor market fail to adapt smoothly to an aging work force, or will employee pensions play an important role in helping companies induce desired turnover patterns? To answer that question, we undertake a longitudinal examination of pension retirement incentives in several dozen plans observed between approximately 1960 to 1980.

The plans instituted many changes over this period, several of which enhanced the financial payoff to early retirement. These alterations included: increases in benefit levels; reductions in early, normal, and mandatory retirement ages; and cuts in the age at which pension present values peak (with retirement after that age penalized). Simple indicators of pension plans' structural features (for example, the plan's early retirement age) do not adequately summarize the complex financial incentives inherent in pensions, so we direct most of our attention to measures of financial benefit levels.

We empirically evaluate three major explanations for observed pension outcomes. Of special policy interest is an evaluation of pension responses to changes in Social Security benefit rules. Additionally, we discover key differences in behavior between single-employer and multi-employer pension plans. We conclude that pension plan behavior is systematically related to both labor and product market characteristics, and is responsive to retirement income policy.

Evaluating Pension Policies in a Model with Endogenous Contributions

Alan L. Gustman and **Thomas L. Steinmeier**
Working Paper No. 3085
August 1989
JEL Nos. 820, 918

We use a model of the firm and its pension plan to simulate the first-round effects of various pension policies. These pension policies create an imbalance in the pension fund that affects the level of pension contributions and, ultimately, wages. Changes in pension policies affect the differential between compensation and productivity for individual workers, in turn altering the distributions of compensation and of incentives for retirement, mobility, and effort. The policies we investigate regulate: vesting; pension calculations for early leavers, early retirees, and late retirees; maximum service credits; liabilities at termination; and funding practices.

The Stampede Toward Defined-Contribution Pension Plans: Fact or Fiction?

Alan L. Gustman and **Thomas L. Steinmeier**
Working Paper No. 3086
August 1989
JEL Nos. 820, 918

Is the trend toward defined-contribution plans and away from defined-benefit plans caused by increased pension regulation and/or a changing economic environment? Using data from filings of IRS Form 5500 by pension administrators, we find that at least half of the trend is caused by a shifting employment mix toward the type of firms that historically have been associated with lower defined-benefit plan rates because of their industry, size, or union status. Not more than half of the trend can be attributed to a "stampede" toward defined-contribution pension coverage by firms with a given industry, size, and union status.

Changing the Social Security Rules for Workers over 65: Proposed Policies and Their Effects

Alan L. Gustman and **Thomas L. Steinmeier**
Working Paper No. 3087
August 1989
JEL Nos. 820, 915, 918

We simulate the effects of different ways of adjusting the Social Security benefits of those who work beyond normal retirement age. A basic set of policies, currently under consideration, is projected to raise long-run costs by $30 billion, net of taxes; it also is expected to induce an increase of 5 percent in the number of full-time male workers between the ages of 65 and 69. Alternative policies may create very different flows of funds. Especially in the short run, outcomes will vary widely with the timing of the application decision for benefits.

Financial Integration, Liquidity, and Exchange Rates

Vittorio U. Grilli and **Nouriel Roubini**
Working Paper No. 3088
August 1989
JEL No. 430

This paper presents a two-country extension of work (Lucas, 1988) on how cash-in-advance constraints in asset markets affect the pricing of financial assets. In the model, there is some degree of separation between the goods markets and the asset markets, and money is used for transactions in both markets. We find that the equilibrium level of the exchange rate depends on the share of money used for asset transactions: a greater share corresponds to a more appreciated exchange rate. Second, under uncertainty, the liquidity effects of stochastic shocks to bond creation lead to "excess" volatility of nominal and real exchange rates, even when the "fundamental" value of the exchange rate is constant. Third, capital controls—in the form of taxes on foreign asset acquisitions—tend to cause the exchange rate to appreciate. Fourth, the maturity structure of the public debt affects the equilibrium exchange rate. In particular, a move toward a longer maturity structure will tend to cause the exchange rate to depreciate.

Incentive Effects of Workers' Compensation Insurance

Alan B. Krueger
Working Paper No. 3089
August 1989
JEL No. 822

This paper uses data from the Current Population Survey to estimate the determinants of participation in state workers' compensation programs in the United States. The principal finding is that higher workers' compensation benefits are associated with greater participation in the workers' compensation program, after accounting for worker characteristics, state fixed effects, and other aspects of the workers' compensation law. Moreover, this result holds for both manufacturing and nonmanufacturing workers. However, workers' compensation benefits have an insignificant effect on program participation for the sample of women. Overall, a 10 percent increase in benefits is associated with a 6.7 percent increase in program participation. In addition, the waiting period that is required before benefit payments begin has a substantial negative effect on participation in the workers' compensation program. Finally, the growth in workers' compensation claims in the 1970s appears to correspond reasonably well to the growth in real benefits that occurred during that time period.

Consumption Growth Parallels Income Growth: Some New Evidence

Chris Carroll and **Lawrence H. Summers**
Working Paper No. 3090
September 1989
JEL Nos. 130, 400, 850, 110

This paper argues that the versions of both perma-

nent-income and life-cycle theories that have become fashionable recently are inconsistent with the grossest features of cross-country and cross-sectional data on consumption and income. There is clear evidence that consumption and income growth are much more closely linked than these theories would predict. It appears that consumption smoothing takes place over several years, not several decades.

Our results confirm Milton Friedman's (1957) initial view that: "The permanent-income component is not to be regarded as expected lifetime earnings.... It is to be interpreted as the mean income at any age regarded as permanent by the consumer unit in question, which in turn depends on its horizon and foresightedness." We question the usefulness of standard "representative consumer" approaches to the analysis of saving behavior, and call for increased emphasis on liquidity constraints and short-run precautionary saving as determinants of consumption behavior.

Intrinsic Bubbles: The Case of Stock Prices

Kenneth A. Froot and **Maurice Obstfeld**
Working Paper No. 3091
September 1989

Several puzzling aspects of the behavior of U.S. stock prices can be explained by a specific type of rational bubble that depends exclusively on dividends. Such "intrinsic" bubbles derive all of their variability from exogenous economic fundamentals, not from extraneous factors. Unlike the most popular examples of rational bubbles, intrinsic bubbles provide an empirically plausible account of deviations from present-value pricing. Their explanatory potential comes partly from their ability to generate persistent deviations that appear relatively stable over long periods.

Converting Corporations to Partnerships Through Leverage: Theoretical and Practical Impediments

Myron S. Scholes and **Mark A. Wolfson**
Working Paper No. 3092
September 1989
JEL Nos. 323, 521

We explore the degree to which debt financing can reduce the corporate-level tax on income in the United States. Although debt is capable of shielding the competitive rate of return on projects from the corporate-level tax, debt financing cannot shield the positive net present value portion of project returns. Since nontax factors preclude corporate activities from being 100 percent debt financed, a portion of the competitive return to corporate activity also is subject to double taxation.

We also consider alternative mechanisms that convert the corporate tax to a personal tax (or a partnership tax). These include other claims that give rise to tax-deductible payments to the corporation, such as obligations to employees, lessors, and suppliers. All of these alternatives are limited in their ability to eliminate the corporate-level tax.

