

Household survey data consistently depict large variations in saving and wealth, even among households with similar socioeconomic characteristics. Within the context of the life cycle hypothesis, families with identical lifetime resources might choose to accumulate different levels of wealth for a variety of reasons, including variation in time preference rates, risk tolerance, exposure to uncertainty, relative tastes for work and leisure at advanced ages, income replacement rates, and so forth. These factors can be divided into a small number of classes, each with a distinctive implication concerning the relation between accumulated wealth and the shape of the consumption profile. By examining this relation empirically, one can test for the presence or absence of these particular explanations for differences in wealth. Using the Panel Study of Income Dynamics and the Consumer Expenditure Survey, **Bernheim, Skinner, and Weinberg** find very little support for life cycle models that rely on the above factors to explain wealth variation. The data are, however, consistent with "rule of thumb" or "mental accounting" theories of wealth accumulation.

"Wealth illusion" refers to the tendency of some people to overvalue a stock of wealth relative to the income flow it can finance. **Diamond and Kahneman** report on a pilot study that asked people about the wealth and annuitized real income needed for an adequate retirement income for a couple described to them. Among the preliminary results of the pilot study are: 1) The coefficient of variation tended to be larger for the wealth question than the income question, reflecting the greater difficulty in thinking about the wealth needed for retirement than the income needed for retirement. 2) A sizable fraction of

the population implicitly priced annuities in a way that was considerably off a reasonable market price, although many people were in a reasonable range. The sequence of questions asked affected the answers. 3) Women tended to have lower wealth answers for a given income question than men. 4) People in the highest income bracket tended to have higher wealth answers relative to lower income people.

Di Tella, MacCulloch, and Oswald use data on the reported well-being levels of approximately one quarter of a million randomly sampled Europeans and Americans from the 1970s to the 1990s. After controlling for personal characteristics, year dummies, and country fixed effects, they find that the data trace out a function that is approximately a linearly additive "misery index." They also calculate the implied dollar value of a low inflation rate, and examine the structure of happiness equations across countries and time.

Shiller discusses the Unidad de Fomento (UF), an indexed unit of account, which has been used in Chile since 1967, and which has been copied in Colombia, Ecuador, Mexico, and Uruguay. The UF is a sort of money that has guaranteed real purchasing power, although it is not a currency and is not used as a medium of exchange. Shiller argues that important practical problems in implementing indexation are solved by creating such units of account. The use of the units in wagesetting need not be inflationary, if the units are defined properly.

Studies of animal and human behavior suggest that discount functions are approximately hyperbolic. **Laibson** integrates the literature on hyperbolic preferences with the literature on buffer stock consumption

behavior, and uses this relationship to show that measured levels of patience in this economy exhibit a substantial degree of variation, both across individuals, and within a single individual's lifespan. He predicts that measured levels of patience will increase with wealth and age. The variation arises because the effective horizons of consumers also vary over the life-cycle of a buffer stock consumer. For hyperbolic consumers, long-horizons are associated with choices that appear patient, while short horizons are associated with choices that appear impatient. By contrast, consumers with exponential discount functions make equilibrium choices which are uniformly patient and exhibit no interpersonal or intrapersonal variation.

"Money illusion" means that people behave differently when the same objective situation is represented in nominal versus real terms. To examine the behavioral impact of money illusion, **Fehr and Tyran** study the adjustment process of nominal prices after a fully anticipated negative nominal shock in an experimental setting with strategic complementarity. They show that seemingly innocuous differences in payoff presentation cause large differences in behavior. In particular, if the payoff information is presented to subjects in nominal terms, then price stickiness and real effects are much more pronounced than when payoff information is presented in real terms. The driving force behind differences in real outcomes is that subjects expect much more nominal inertia in the nominal payoff condition. Because of strategic complementarity, these expectations induce subjects to adjust rather slowly to the shock.