Decentralized Investment Banking: The Case of Discount Dividend Reinvestment and Stock Purchase Plans

Myron S. Scholes and **Mark A. Wolfson**
Working Paper No. 3093
September 1989
JEL Nos. 313, 314, 421

Discount dividend reinvestment and stock purchase plans allow shareholders to capture part of the underwriting fees incurred in new stock offerings and to save sponsoring firms some of the usual underwriting costs. We test the degree to which individual investors can serve this investment banking function profitably by implementing simple investment/trading strategies designed to capture the discounts and distribute the shares in the market. The large profits earned by our strategies raise serious questions about why it takes firms so long to raise the target level of capital and why many eligible shareholders do not participate in these discount plans.

Employee Stock Ownership Plans and Corporate Restructuring: Myths and Realities

Myron S. Scholes and **Mark A. Wolfson**
Working Paper No. 3094
September 1989
JEL Nos. 323, 521

During the first six months of 1989, U.S. corporations acquired over $19 billion of their own stock to establish employee stock ownership plans (ESOPs). We evaluate the common claims that there are unique tax and incentive contracting advantages to establishing ESOPs. Particularly for large firms, where the greatest growth in ESOPs has occurred, the case is very weak for taxes being the primary motivation to establish an ESOP. The case is also weak for employee incentives being the driving force behind ESOPs. We conclude that the main motivation for the growth of ESOPs is their antitakeover characteristics.

The Effects of Changes in Tax Laws on Corporate Reorganization Activity

Myron S. Scholes and **Mark A. Wolfson**
Working Paper No. 3095
September 1989
JEL Nos. 323, 442, 522

We present evidence that 1980s' changes in tax laws, culminating with the Tax Reform Act of 1986, had a first-order effect on observed merger and acquisition activity in the United States. Also, increased reliance on certain institutional arrangements (unit management buyouts and going-private transactions) used to effect mergers and acquisitions, which were designed to reduce the nontax costs of transacting, enabled tax benefits to be realized in a larger number of mergers and acquisitions than might have occurred otherwise.

We begin with a "closed-economy" perspective, focusing on the effects of changes in tax laws on the demand for mergers and acquisitions *of* U.S. corporations *by* U.S. corporations. We then broaden the scope of inquiry by modeling and testing the effects of changes in tax laws on the demand for mergers and acquisitions of U.S. corporations by foreign multinationals. We predict and present confirmatory evidence that, while the 1986 Tax Act discouraged transactions among U.S. corporations, it increased the demand for merger and acquisition transactions between U.S. sellers and foreign buyers.

The Capital Levy in Theory and Practice

Barry J. Eichengreen
Working Paper No. 3096
September 1989
JEL No. 430

A capital levy is a one-time tax on all wealthholders with the goal of retiring public debt. This paper reconsiders the historical debate over the capital levy in a contingent capital taxation framework. In theory, a levy can improve welfare when it is adopted to redress debt problems created by special circumstances, even if it cannot be guaranteed that there will be no further levy. If the contingencies leading to the levy are fully anticipated, independently verifiable, and not under government control, then saving and investment should not fall following the imposition of the levy, nor should the government find it more difficult to raise revenues subsequently.

In practice, serious problems stand in the way of implementation. A capital levy has profound distribution consequences. Property owners are sure to resist its adoption. In a democratic society, their objections are guaranteed to cause delay. This provides an opportunity for capital flight, reducing the prospective yield, and allows the special circumstances providing the justification for the levy to recede in the past. The only successful levies occur in such cases as post-World War II Japan, where important elements of the democratic process are suppressed and where the fact that the levy was imposed by an outside power minimized the negative impact on the reputation of subsequent sovereign governments.

The Comparative Performance of Fixed and Flexible Exchange Rate Regimes: Interwar Evidence

Barry J. Eichengreen
Working Paper No. 3097
September 1989

This paper reports on the characteristics of fixed and flexible exchange rate regimes. It contrasts experience under three interwar exchange rate regimes: the free float of the early 1920s; the fixed rates of 1927–31; and the managed float of the early 1930s. A number of important differences across nominal exchange rate regimes emerge. I find that: 1) The variability of nominal exchange rates was associated positively with the freedom of the float. Nominal rates were considerably more variable under free than under managed floating. 2) The reduction in nominal exchange rate variability achieved with the move from free to managed floating was not accompanied by a commensurate fall in exchange rate uncertainty. While government policy succeeded in damping spot rate fluctuations, it seems to have been subject to periodic shifts that heightened risk. 3) There was a strong association between nominal exchange rate predictability and real exchange rate predictability in both the free float of 1922–6 and the managed float of 1932–6. Together with 2), this implies that intervention of stabilized nominal rates did not guarantee a commensurate reduction in real exchange rate uncertainty. 4) There was no direct correspondence between the degree of exchange rate stability and the volume of international capital flows. Real interest differentials were larger under the managed float of the 1930s than under the free float of the 1920s. 5) Capital controls provide a major part of the explanation for differences across regimes in the magnitude of real interest differentials. Controls were considerably more prevalent under managed floating than under either free-floating or fixed rates. Thus, interwar experience provides a counterexample to the popular notion that capital controls tend to be associated with fixed rate regimes.

Increasing Returns and New Developments in the Theory of Growth

Paul M. Romer
Working Paper No. 3098
September 1989

Growth theory always has been faced with technically challenging questions about increasing returns and the way to capture ideas in a model of market exchange. Initially, reliance on perfect competition forced growth theory to narrow its scope. Recently, new tools for studying dynamic equilibriums with nonconvexities, externalities, and imperfect competition have allowed growth theory to address broader questions such as: Why have growth rates tended to increase over time? Why aren't flows of capital sufficient to equalize wages in different countries? How do trade policy, or aggregate research and development expenditure, or the extent of patent protection influence the rate of growth?

Quality Ladders in the Theory of Growth

Gene M. Grossman and **Elhanan Helpman**
Working Paper No. 3099
September 1989
JEL Nos. 111, 621

We develop a model of repeated product improvements in a continuum of sectors. Each product follows a stochastic progression up a quality ladder. Progress is not uniform across sectors, so an equilibrium distribution of qualities evolves over time. But the rate of aggregate growth is constant. The growth rate responds to profit incentives in the R and D sector. We explore the welfare properties of our model. We then relate our approach to an alternative that views product innovation as a process of generating an ever-expanding range of horizontally differentiated products. Finally, we apply the model to issues of resource accumulation and international trade.

The McKibbin-Sachs Global Model: Theory and Specification

Warwick H. McKibbin and **Jeffrey D. Sachs**
Working Paper No. 3100
September 1989

This paper presents the theoretical underpinnings of the MSG2 simulation model of the world economy. The MSG2 model is a dynamic general equilibrium model of the world economy that pays particular attention to the relationship between stocks and flows and intertemporal constraints. The formation of expectations also plays an important role in the model. In the version presented here, the world is divided into the United States, Japan, Germany, the rest of the European Monetary System, and the rest of the OECD, nonoil developing countries, and OPEC.

Pension Funds and Financial Innovation

Zvi Bodie
Working Paper No. 3101
September 1989
JEL No. 520

Pension funds have played a critical role in the evolution of the markets for debt and equity securities and their derivatives in the United States over the last 15 years. The new securities and markets can be explained largely as responses to the investment demands of pension funds in an environment of increased interest rate volatility and tighter regulation.

Defined-benefit pension plans offer annuities that have a guaranteed floor specified by the benefit formula. In order to minimize the cost to the sponsor of providing this guarantee, there is a strong incentive to invest an amount equal to the present value of the accumulated benefit obligation in fixed-income securities with a matching duration. The pursuit of duration matching and related immunization strategies by pension funds has contributed to the emergence and rapid growth of markets for zero coupon bonds, GICs, CMOs, options, and financial futures contracts. Recent changes in accounting rules (FAS 87) and tax law (OBRA) are likely to reinforce the use of immunization strategies.

Inflationary Expectations and Price-Setting Behavior

Ray C. Fair
Working Paper No. 3102
September 1989
JEL No. 134

This paper tests for the existence of expectational effects in very disaggregated price equations. I estimate price equations using monthly data for each of 40 products. I also test the dynamic specification of the equations, including whether they should be specified in level form or in change form. I use two expectational hypotheses, one in which expectations of the aggregate price level are a function of the past values of the

price level, and one in which expectations are rational. Under the first hypothesis, I estimate the lag length with the other parameters; under the second hypothesis, I estimate the lead length with the other parameters.

The results strongly support the hypothesis that aggregate price expectations affect individual pricing decisions. The results do not discriminate very well between the level and change forms of the price equation, although there is a slight edge for the level form. I do not estimate the lag and lead lengths precisely, but in most cases the lag length is less than 30 months and the lead length is less than five months.

World Integration, Competitive and Bargaining Regimes Switch: An Exploration

Joshua Aizenman
Working Paper No. 3103
September 1989
JEL No. 400

This paper studies the role of an endogenous switch from a competitive to a bargaining international equilibrium. I consider two trading blocs that can engage in a free-market determined trade or a trade dictated by bargaining. Bargaining can be called for by either party, and it may involve a fixed real cost. I propose a framework in order to deal with these issues and apply it to a symmetric global environment. The bargaining equilibrium offers an international diversification of the country-specific shocks, whereas the competitive equilibrium retains the country-specific nature of the shocks. The degree of trade dependency determines the risk diversification achieved via the bargaining process, the frequency of bargaining, and the volume of trade. An increase in the relative importance of the trade-dependent activities is associated with greater international diversification of country-specific shocks, and with a greater frequency of bargaining. I derive the optimal investment—less costly bargaining will move us toward a corner solution, in which trade dependency and local shock diversification are maximized. With positive bargaining costs, there will be an internal solution with smaller diversification of local shocks. In such an environment, the choice of optimal trade dependency, at the margin, balances the expected diversification against the costs of bargaining.

The Fisherian Time Preference and the Evolution of Capital Ownership in a Global Economy

Kyoji Fukao and **Koichi Hamada**
Working Paper No. 3104
September 1989
JEL Nos. 430, 440

Conventionally, economic growth theory was based on the assumption of a constant rate of time preference. Uzawa (1968) and Obstfeld (*Quarterly Journal of Economics*, 1981) introduced the rate of time preference that increases with the utility level. Irving Fisher (*The Theory of Interest*) has a different opinion, however: that people are more time-impatient at the lower level of income.

This paper assumes a nonmonotonic time-preference schedule: people are more patient at the middle-income levels and are less patient when they are either very poor or rich. Based on a nonlinear savings function out of wealth implied by such a time-preference schedule, this paper develops a single-good, multi-country growth model of a global economy with free capital mobility. The long-run property of this system is characterized by three kinds of long-run equilibrium: the *starvation* (fatal attractor) *equilibrium;* the *imperialism equilibriums*, dominated by a nation or by a group of nations; and the *coprosperity equilibrium*, in which the wealth and the income of countries in the system grow proportionately.

This system strongly resembles some models of ecology in which species compete for their survival (May, *Stability and Complexity in Model Ecosystems*). Here we can analyze the transition of a debtor to a creditor country properly from a global perspective , and make a case for the pump-priming foreign aid or debt relief policy.

A Shred of Evidence on Theories of Wage Stickiness

Alan S. Blinder and **Don H. Choi**
Working Paper No. 3105
September 1989

We conducted a small interview survey to see how actual wage-setters would react to the central ideas of several economic theories of wage stickiness. Wage cuts were surprisingly prevalent in recent years, despite the booming economy. The strongest finding in the survey was that managers believe that perceptions of fairness play a major motivational role in labor markets. Also, a "fair" wage policy is a good deal more complicated than simply not cutting wages. We also found substantial evidence for money illusion and against the adverse-selection version of the efficiency wage model.

An Equilibrium Theory of Excess Volatility and Mean Reversion in Stock Market Prices

Alan J. Marcus
Working Paper No. 3106
September 1989
JEL Nos. 313, 311

Apparent mean reversion and excess volatility in

stock market prices can be reconciled with the efficient market hypothesis by specifying investor preferences that give rise to the demand for portfolio insurance. Therefore, several supposed macro anomalies can be shown to be consistent with a rational market in a simple and parsimonious model of the economy. Unlike other models that have derived equilibrium mean reversion in prices, the model in this paper does not require that the production side of the economy exhibit mean reversion. It also predicts that mean reversion and excess volatility will differ substantially across subperiods.

Liquidity Constraints in Production-Based Asset Pricing Models

William A. Brock and **Blake LeBaron**
Working Paper No. 3107
September 1989

This paper explores the time-series implications of introducing credit constraints into a production-based asset pricing model. The parameter values we chose for the simulations generate reasonable values for aggregate fluctuations. We find that mean reversion in simulated returns series, measured by variance ratio tests, is enhanced when we introduce binding credit constraints. Without these constraints, there is very little evidence of mean reversion. This is consistent with financial market data, in which the weak evidence for mean reversion is stronger in returns of small firms. We run other tests on the simulated series, including checking the standard deviation, skewness, and kurtosis. These tests do not show strong differences between the constrained and the unconstrained firms in the model.

Striking for a Bargain Between Two Completely Informed Agents

Raquel Fernandez and **Jacob Glazer**
Working Paper No. 3108
September 1989
JEL Nos. 026, 830

This paper models the wage-contract negotiation procedure between a union and a firm as a sequential bargaining process in which the union also decides, in each period, whether or not to strike for the duration of that period. We show that there are subgame-perfect equilibriums in which the union engages in several periods of strikes prior to reaching a final agreement, although both parties are completely rational and fully informed. This has implications for other inefficient phenomena such as tariff wars, debt negotiations, and wars in general. We characterize the set of equilibriums, show that strikes can occur in real time, and discuss extensions of the model, such as lockouts and the possibility of multiple recontracting opportunities.

Asset Prices and Interest Rates in Cash-in-Advance Models

Alberto Giovannini and **Pamela Labadie**
Working Paper No. 3109
September 1989

This paper develops a method for solving and simulating cash-in-advance models of money and asset prices. The models are calibrated to U.S. data spanning 1890-1987 and are used to study some empirical regularities observed in the data over this period. This paper focuses on: the average level of stock returns and returns on nominal bonds; the covariation of *realized* real interest rates and real asset returns with inflation; and the ability of nominal interest rates to predict inflation and nominal stock returns.