Corporate Finance Meeting

The NBER's Program on Corporate Finance, directed by Robert Vishny of the University of Chicago, met in Cambridge on November 21 to discuss the following papers:

Rafael LaPorta, Harvard University; **Florencio Lopez de Silanes** and **Andrei Shleifer**, NBER and Harvard University; and **Robert W. Vishny**, "Agency Problems and Dividend Policies Around the World"

Discussant: Kose John, New York University

Josef Lakonishok, NBER and University of Illinois, and

Inmoo Lee, Case Western Reserve University, "Are Insiders' Trades Informative?"

Discussant: Joshua Lerner, NBER and Harvard University

Zsuzsanna Fluck, New York University; **Douglas Holtz-Eakin**, NBER and Syracuse University; and **Harvey S. Rosen**, NBER and Princeton University, "Where Does the Money Come From? The Financing of Small Entrepreneurial Enterprises"

Discussant: Mitchell Petersen, Northwestern University

Armando Gomes, University of Pennsylvania, "Going Public with Asymmetric Information: Agency Costs and Dynamic Trading"

Discussant: Jeremy C. Stein, NBER and MIT

Charles Himmelberg and **Darius Palia**, Columbia University; and **R. Glenn Hubbard**, NBER and Columbia University, "Understanding the Determinants of Managerial Ownership and the Link Between Ownership and Performance"

Discussant: Karen Wruck, Harvard University

LaPorta and his coauthors analyze why firms pay dividends, the so-called "dividend puzzle," from the agency perspective. They outline two agency models of dividends: 1) "the outcomes" model, in which dividends are the result of effective pressure by minority shareholders to force corporate insiders to disgorge cash—in this model, stronger minority shareholder rights should be associated with higher dividends; and 2) "the substitutes" model, in which insiders choose to pay dividends to establish a reputation for decent treatment of minority shareholders, so that firms can raise equity finance in the future. Under this model, stronger minority shareholder rights reduce the need for establishing a reputation, and should be associated with lower dividends. The authors compare these models on a cross-section of 4,000 companies from around the world, in countries with different levels of investor protection, and therefore different strength of minority shareholder rights. Their findings on payout levels, as well as other results, support the outcomes model of dividends.

Lakonishok and **Lee** document

insider trading activities of all companies listed on the NYSE, Amex, and Nasdaq exchanges during 1975–95. Insiders on average purchase shares worth 0.6 percent, and sell shares worth 1.3 percent, of their companies market capitalization each year. Large shareholders trading is much less frequent than, but its dollar volume is comparable to, managers' trading. In general, there is very little market movement in the period immediately around insiders trading; insiders in the aggregate are contrarian investors. However, they predict market movements better than a pure contrarian strategy. Insiders' purchases are better predictors of future long-term stock returns than insiders' sales. In addition, insiders' activities in smaller firms are more informative than their activities in larger firms.

Using data from the Wisconsin Entrepreneurial Climate Study, **Fluck**, **Holtz-Eakin**, and **Rosen** study the sources of finance during the very early stages of firms' lives. They focus on the evolution of the mix of financial capital from "insiders" and "outsiders" as firms age. They find that at the beginning of firms' life cycles, the

proportion of funds from internal sources increases with age, while the proportion from banks, venture capitalists, and private investors declines. There is also evidence that these patterns eventually reverse themselves, with the proportion of insider finance ultimately declining and the proportion of outsider finance increasing with age. These findings are consistent with elements of both reputation-based and monopoly-lender theories of firm finance.

Gomes studies the problem of going public in the presence of moral hazard, adverse selection, and multiple trading periods. In the multi-period game, managers strategically choose the level of extraction of private benefits and can develop a good reputation for expropriating low levels of private benefits. The costs of going public can be reduced significantly because of this reputation effect, and this can be an important factor in sustaining emerging stock markets that offer weak protection to minority shareholders. Also, allowing controlling managers to issue non-voting shares can increase the stock market efficiency, because the reputation effect is stronger when man-

agers can divest more without losing control.