The Stolper-Samuelson Theorem Reconsidered: An Example of Ricardian Dynamic Trade Effects

Richard E. Baldwin
Working Paper No. 3110
September 1989

Standard trade theory views the capital stock as an endowment. However, trade policy can affect a country's steady-state capital stock. By ignoring the endogeneity of capital, standard analysis is incomplete and can be misleading. For instance, when capital is endogenous, the Stolper-Samuelson theorem incorrectly predicts the long-run impact of a tariff on factor rewards in a 2-by-2 trade model. Moreover, the output effects of a trade policy can be amplified greatly by its indirect effect on the steady-state capital stock. Since this indirect effect may take a very long time to be fully realized, trade policy can have a long-lasting effect on growth. Ricardo first studied this link between trade and steady-state factor supplies.

Corporate Payouts and the Tax Price of Corporate Retentions: Evidence from the Undistributed Profits Tax of 1936-8

R. Glenn Hubbard and **Peter C. Reiss**
Working Paper No. 3111
September 1989

Many provisions of the U.S. tax code affect corporate decisions to pay out or retain earnings. Most studies examined the effects of dividend and capital gains taxes on payouts, but relatively few considered the effects of corporate taxes on retentions. In the early 1900s, the United States experimented with several

corporate taxes on retentions. These taxes increased the price of corporate retentions, thereby encouraging corporate payouts. This paper studies the response of corporations to the most significant of these experiments—the Undistributed Profits Tax of 1936–8.

To the extent that corporate payouts did respond significantly to a change in the *corporate* price of retentions, we can learn more about the implicit prices corporations place on internal funds. These estimates enable us to better understand the effects of government policies designed to encourage corporate reinvestment. Second, our study provides evidence relevant to several recent proposals designed to resolve managerial agency problems. These proposals require managers to pay out their "free" cash flows as a way of promising not to waste financial capital. The Undistributed Profits Tax of 1936–8 had a similar goal. Its maximum marginal tax rate of 27 percent on corporate retentions gave managers strong incentives to pay out retained earnings.

We use a panel dataset on 26 large petroleum companies. These data have a number of advantages, not the least of which is the relative homogeneity of petroleum firms' investment opportunities. We find that, on average, corporate payout policies did respond significantly to the surtax in 1936, the first year of the tax. There was much less response in 1937, and practically none in the last year, 1938. The smaller payouts in 1937 and 1938 suggest that managers were able to find margins other than dividends through which they could reduce their tax burden. These other margins included the short-term manipulation of expenses and delays in recognizing revenues. These responses suggest that managers place a relatively high valuation on internal versus external funds. They also suggest that proposals that would require managers to pay out free cash flows must resolve an important incentive problem—how to get managers to reveal fully what cash flows are "free." Finally, our results document the importance of recognizing behavioral responses to taxes. That is, firms may respond to changes in relative tax prices by finding other margins by which they can reduce their tax burdens.

Capital Controls and International Trade Finance

Alberto Giovannini and **Jae Won Park**
Working Paper No. 3112
September 1989
JEL No. 431

This paper studies the effects of prohibiting individuals from holding foreign assets, and of allowing firms to trade in foreign assets only up to what is needed to finance export and import activities. Although firms can perform arbitrage between domestic and foreign financial markets, the distortions in asset markets are not fully arbitraged away. Instead they are transmitted to domestic goods markets. We discuss the effects of shocks in foreign financial markets and in domestic fiscal policy. We show that both the dynamics and the steady states are affected crucially by capital controls.

Social Security and the Determinants of Full and Partial Retirement: A Competing-Risks Analysis

Glenn T. Sueyoshi
Working Paper No. 3113
September 1989

Empirical analyses of retirement typically assume a single form of retirement. In this paper, I consider the determinants of retirement in a competing-risks model that allows for full and partial retirement. Simulation results indicate that the large increase in Social Security benefits in the early 1970s has had moderate effects upon retirement, increasing the probability of early full retirement (before age 65) by less than 5 percent and reducing the probability of partial retirement by 1–2 percent.

Introducing Risky Housing and Endogenous Tenure Choice into Portfolio-Based General Equilibrium Models

Patric H. Hendershott and **Yunhi Won**
Working Paper No. 3114
September 1989
JEL Nos. 323, 932

Portfolio-based general equilibrium models are useful for analyzing the interaction between the structure of individual tax rates and the way particular assets are taxed; for considering the role of differential tax rules and risk in determining household portfolio choices; and for addressing distributional questions. Unfortunately, current versions of these models give housing short shrift. Owner housing is assumed to be riskless; rental housing is not a separately identifiable asset; and tenure choice, of necessity, is determined exogenously. This paper shows how these models can be extended to incorporate a full housing subsector. We use an extended version of the Galper-Lucke-Toder (GLT) model to analyze the impact of the 1986 Tax Act.

The interest rate impacts of the extended model are similar to those of GLT: a sharp decline in the fully taxable rate (just over one percentage point); a noticeable

fall in the corporate equity rate (two-thirds of a point); and increases in the returns on noncorporate equity and tax-exempt bonds. The capital stock effects are different because of endogenous tenure choice, the riskiness of owner housing, and the smaller initial holdings of owner housing by high-income households. The owner housing stock increases by 3 percent, the increase coming roughly 50/50 from rental housing and state and local capital. The homeownership rate rises by one-half of a percentage point, virtually all of the increase occurring for households with incomes under $30,000. The small utility gains, $14 billion, are roughly comparable to those of the GLT model. While most of the gains go to high-income households, other households also gain. This is different from the results originally reported in GLT, which contained computational errors.

A.I.L. Theory and the Ailing Phillips Curve: A Contract-Based Approach to Aggregate Supply

Roger E. A. Farmer
Working Paper No. 3115
September 1989

Using U.S. data, I find a structurally stable aggregate supply relationship between real and nominal rates of interest and the rate of unemployment. After reviewing theories of contracts based on the twin assumptions of asymmetric information and limited collateral, I argue that these A.I.L. theories provide a strong foundation for a contract-based explanation of aggregate supply. I suggest that the original Phillips curve estimates should be reinterpreted in light of A.I.L. theories that represent alternatives to the Phelps-Friedman interpretation of the Phillips relationship.

Investment, Financial Factors, and Cash Flow: Evidence from U.K. Panel Data

Michael Devereux and **Fabio Schiantarelli**
Working Paper No. 3116
September 1989
JEL Nos. 131, 315

This paper provides some econometric evidence on the impact of financial factors—cash flow, debt, and stock measures of liquidity—on the investment decisions of U.K. firms. We introduce these financial variables through an extension of the *Q* model of investment, which explicitly includes agency/financial distress costs. We discuss whether the significance of cash flow comes from its being a proxy for output or because it is a better measure of market fundamentals than *Q* is. We also investigate the effect of financial factors across different types of firms, which vary by size, age, and type of industry (growing and declining). Finally, we analyze the determinants of the magnitude of the cash flow effect and explain why caution must be exercised in attributing interfirm differences only to differences in the importance of agency or financial distress costs.

Solving Nonlinear Stochastic Growth Models: A Comparison of Alternative Solution Methods

John B. Taylor and **Harald Uhlig**
Working Paper No. 3117
September 1989
JEL Nos. 213, 214, 111

This paper reports on a comparison of several alternative numerical solution techniques for nonlinear rational expectations models. We asked individual researchers to apply their different solution techniques to a simple, representative agent, optimal, stochastic growth model. We then compared decision rules as well as simulated time series. The differences among the methods turned out to be quite substantial for certain aspects of the growth model. Therefore, researchers might want to be careful not to rely blindly on the results of any chosen numerical solution method in applied work.

The Nonoptimality of Optimal Trade Policies: The U.S. Automobile Industry Revisited, 1979-85

Kathleen Hogan, Kala Krishna, and **Phillip Swagel**
Working Paper No. 3118
September 1989
JEL Nos. 420, 422

We examine the sensitivity of simple calibration models of trade in imperfectly competitive industries to changes in model specification, as well as to changes in the calibration parameters. We find that not just the magnitude, but also the sign, of the optimal trade policies is very sensitive to the change in model specification. Indeed, use of policies derived from the "wrong" model can reduce welfare from the status quo. However, the welfare gains that can be obtained from application of the "correct" model remain limited. Calibration models nonetheless provide useful estimates of firm and market behavior over time, as well as of disaggregated elasticities of demand. We conclude that careful empirical work is necessary to guide model selection. For the present, the case for activist trade policy on the basis of calibration models should not be made.

On the Growth Effects of 1992

Richard E. Baldwin
Working Paper No. 3119
September 1989

This paper demonstrates that several types of dynamic trade effects can be quantified easily, at least roughly. These dynamic effects on output are much larger than the static effects measured by existing empirical studies of trade liberalizations. This paper exposits and measures the Ricardian dynamic trade effect (the link between trade and the steady-state level of productive factors). It also exposits and measures the Grossman–Helpman dynamic trade effect (the link between trade and the steady-state rate of accumulation of productive factors) by calibrating two of the "new" growth theory models.

Economic Growth in a Cross Section of Countries

Robert J. Barro
Working Paper No. 3120
September 1989
JEL Nos. 111, 023

In neoclassical growth models with diminishing returns to capital, a country's per capita growth rate tends to be related inversely to its initial level of per capita income. This convergence hypothesis seems inconsistent with the cross-country evidence, which indicates that per capita growth rates for about 100 countries since World War II are not correlated with the starting level of per capita product. However, if one holds constant initial human capital—as measured by primary and secondary school enrollment rates—there is evidence that countries with lower per capita product tend to grow faster. Countries with higher human capital also have lower fertility rates and higher ratios of physical investment to GDP. These results on growth, fertility, and investment are consistent with some recent theories of endogenous economic growth. The cross-country data indicate that government consumption is related inversely to growth, whereas public investment has little relationship to growth. Average growth rates are related positively to political stability, which may capture the benefits of secure property rights. There is also some indication that distortions of the prices of investment goods are bad for growth. Finally, the analysis leaves unexplained a good deal of the relatively weak growth performances of countries in sub-Saharan Africa and Latin America.

Debt Write-Downs and Debt-Equity Swaps in a Two-Sector Model

Linda Goldberg and **Mark Spiegel**
Working Paper No. 3121
September 1989

Debt overhang models have motivated the possibility of Pareto-improving, market-based debt reduction schemes under an assumption of creditor seizure in bad states. These models usually show that pure debt forgiveness is in the interest of debtor nations, but debt repurchase programs are not.

This paper introduces into the debtor nation a safe sector that is not exposed to seizure during default states. Two important results that emerge are that: debt forgiveness is not necessarily in the interest of all debtors, and the potential for Pareto-improving debt-equity swaps is magnified.

The Gold Standard since Alec Ford

Barry J. Eichengreen
Working Paper No. 3122
September 1989
JEL No. 430

This paper surveys studies of the operation of the classical gold standard published after Alec Ford's 1962 book, *The Gold Standard 1880–1914: Britain and Argentina*. These studies either emphasize stock equilibrium in money markets (examples of the so-called "monetary approach") or stock-flow interactions in bond markets.

The paper then asks how the gold standard worked. A central element of the stability of the gold standard is the credibility of the official commitment to gold. Knowing that policymakers would intervene in defense of the gold standard caused markets to respond in the same direction in anticipation of official action. Hence, there was minimal need for actual intervention. Credibility derived from the fact that the commitment to the gold standard was international. Central banks, including the Bank of England, could rely on foreign assistance in times of exceptional stress. Again, there was only minimal need for actual assistance because the commitment to offer it was fully credible. Thus, international cooperation was a central element of how the classical gold standard worked.

The Effects of Immigration on the Labor Market Outcomes of Natives

Joseph G. Altonji and **David Card**
Working Paper No. 3123
September 1989
JEL No. 820

This paper examines the effects of immigration on the labor market success of less-skilled natives. Working from a simple model of a local labor market, we show that the effects of immigration can be estimated from the correlations between the fraction of immigrants in a city and the employment and wages of natives. The size of the effects depends on the fraction and skill level of the immigrants.

We then compute these correlations using city-specific results for individuals in 120 major SMSAs in the 1970 and 1980 Censuses. We also use the relative industry distributions of immigrants and natives to directly assess the degree of labor market competition between them.

We find a modest degree of competition between immigrants and less-skilled natives. A comparison of industry distributions shows that an increase in the fraction of immigrants in the labor force translates to an approximately equivalent increase in the supply of labor to industries that employ less-skilled natives. Based on this calculation, immigrant inflows from 1970–80 generated increases of 1–2 percent in labor supply to these industries in most cities. A comparison of industry distributions of less-skilled natives in high- and low-immigrant share cities between 1970 and 1980 shows some displacement of natives out of low-wage, immigrant-intensive industries.

We find that immigration has little effect on the employment of the four race/sex groups that we consider. Our estimates of the effect of immigration on the wages of less-skilled natives are sensitive to the specification and estimation procedure. However, our preferred estimates, which are based on first differences between 1980 and 1970 and the use of instrumental variables to control for the endogeneity of immigrant inflows, imply that an increase in immigrants of 1 percent of an SMSA's population reduces native wages by roughly 1.2 percent.

International Monetary Instability between the Wars: Structural Flaws or Misguided Policies?

Barry J. Eichengreen
Working Paper No. 3124
September 1989
JEL No. 430

This paper reassesses the history of the international monetary system between the wars. It confirms the generality of several widely held interpretations of recent experience with floating exchange rates. There is a positive association between nominal exchange rate flexibility and nominal exchange rate variability. There is also a positive association between nominal exchange rate variability and real exchange rate variability. But policies of intervention that reduce nominal exchange rate variability do not guarantee a proportionate reduction in nominal exchange rate risk or in real exchange rate variability and unpredictability; for that, a credible commitment to a stable intervention rule is needed.

I then consider four potential explanations for the collapse of the fixed rate regime that prevailed from 1926–31: 1) failure to play by the "rules of the game"; 2) inadequate international economic leadership by the United States; 3) inadequate cooperation among the leading gold standard countries; and 4) structural features of a system in which reserves were comprised of both gold and foreign exchange. I conclude by assessing the role of the international monetary system in the Great Depression.