Firms are governed by a network of relationships representing, for example, contractual arrangements for financing, capital structure, and managerial ownership and compensation. Accordingly, it is difficult to focus on a single such arrangement and to identify the correspondence between the contractual choice and firm performance (as measured by account-

ing rates of return, or Tobin's Q, for example). Contractual choices and performance outcomes are determined endogenously by exogenous (and, in some case, unobserved) changes in the firm's contracting environment. **Himmelberg, Hubbard, and Palia** confront this problem in the context of the firm's compensation contract for managers. Because managerial equity stakes are an important and well-known mech-

anism used to align the incentives of management with ownership, the authors examine the determinants of managerial ownership as a function of the contracting environment. They find that managerial ownership is explained by key variables in the contracting environment and that, once they control for observed firm characteristics and firm fixed effects, there is no effect of changes in firm managerial ownership on performance.

Productivity Program Meeting

NBER Research Associates John C. Haltiwanger, University of Maryland, Ariel Pakes, Yale University, and Mark J. Roberts, Pennsylvania State University, organized the most recent meeting of the NBER's Program on Productivity. The agenda for the December 12 gathering was:

Michael Greenstone, Princeton University, "The Marginal Effects of Environmental Regulations on the Manufacturing Sector: Evidence from the 1970 and 1977 Clean Air Amendments"

Discussant: Christopher Timmins, Yale University

Randy Becker, Brown University, and **J. Vernon Henderson**, NBER and Brown University, "Effects of

Air Quality Regulations on Polluting Industries" (NBER Working Paper No. 6160)

Discussant: Robert Schwab, University of Maryland

Sofronis Clerides, Yale University; **Saul Lach**, NBER and Hebrew University; and **James Tybout**, Georgetown University, "Is Learning-by-Exporting Important? Microdynamic Evidence from Colombia, Mexico, and Morocco"

Discussants: Andrew Bernard, NBER and Yale University; and Jensen, Carnegie-Mellon University

Lanier Benkard, Yale University, "Learning and Forgetting: the Dynamics of Aircraft Production"

Discussant: Dennis Epple, Carnegie-Mellon University

Brent Boning, Carnegie-Mellon University; **Casey Ichniowski**, NBER and Columbia University; and **Kathryn Shaw**, NBER and Carnegie-Mellon University, "Incentive Pay for Production Workers: An Empirical Analysis"

Discussant: George Baker, Harvard University

Sandra E. Black, Federal Reserve Bank of New York, and **Lisa M. Lynch**, NBER and Tufts University, "The Impact of Workplace Practices and Information Technology on Productivity"

Discussant: Steven Olley, NBER and Georgetown University

Greenstone presents new evidence on the impact of federal environmental laws on the manufacturing sector by using pollution categories established by the EPA after the passage of the Clean Air Act Amendments of 1970. Specifically, the EPA designated high or low regulation status for four pollutants to each county, depending upon whether the national air quality standards were met there. Controlling for a wide set of factors, including transitory shocks to polluting industries and plant characteristics, Greenstone finds that

a county's pollutant-specific high-regulation designation significantly affected the growth of employment, the rate of net investment, and the growth of shipments of polluting plants relative to non-polluting ones. Moreover, the effects differed across the four regulations and across plants decisions to enter, exit, expand or contract.

Using plant data for 1963 to 1992, **Becker and Henderson** examine the unintended effects of air quality regulation on decisions of major polluters. A key regulatory tool since

1978 is the annual designation of county air quality attainment status, where non-attainment status triggers specific equipment requirements for new and existing plants. In the later years of regulation, nonattainment status reduces expected "births" in polluting industries by 40-50 percent, resulting in a shift of polluting activity to cleaner, less populated attainment areas. Starting in the 1970s, effects appear first for industries with bigger plant sizes and then, within industries, first for corporate plants relative to the much smaller

non-affiliate, or single-plant firm sector. In all industries, non-affiliates face less regulation than the bigger corporate plants, resulting in a permanent shift away from corporate plant production in some industries. Older plants benefit from grandfathering provisions, greatly enhancing survival probabilities. Finally, the negotiation and permitting process under regulation appears to induce much greater up-front investments by new plants, so that, in non-attainment areas, regulation induces 50–100 percent increases in initial plant sizes compared to attainment areas. But for plants over 10 years of age there are no size differences.

Do firms become more efficient after becoming exporters? Do exporters generate positive externalities for domestically-oriented producers? **Clerides, Lach, and Tybout** tackle these questions by analyzing the causal links between exporting and productivity using plant-level data. They look for evidence that cost processes of firms change after they break into foreign markets. They find that relatively efficient firms become exporters; however, in most industries, firms' costs are not affected by previous exporting activities. So the well-documented positive association between exporting and efficiency is explained by the self-selection of the more efficient firms into the export market. They also find some evi-

dence of positive regional externalities.

Benkard introduces a new cost dataset for a commercial aircraft firm and uses it to analyze the dynamics of learning in commercial aircraft production. The dataset is not consistent with the simple learning hypothesis, and particularly the prediction that a firm's unit cost must decline with its cumulative production. Instead, there is strong support for the hypothesis of *organizational forgetting*, a slightly more general learning model in which unit costs are similarly dependent on a firm's past production experience, but where that experience depreciates over time.

The use of group-based incentive pay and problem-solving teams is increasingly common in manufacturing, yet there is little analysis that assesses the value of these practices. **Boning, Ichniowski, and Shaw** begin their assessment by developing a simple model in which employees decide on effort levels in two possible tasks: producing output and working on problem-solving teams. They show that the gains to these innovative incentive practices are likely to vary across different manufacturing environments. Using data from steel minimill production lines, they find that incentive plans and problem-solving efforts raise performance on the production line. However, problem-solving is most

effective in mills that have more complex production processes.

Using data from a unique nationally representative sample of businesses, the Educational Quality of the Workforce National Employers Survey, matched with the Bureau of the Census Longitudinal Research Database, **Black and Lynch** examine the impact of workplace practices, information technology, and human capital investments on productivity. They use both cross section and panel data covering 1987–93, and find that what is associated with higher productivity is not so much whether or not an employer adopts a particular work practice, but rather how that work practice is actually implemented within the establishment. In addition, their results suggest that those unionized establishments that have adopted what have been called new or "transformed" industrial relations practices that promote joint decisionmaking, coupled with incentive-based compensation, have higher productivity than other similar non-union plants, while those businesses that are unionized but maintain more traditional labor management relations have lower productivity. They also find that the higher the average educational level of production workers or the greater the proportion of non-managerial workers who use computers, the higher is plant productivity.



Current Working Papers

THIS IS THE LAST ISSUE OF THE *NBER REPORTER* TO INCLUDE WORKING PAPER ABSTRACTS; FUTURE ISSUES WILL ONLY LIST WORKING PAPER NUMBERS, TITLES, AND AUTHORS. PLEASE VISIT OUR WEB SITE (www.nber.org) TO READ THE WORKING PAPER ABSTRACTS.

NBER Working Papers

Trade and Environment: Bargaining Outcomes from Linked Negotiations

Lisandro Abrego,
Carlo Perroni, John Whalley, and
Randall M. Wigle

NBER Working Paper No. 6216

October 1997

International Trade and Investment

Recent literature has explored both physical and policy linkage between trade and the environment. We explore linkage through leverage in bargaining, whereby developed countries can use trade policy threats to achieve improved environmental management in a developing country, while developing countries can use environmental concessions to achieve trade discipline in developed countries. We use a global numerical simulation model to compute bargaining outcomes from linked trade and environment negotiations, comparing developed-developing country bargaining only on trade policy with joint bargaining on both trade and domestic environmental policies. Our results indicate joint gains from expanding the trade bargaining set to include the environment, as opposed to the current developing country reluctance to negotiate in the World Trade Organization on this issue. However, compared to bargaining with cash side payments, linking

trade and the environment through negotiation on policy instruments provides significantly inferior developing country outcomes. Thus, a trade and environment policy-linked negotiation may be better than an environment-only negotiation, but negotiating compensation to developing countries for environmental restraint would be better still. We provide sensitivity and other analysis of our results and indicate what factors could qualify our main finding, including the erosion of the most favored nation principle involved with environmentally based trade actions.