A Multi-Country Study of the Information in the Term Structure about Future Inflation

Frederic S. Mishkin
Working Paper No. 3125
September 1989
JEL No. 310

This paper provides evidence on what the term structure (for maturities of 12 months or less) tells us about future inflation in ten OECD countries. The empirical results do not suggest that the level of interest rates helps to forecast the future level of inflation. Instead, for the majority of the countries in the sample, the term structure does not contain a great deal of information about the future path of inflation. However, the results for France, the United Kingdom, and Germany tell a different story. In those countries, the term structure contains a highly significant amount of information about future changes in inflation. This paper suggests that central banks in general should be cautious about using the term structure of interest rates as a guide for assessing inflationary pressures in the economy, as is currently under construction by the U.S. central bank. However, for every country studied except the United Kingdom, there is a great deal of information in the term structure of *nominal* interest rates about the term structure of *real* interest rates. This finding is extremely useful, because it suggests that for most countries researchers can examine observable data on the nominal term structure to provide them with information about the behavior of the *real* term structure.

The Information in the Longer Maturity Term Structure about Future Inflation

Frederic S. Mishkin
Working Paper No. 3126
September 1989
JEL No. 310

This paper provides empirical evidence on the information in the term structure for longer maturities about both future inflation and the term structure of real interest rates. There is substantial information in the longer maturity term structure about future inflation: the slope of the term structure has a great deal of predictive power for future changes in inflation. On the other hand, at the longer maturities, the term structure of nominal interest rates contains very little information about the term structure of real interest rates. These results are strikingly different from those found for very short-term maturities (six months or less) in previous work. For maturities of six months or less, the term structure contains no information about the future path of inflation, but it does contain a great deal of information about the term structure of real interest rates.

At longer maturities, the term structure of interest rates can be used to help assess future inflationary pressures: when the slope of the term structure steepens, the inflation rate likely will rise in the future. When the slope falls, it is an indication that the inflation rate will fall. However, we still must remain cautious about using the evidence presented here to advocate that the Federal Reserve should target the term structure in conducting monetary policy. A change in Federal Reserve operating procedures that focuses on the term structure may well cause the relationship between the term structure and future inflation to shift, with the result that the term structure no longer would be an accurate guide to the path of future inflation. If this were to occur, Federal Reserve monetary policy could go far astray by focusing on the term structure of interest rates.

The Evolution of Unjust-Dismissal Legislation in the United States

Alan B. Krueger
Working Paper No. 3127
September 1989
JEL No. 822

In the last decade, state courts in many areas of the United States have ruled in favor of employees who alleged that they were improperly dismissed. Yet many economists contend that any judicial or legislative departure from the employment-at-will doctrine is regressive and inefficient because it restricts employment flexibility and freedom of contract.

This paper advances a theory in which employer groups eventually support unjust-dismissal legislation in response to the threat of large and variable damage awards imposed by the judicial system. Legislation can define property rights clearly and limit employer liability. In contrast to the common law, the unjust-dismissal laws that have been proposed are likely to result in smaller awards, to reduce uncertainty, to resolve disputes rapidly, and to reduce legal and other transactions costs. The proposal of unjust-dismissal legislation thus is a response to court rulings that weaken and obfuscate the employers' right to dismiss employees at will. This is not consistent with the conventional political economy view of unjust-dismissal legislation.

Endogenous Election Timings and Political Business Cycles in Japan

Takatoshi Ito
Working Paper No. 3128
September 1989

This paper presents a theoretical model of political business cycles in a parliamentary system and tests the predictions and hypotheses of that model against postwar Japanese data. In a parliamentary system, unlike a presidential system, the timing of a general election is endogenous. Thus, one of the interesting questions in a parliamentary system is whether elections cause business cycles or, conversely, whether economic expansions trigger elections.

The postwar Japanese experience strongly indicates that the government did not manipulate policies in anticipation of approaching elections. Instead, general elections usually were held during times of autonomous economic expansion. In other words, the Japanese government opportunistically manipulated the timing of elections rather than the economy.

International Differences in Capital Taxation and Corporate Borrowing Behavior: Evidence from the U.S. Withholding Tax

Leslie E. Papke
Working Paper No. 3129
September 1989
JEL Nos. 320, 442, 521

Securities transactions in the United States on a net basis climbed from $19 billion in 1983 to $50 billion in

1985. This rise was caused almost entirely by an increase in foreign purchases of U.S. securities—largely corporate and government bonds. One suggested reason for this phenomenon is foreign investors' perception that the United States is a safe haven: there are strong investment fundamentals in the United States relative to other industrialized countries. Moreover, since the summer of 1984, these instruments have been free from withholding tax on interest paid to foreign holders of notes and bonds issued by U.S. entities.

Recently, there has been discussion of reimposing the withholding tax. A common counter argument is that such a tax is notoriously ineffective at raising revenue. As evidence, opponents point to the U.S. experience with the now-repealed withholding tax on the interest earned by foreigners. This paper explains the reasons that the tax was ineffectual. It is essentially a case study of the earlier U.S. experience with a withholding tax. In particular, the paper focuses on corporate borrowing behavior during the tenure of the tax and the change that took place after repeal.

Unit Roots in Real GNP: Do We Know, and Do We Care?

Lawrence J. Christiano and **Martin S. Eichenbaum**
Working Paper No. 3130
October 1989

No, and maybe not.

Cost and Price Movements in Business Cycle Theories and Experience: Hypotheses of Sticky Wages and Prices

Victor Zarnowitz
Working Paper No. 3131
October 1989
JEL Nos. 131, 134

In the post-World War II period, wage and price levels reacted much less to business contractions than they had earlier. Inflation prevailed and was increasingly persistent. The contractions themselves became relatively short and mild. All of these developments have common roots in the major structural, institutional, and policy changes of the era.

This paper looks at assumptions about wage and price behavior in certain contemporary macroeconomic theories and the implications of those assumptions for the analysis of the business cycle. I relate the various hypotheses of real and nominal "rigidities" to each other and to alternative theories of how markets clear.

Long-term stable wage and price arrangements or contracts have important equilibrium aspects that are consistent with high degrees of competition. To put it differently, there are good reasons for market clearing by nonprice mechanisms. Further, imperfections of competition, information, and markets make some stickiness of wages and prices inevitable. Changes in relative prices and costs, productivity, and profitability play an important role in the propagation of business cycles.

Cost and Price Movements in Business Cycle Theories and Experience: Causes and Effects of Observed Changes

Victor Zarnowitz
Working Paper No. 3132
October 1989
JEL Nos. 131, 134

In this paper, a sequel to NBER Working Paper No. 3131, I reexamine the historical record of prices and wages. What changes in the behavior of prices and wages show up in the data, and how can they be explained? Next, I identify and assess the models that imply that price flexibility may be destabilizing. This requires an analysis of the role of changes in interest rates and price expectations.

In general, money wages and prices were predominantly procyclical before World War II, at least during the major fluctuations, but did not decline in the more recent business contractions. Real wages never conformed closely to business cycles, but most of their weak reactions were procyclical.

Depending on the underlying condition and sources of the shifts in the economy, the departures from flexibility may or may not be destabilizing. However, the main contrast is between the stabilizing potential of flexible relative prices and the destabilizing potential of major general price movements.

Major deflations of the past had strong and adverse expectational and distributional effects. So did the recent inflation as it accelerated and grew increasingly volatile. But moderate fluctuations in the price level or the rate of inflation are not necessarily detrimental to the growth in real economic activity.