A House of Her Own: Old Age Assistance and the Living Arrangements of Older Nonmarried Women

Dora L. Costa

NBER Working Paper No. 6217

October 1997

JEL Nos. J14, N12

Aging, Development of the
American Economy

I show that the trend towards single households among older nonmarried women, the majority of whom were widows, has been ongoing only since 1940. I investigate the factors that fostered the rise in separate living quarters since the middle of this century by examining the impact of Old Age Assistance on living arrangements in 1940 and 1950. I find that Old Age Assistance substantially

increased the demand for separate living quarters, but that demand depended upon the rules of the program, in particular whether children were held legally responsible for the care of their aged parents. I argue that almost half of the decline in the fraction of older nonmarried women living with relatives from 1950 to 1990 can be attributed to rising Social Security benefits and expanded eligibility and to the fact that Social Security benefits were given with no strings attached.

Gradual Incorporation of Information into Stock Prices: Empirical Strategies

Sara Fisher Ellison and
Wallace P. Mullin

NBER Working Paper No. 6218

October 1997

JEL Nos. G1, G14, C1, L00

Asset Pricing

This paper explores environments in which either the revelation or diffusion of information, or its incorporation into stock prices, is gradual. We also develop appropriate estimation techniques. Our paper has implications both for event study methodology and for understanding the process by which stock prices incorporate information. We highlight two environments.

First, information often is not revealed in one announcement but rather through a process of gradual public revelation, which may not

NBER Working Papers On-Line

A complete list of all NBER Working Papers with searchable abstracts, and the full texts of Working Papers (issued since September 1994) are available at <http://www.nber.org/wwp.html> to anyone located at a university or other organization that subscribes to the (hard copy) Working Paper series.

If you believe that your organization subscribes, but you cannot access the on-line Working Paper service, please e-mail the NBER at wwp@nber.org for more information and assistance.



Individual copies of NBER Working Papers, Historical Factors in Long-Run Growth Papers, and Technical Papers are available free of charge to Corporate Associates. **For all others, there is a charge of \$5.00 per paper requested. (Outside of the United States, add \$10.00 per order for postage and handling.) Advance payment is required on all orders. MasterCard and Visa are accepted. Please do not send cash.** To order, call the Publications Department at (617) 868-3900. Please have ready the number(s) of any Working Paper(s) you wish to order.

Subscriptions to the full NBER Working Paper series include all 400 or more papers published each year. Subscriptions are free to Corporate Associates. For others within the United States, the standard rate for a full subscription is \$1480; for academic libraries and faculty members, \$750. Higher rates apply for foreign orders. **Partial Working Paper subscriptions**, delineated by program, are also available.

For further information, see our Web site, or please write: National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138-5398.



Journal of Economic Literature (JEL) subject codes, when available, are listed after the date of the paper, followed by the program(s) of research represented by each paper. Papers not associated with an NBER program are listed as Miscellaneous. All Historical Factors in Long-Run Growth Papers are in the Development of the American Economy program.

Abstracts of all papers issued since October 1997 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.

be completely observable by a researcher. We examine the effect of the evolution of the Clinton health care reform proposal on pharmaceutical stock prices. We estimate by isotonic regression the expected path of market-adjusted pharmaceutical prices over September 1992–October 1993, and find that the major portion of the decline in stock prices occurred gradually, and did not correspond to identified news events.

Second, the trading process itself may incorporate private information into stock prices gradually. That is an implication of the Kyle [1985] model, in which one or a small number of informed traders use their market power over their private information

to maximize profits dynamically. We use the functional form predictions from Kyle in our estimation, and the results from a sample of targets of tender offers are consistent with the model.

Discount Rate Heterogeneity and Social Security Reform Andrew A. Samwick

NBER Working Paper No. 6219
October 1997
JEL Nos. H55, E21
Aging and Public Economics

As many countries consider the privatization of existing pay-as-you-go social security systems, the option

to make participation in the new system voluntary may appeal to policymakers who need to have the political support of workers. One critical issue in evaluating such a reform and its economic consequences, though, is the extent of unknown differences in households' preferences for consumption. I estimate the distribution of rates of time preference from the wealth data in the 1992 Survey of Consumer Finances using a flexible life-cycle model of consumption under income uncertainty. I then apply this estimated distribution to a variety of reform proposals that incorporate a voluntary choice of how much to contribute to a dedicated retirement account and a rebate of the existing payroll tax that increases with the magnitude of the contribution. My main finding is that an appropriate menu of reform plans can induce the voluntary buyout of 84 percent of existing payroll taxes at an immediate cost to national saving of less than 0.25 percentage point.

The Misallocation of Housing Under Rent Control

Edward L. Glaeser and
Erzo F. P. Luttmer

NBER Working Paper No. 6220
October 1997
JEL Nos. R20, D45, H80
Public Economics

When there are binding price controls, there are shortages, and the allocation of goods across consumers may not be efficient. In general, the costs of price controls in terms of misallocation are first order, while the classic welfare losses attributable to undersupply are second order. We present an empirical methodology for estimating the degree of misallocation of housing units caused by rent control in New York City. This methodology involves comparing the relative consumption of different demographic groups within the rent

controlled area with the relative levels of consumption in a free market area. Our best estimate of the costs of rent control in New York attributable to the misallocation of rental apartments is \$200 per apartment annually.

Jobless Growth: Appropriability, Factor Stabilization, and Unemployment

**Ricardo J. Caballero and
Mohamad L. Hammour**

NBER Working Paper No. 6221
October 1997

JEL Nos. E0, E2, J6, O3

Economic Fluctuations and Growth

A central determinant of the political economy of capital-labor relations is the appropriability of specific quasi-rents. This paper is concerned with the general-equilibrium interaction of appropriability and the characteristics of technology: namely, the embodiment of technology in capital, and substitutability between capital and labor in the technological menu. Technological embodiment means that the supply of capital is effectively much less elastic in the short than in the long run, and therefore is more exposed to appropriability. Technology choice implies that an attempt at appropriating capital will induce a substitution away from labor in the long run, and this constitutes a mechanism for thwarting appropriation. Shifts in European labor relations in the last three decades offer a good laboratory for exploring the empirical relevance of those mechanisms. The evolution of the labor share, the profit rate, the capital/output ratio, and unemployment—which we examine more particularly in the case of France—appears highly supportive.

Option Hedging Using Empirical Pricing Kernels

**Joshua V. Rosenberg and
Robert F. Engle**

NBER Working Paper No. 6222

October 1997

Asset Pricing

We develop a method for option hedging which is consistent with time-varying preferences and probabilities. The preferences are expressed in the form of an empirical pricing kernel (EPK), which measures the state price per unit probability. Probabilities are derived from an estimated stochastic volatility model of the form GARCH components with leverage. We estimate state prices using the flexible risk-neutral density method of Rosenberg [1995] and a daily cross-section of option premiums. Time-varying preferences over states are linked to a dynamic model of the underlying price of a one-day ahead forecast of derivative price distributions and minimum variance hedge ratios.

Our empirical results suggest that risk aversion over S&P500 return states is substantially higher than risk aversion implied by Black-Scholes state prices and probabilities using long-run estimates of S&P500 return moments. We also find that the daily level of risk aversion is strongly positively autocorrelated, negatively correlated with S&P500 price changes, and positively correlated with the spread between implied and objective volatilities.

Hedging results reveal that typical hedging techniques for out-of-the-money S&P500 index options, such as Black-Scholes or historical minimum variance hedging, are inferior to the EPK hedging method. Thus, time-varying preferences and probabilities appear to be an important factor in the day-to-day pricing of S&P500 options.

Trade and Security, I: Anarchy

**James E. Anderson and
Douglas Marcouiller**

NBER Working Paper No. 6223

October 1997

JEL Nos. D7, F1

International Trade and Investment

Market exchange is subject to an endogenously determined level of predation which impedes specialization and gains from trade. We construct a model in which utility-maximizing agents choose between careers in production and careers in predation. Three types of equilibrium may emerge: autarky (with no predation and no defense); insecure exchange equilibria (with predation and defense); and secure exchange equilibria (in which defense completely deters predation). Trading equilibria, two thirds of them secure, are supported only in a narrow range of security parameter values. Since changes in the technologies of defense and predation have terms-of-trade effects, some producers may be hurt by enhanced security. We show cases of "immiserizing security" in which producers in large poor countries are harmed by increased security.