Forecasting Aggregate Period-Specific Birth Rates: The Time-Series Properties of a Microdynamic Neoclassical Model of Fertility

James J. Heckman and **James R. Walker**
Working Paper No. 3133
October 1989

This paper demonstrates the value of microdata for understanding the effect of wages on life-cycle fertility

dynamics. Conventional estimates of neoclassical economic fertility models obtained from linear aggregate time-series regressions are criticized widely for not being robust when adjusted for serial correlation. Moreover, the forecasting power of these aggregative models is inferior to conventional time-series models that assign no role to wages. We demonstrate that when neoclassical models of fertility are estimated on microdata using methods that incorporate key demographic restrictions, and when they are aggregated properly, they have considerable forecasting power.

Staggered Price Setting with Endogenous Frequency of Adjustment

David H. Romer
Working Paper No. 3134
October 1989
JEL No. 023

Taylor and Blanchard's classic models of staggered adjustment assume that the frequency of price or wage adjustment is exogenous. This paper develops a model in which the frequency of price of price changes is endogenous. It then uses the model to analyze the effects of changes in the parameters of the economy on the frequency of adjustment and the real effects of monetay shocks.

Public Confidence and Debt Management: A Model and a Case Study of Italy

Alberto Alesina, Alessandro Prati, and **Guido Tabellini**
Working Paper No. 3135
October 1989
JEL No. 310

High-debt countries may face the risk of self-fulfilling debt crises. If the public expects that the government will be unable to roll over the maturing debt in the future, they may refuse to buy debt today and may choose to hold foreign assets. This lack of confidence then may be self-fulfilling. This paper argues that under certain conditions, the occurrence of a confidence crisis is more likely if the average maturity of the debt is short. On the contrary, a long and evenly distributed maturity structure may reduce such a risk. We consider the recent Italian experience from this perspective. In particular we ask whether recent developments in the market for government debt show signs of unstable public confidence and of a risk premium.

Market Forces and the Public Good: Competition among Hospitals and Provision of Indigent Care

Richard G. Frank, Jean Mitchell, and **David S. Salkever**
Working Paper No. 3136
October 1989
JEL No. 913

We focus on the impact of competitive forces on the provision of social or merit goods by nonprofit hospitals. Specifically, we examine the behavior of altruistic nonprofit hospitals in supplying charity care. We also analyze the effects of competitive pressures and past provision of charity care on the supply of philanthropic donations to nonprofit hospitals. Using data on nonprofit hospitals in Florida for 1980-4, we specify and estimate empirical models of the supply of donations and charity care. Our estimates imply strong effects of income on the supply of charity care. This raises the possibility that competitive pressures and limits on hospital payments, under public insurance programs, may reduce the supply of indigent care. Our results also suggest that philanthropic donations will alleviate the competitive pressures to a small degree.

Tax Credits for Debt Reductions

Michael P. Dooley and **Elhanan Helpman**
Working Paper No. 3137
October 1989
JEL Nos. 430, 440

Incentives for domestic investment in debtor countries depend on the terms of their external obligations and on the tax system used to provide government revenue for debt payments. Existing debt contracts could be altered to improve the incentives for investment, but this has been difficult to accomplish, perhaps because individual creditors have incentives not to agree to such changes. This paper shows that a simple tax credit scheme that can be implemented unilaterally by the debtor government can overcome at least some of the inefficiencies caused by existing debt contracts.

On the Sequencing of Structural Reforms

Sebastian Edwards
Working Paper No. 3138
October 1989
JEL Nos. 400, 410

Both OECD and developing economies have embarked on structural reforms aimed at dismantling

regulations and reducing distortions. Despite their differences, both groups also have to deal with the problems of the appropriate sequencing and speed of reforms. This paper critically reviews the literature on sequencing and speed of structural reforms among LDCs, drawing out features that are relevant for OECD economies. It then develops a formal framework, based on a welfare criterion, for evaluating efficiency effects of structural policies, particularly observing the way in which distortions interact, both intra- and intertemporally. I then use the framework to discuss some important issues, including: the sequencing of micro and macro reforms ("competition of instruments"); broad-front versus sequential reforms; and the role of policy credibility.

Promoting Investment under International Capital Mobility: An Intertemporal General Equilibrium Analysis

A. Lans Bovenberg and **Lawrence H. Goulder**
Working Paper No. 3139
October 1989
JEL Nos. 320, 430

This paper uses a dynamic computable general equilibrium model to compare the effects of two U.S. policies intended to promote domestic capital formation in an economy open to international capital flows: 1) the introduction of an investment tax credit (ITC); and 2) a reduction in the statutory corporate income tax rate. These policies differ in their treatment of old (existing) and new capital. The model features: adjustment dynamics; intertemporal optimization by U.S. and foreign households and firms endowed with model-consistent expectations; imperfect substitution between domestic and foreign assets in portfolios; an integrated treatment of the current and capital accounts of the balance of payments; and industry disaggregation in the United States.

We find that the two policies (scaled to imply the same revenue cost) differ in their consequences for foreign and domestic welfare, the balance of payments, international competitiveness, and U.S. industrial structure. The ITC produces larger gains in domestic welfare, because it is more effective at reducing intertemporal distortions. The two policies have similar implications for intersectorial efficiency. From the point of view of domestic welfare, the relative attractiveness of the ITC is enhanced when international capital mobility is taken into account, since international transfers of wealth are associated with foreign ownership of part of the U.S. capital stock. Whereas reducing the corporate tax rate initially improves the trade balance, introducing the ITC causes the trade balance to deteriorate in the short run. Because the real exchange rate is lower, export-oriented sectors perform better relative to nontradable industries under a lower corporate tax rate than in the presence of the ITC, especially in the short run.

What Do Rich Countries Trade with Each Other? R and D and the Composition of U.S. and Swedish Trade

Magnus Blomström, Robert E. Lipsey, and **Lennart Ohlsson**
Working Paper No. 3140
October 1989
JEL No. 421

A long tradition in international economics explains comparative advantage by differences between countries in their stage of development, or their endowments of land, labor, and capital, and suggests that universal development will reduce the importance of trade. Sweden and the United States possess similar factor endowments and have converged in overall productivity, but their bilateral trade has grown. The example of these two countries suggests that mutual technological progress may promote trade, with the new basis for specialization being the different technology levels, or R and D intensities of the goods being traded, rather than the initial endowments.

Multinational Corporations and Productivity Convergence in Mexico

Magnus Blomström and **Edward N. Wolff**
Working Paper No. 3141
October 1989

This paper examines the impact of the operations of foreign-owned multinational firms on the productivity growth of Mexican manufacturing industries from 1965–84. It investigates the extent to which the penetration of a sector by foreign-owned firms affects the productivity of local firms in that sector, and whether there is any evidence of convergence between that industry's productivity level and that of the United States.

The main results are: 1) productivity levels of locally owned firms in Mexico have converged with those of foreign-owned firms; 2) both the rate of productivity growth of local firms and their rate of catch-up to the multinationals are related positively to the degree of foreign ownership of an industry; 3) the productivity gap between Mexican and U.S. manufacturing has diminished between the mid-1960s and the mid-1980s; and 4) the rate of productivity growth of Mexican industries and Mexico's rate of convergence to the United States are higher in industries with a greater presence of multinationals. We conclude that multinational firms have contributed to a geographical diffusion of technology and have acted as a bridge between advanced and less-advanced countries.