Both Sides of Corporate Diversification: The Value Impacts of Geographic and Industrial Diversification

**Gordon M. Bodnar, Charles Tang,
and Joseph Weintrop**

NBER Working Paper No. 6224

October 1997

JEL Nos. F3, G3

International Finance and
Macroeconomics

We examine the effect of geographic and industrial diversification on firm value for a sample of over

20,000 (firm-year) observations of U.S. corporations from 1987–93. We find that the average value of a firm with international operations is 2.2 percent higher than that of comparable domestic single-activity firms, while the average value of a firm with activities in multiple industrial segments is 5.4 percent lower than a portfolio of comparable focused domestic firms in similar activities. More importantly, we demonstrate that failure to control simultaneously for both dimensions of diversification results in overestimation of the negative value impact of industrial diversification, but has little impact on estimates of the positive value impact of geographic diversification.

Consumption Versus Production of Insurance

Tomas Philipson and George Zanjani

NBER Working Paper No. 6225

October 1997

JEL No. I1

Health Care

Many forms of insurance are produced by groups themselves rather than purchased in the market. For example, coverage for workers' compensation provided by employers often is produced by the employer, in the sense that the employer bears some or all of the financial risk associated with the insurance. We generalize the theory of insurance to analyze what factors determine whether groups produce insurance internally by self-insuring or instead consume it by purchasing coverage in the market. The theory makes cross-sectional predictions on which firms will choose to produce insurance, as well as on how prices and loss experience will vary with the production decision. The theory also predicts which lines of insurance are likely to be associated with internal production and which lines will have coverage provided entirely by the market. Furthermore, we analyze the time-

series properties of claims under various degrees of internal production, and reveal a more pronounced lag structure for claims under partial riskbearing than under full self-insurance or market insurance. These predictions are generated by a fundamental diseconomy of scale that offsets the standard scale economy associated with risk-pooling. The tradeoff facing a group in its make-or-buy decision is that self-insurance rewards self-protection but forgoes the pooling of risk with members outside the group.

The Surprising Symmetry of Gross Job Flows

Christopher L. Foote

NBER Working Paper No. 6226

October 1997

JEL No. E32

Labor Studies and Monetary Economics

A large literature attempts to explain the asymmetric behavior of job destruction and job creation over the business cycle. This paper contends that much of this asymmetry is spurious. Analyzing gross flows in relation to the net flow virtually eliminates cyclical asymmetry in annual data and substantially reduces it in quarterly data. To the extent that gross flows are symmetric, there is a fundamental identification problem in moving between gross flows and the net flow that is reminiscent of the earlier empirical literature on sectoral shifts.

What Accounts for the Variation in Retirement Wealth Among U.S. Households?

B. Douglas Bernheim, Jonathan Skinner, and Steven Weinberg

NBER Working Paper No. 6227

October 1997

JEL Nos. E2, D1

Aging and Public Economics

Household survey data consistently depict large variations in saving

and wealth, even among households with similar socioeconomic characteristics. Within the context of the life-cycle hypothesis, families with identical lifetime resources might choose to accumulate different levels of wealth for a variety of reasons, including variation in time preference rates, risk tolerance, exposure to uncertainty, relative tastes for work and leisure at advanced ages, income replacement rates, and so forth. These factors can be divided into a small number of classes, each with a distinctive implication for the relationship between accumulated wealth and the shape of the consumption profile. By empirically examining this relation, one can test for the presence or absence of particular explanations for differences in wealth. Using the Panel Study of Income Dynamics and the Consumer Expenditure Survey, we find very little support for life-cycle models that rely on these factors to explain variation in wealth. However, the data are consistent with "rule of thumb" or "mental accounting" theories of wealth accumulation.