Corporate Taxation and the Efficiency Gains of the 1986 Tax Reform Act

Jane G. Gravelle and **Laurence J. Kotlikoff**
Working Paper No. 3142
October 1989
JEL No. 321

The 1986 Tax Reform Act, while having little effect on the overall effective tax rate on U.S. capital income, did reduce the difference in effective taxation of corporate and noncorporate capital significantly within a number of U.S. industries. The Mutual Production Model, developed in Gravelle and Kotlikoff (1989), can be used to study the efficiency gains from the reduction in corporate tax wedges within industries. Unlike the Harberger Model, the Mutual Production Model permits both corporate and noncorporate firms to produce the same goods and, therefore, to coexist within a given industry.

This paper develops an 11-industry, 55-year dynamic life-cycle version of the Mutual Production Model. We use this model to study the steady-state efficiency gains associated with the new law. While we do not simulate the economy's transition path, our steady-state welfare changes arise from compensating transitional generations for the first-order redistribution of income associated with the tax reform.

We find that the 1986 Tax Reform Act reduces excess burden by 0.85 percent of our model's present value of consumption. This efficiency gain reflects the Tax Reform Act's reduction in corporate/noncorporate tax wedges, particularly in those industries with significant noncorporate production. Measured as a flow, the 1988 estimated efficiency gain from the Tax Reform Act is $31 billion.

Temporal Agglomeration

Robert E. Hall
Working Paper No. 3143
October 1989
JEL No. 131

When economic activity is concentrated over space or time, it is more efficient. Most production occurs in geographic "hot spots" on weekdays between 9 a.m. and 12 noon and between 1 and 5 p.m. The thick-market efficiencies that encourage the concentration of activity at certain times may be internal or external to the firm. When they are internal, the firm can make efficient arrangements to take advantage of the effects. It should marshal all of its forces from time to time in bursts of activity. When thick-market effects are external to the firm, the possibility of indeterminacy can arise. Aggregate fluctuations may occur with either internal or external thick-market effects.

Spontaneous Volatility of Output and Investment

Robert E. Hall
Working Paper No. 3144
October 1989
JEL No. 131

Spontaneous shifts in output originating within the business sector are an important factor in aggregate fluctuations. This paper develops a simple two-component decomposition of the movement of real GNP. One component is the path that GNP would have followed in order to deliver the volume of goods and services actually taken by consumers, government, and the rest of the world. The second component, noise, is the residual between actual GNP and the theoretical calculation. The two components are roughly the same size, but noise has more of its power at higher frequencies.

A Framework for Studying Monetary Nonneutrality

Robert E. Hall
Working Paper No. 3145
October 1989
JEL No. 131

This paper sets forth a simple general structural model of aggregate output, the interest rate, and the price level. The core of the model is the determination of the level of output as a product-market equilibrium, either competitive or oligopolistic, possibly indeterminate because of thick-market externalities. Monetary nonneutrality can affect either product demand or product supply. In either case, monetary policy has leverage over output as well as over the price level. The paper develops a two-diagram analysis intended to replace the aggregate demand-aggregate supply diagram.

Real Wages, Monetary Accommodation, and Inflation

Elhanan Helpman and **Leonardo Leiderman**
Working Paper No. 3146
October 1989
JEL Nos. 310, 130

We analyze the dynamics of inflation in an economy characterized by a forward-looking, staggered price and wage determination process, and by monetary accommodation. In our model, inflation reconciles the conflicting claims of workers and firms. The model is capable of generating a positive association between real wages and inflation, of the type that has been observed in some high-inflation countries. It generates a price-wage spiral but does not result in inflationary inertia.

Measurable Dynamic Gains from Trade

Richard E. Baldwin
Working Paper No. 3147
October 1989

Productive factors, such as human and physical capial, are accumulated. Trade can affect the steady-state levels of such factors. Consequently, as the economy moves to its new steady state, trade liberalization will have dynamic effects on output and welfare, in addition to its usual static effects. The output impact of this dynamic effect is measurable and appears to be quite large. The welfare impact of this dynamic effect is also measurable. The size of this dynamic gain from trade depends on the importance of external scale economies.

The Effects of Human Resource Management Decisions on Shareholder Values

John M. Abowd, John M. Hannon,
and **George T. Milkovich**
Working Paper No. 3148
October 1989
JEL Nos. 512, 800

We examine the effects of selected human resource (HR) decisions by management on the abnormal change in total shareholder return. We classify announcements of human resources decisions into five types: general; compensation and benefits; staffing; shutdowns and relocations; and miscellaneous. Using an event-study methodology, we investigate whether any of these HR decisions has a discernible effect on the level of, or variation in, abnormal total shareholder return.

We find no consistent pattern of increased or decreased valuation in response to the different types of HR announcements, even after controlling for the likely effect of such announcements on total compensation costs. We do find substantially increased variation in abnormal total shareholder return around the announcement date, which indicates that HR decisions do provide information to the stock market. Increased variation in total shareholder value is permanent staff reductions and shutdown/relocations. The absence of consistent effects on valuation, combined with the evidence of increased variation in shareholder value, may be attributed to uncontrolled firm-specific factors, the categorization of the HR events or, simply, to the unique interpretations the market places upon these events.

Does Performance-Based Managerial Compensation Affect Subsequent Corporate Performance?

John M. Abowd
Working Paper No. 3149
October 1989
JEL Nos. 512, 800

An effective compensation based on performance must increase the probability of high corporate performance in order to justify its incremental expense relative to a straight salary system. If current performance and current compensation are positively related, then the pay system is performance-based in practice, if not explicitly. This study considers whether increasing the sensitivity of current compensation to current performance is associated with higher performance in the future.

For accounting-based measures of performance, there is only weak evidence that higher performance-based compensation is associated with improved future performance. However, for economic and market measures of performance, the evidence is stronger. Payment of an incremental 10 percent bonus for good economic performance is associated with a 30- to 90-basis-point increase in the expected aftertax gross economic return in the next fiscal year. Payment of an incremental raise of 10 percent following a good stock market performance is associated with a 400- to 1200-basis-point increase in expected total shareholder return. These results are comparable in magnitude when compared to the intrinsic variability of the performance measure considered.

Demographics, Fiscal Policy, and U.S. Saving in the 1980s and Beyond

Alan J. Auerbach and **Laurence J. Kotlikoff**
Working Paper No. 3150
October 1989
JEL No. 840

In this paper we use data from the Consumer Expenditure Surveys of the 1980s to consider the effect of demographic change on past and future U.S. saving rates. We find that demographic change may alter the U.S. rate of national saving and current account position significantly over the next 50 years. The gradual aging of the population is predicted to lead to higher saving rates over the next three decades, with declines in the rate of saving thereafter. Associated with these predicted changes in saving rates is a predicted improvement in the U.S. current account position in the 1990s, with a very gradual deterioration during the subsequent decades. While demographics is potentially very important in explaining saving, it does not appear to explain a drop in the saving rate in the 1980s.

NBER
Reporter

Nonprofit Org.
U.S. Postage
Paid
Boston, MA
Permit No. 55932

National Bureau of Economic Research, Inc.
1050 Massachusetts Avenue
Cambridge, Massachusetts 02138
(617) 868-3900

Address Correction Requested