Evaluating Density Forecasts of Inflation: The Survey of Professional Forecasters

Francis X. Diebold, Anthony S. Tay, and Kenneth F. Wallis

NBER Working Paper No. 6228

October 1997

JEL Nos. E3, C1

Economic Fluctuations and Growth

Since 1968, the Survey of Professional Forecasters has asked respondents to provide a complete probability distribution of expected future inflation. We evaluate the adequacy of those density forecasts using the framework of Diebold, Gunther, and Tay [1997]. The analysis reveals several interesting features, and several deficiencies of the density forecasts in relation to realized inflation. The probability of a large negative inflation shock generally is overestimated,

and in more recent years the probability of a large shock of either sign is overestimated. Inflation surprises are serially correlated, although agents eventually adapt. Expectations of low inflation are associated with reduced uncertainty. The results suggest several promising directions for future research.

The Value of Children and Immigrants in a Pay-As-You-Go Pension System: A Proposal for a Partial Transition to a Funded System

Hans-Werner Sinn

NBER Working Paper No. 6229

October 1997

JEL Nos. H55, J6

Public Economics

I show that the net fiscal externality created by an additional member of a pay-as-you-go pension system that is endowed with individual accounts equals the gross contributions of this member. In Germany, this is an amount of about DM 175,000. I use this information to design a hybrid funded system that avoids this externality and improves the public pension system under equity and efficiency considerations.

Business Cycles Observed and Assessed: Why and How They Matter

Victor Zarnowitz

NBER Working Paper No. 6230

October 1997

JEL Nos. E32, E37

Economic Fluctuations and Growth

Business cycles on the whole are well defined and described, yet they have no generally accepted explanation. Whether in spite of, or because of, proliferation of abstract and fragmented models in this field, the theory of business cycles is long on questions but short on answers. Natural disasters and then financial

crises constituted the earliest perceived reasons for economic instability. Classical literature on the subject, developed in the second half of the nineteenth and first half of the twentieth century favored for the most part the concept of self-sustaining or endogenous fluctuations, but recent models again stress outside factors and exogenous random shocks.

In an ideal world under the assumptions of perfect competition, flexible prices, national expectations, and money neutrality, there is room for real business cycles because of shocks to technology and possibly also shocks to tastes, relative prices, and fiscal variables. In the real world, however, there is ample evidence that many sticky prices and wages coexist with many flexible prices and wages. Movements in levels of prices can be stabilizing, even while movements in expected changes of prices are destabilizing. Cyclical movements in nominal aggregates point to the role of money. The premise of passive money clashes with the popular view that monetary policy is highly important. The lesson of recent history is that monetary factors influence the course of economic activity along with real and expectational variables.

There are incentives for learning how to avoid biased forecasts, but data and models are not good enough to assure that rational expectations are achieved and maintained. Individuals' rational plans are not necessarily collectively consistent. Unstable and adverse conditions can exist even under the extreme assumptions of perfect flexibility of all prices and perfect foresight.

Highly aggregative models, while attractively simple and articulated, are not able to deal with the diversity of causes and consequences of business cycles. Disaggregation is essential for theories that emphasize endogenous processes of spending, saving, borrowing, and investing.

Trend and cycles are interrelated and have common causes. Periods and countries with *high* growth had *low* instability.

Certain variables have long been critically important in business cycles, as shown by historical studies within and across countries: profits, investment, interest rates, money, and credit. Leads and lags, nonlinearities and asymmetries, also had demonstrably eminent roles, which they retain. Multiple-shock models are superior to single-shock models.

Finally, recessions have high social costs in terms of unemployment and depressed growth. Expansions can also be costly by causing imbalances and excesses. Structural and policy problems may seem to be separable from these cyclical problems but often are not.

Trade versus Investment Liberalization

James R. Markusen

NBER Working Paper No. 6231

October 1997

JEL Nos. F12, F23

International Trade and Investment

Despite several theoretical contributions and considerable informal empirical evidence to the contrary, the notion that trade and investment are substitutes persists in trade policy analysis. This paper considers the liberalization of commodity trade versus liberalization that allows direct investment versus the two together. For an economy with a relative scarcity of skilled labor, trade and investment liberalization are quite different, and the two together in a sense are complements. The intuition may be that direct investment provides such a country with crucial inputs (knowledge-intensive producer services) without which the country cannot effectively exploit its abundant factors in certain industries.

Liberalization and Incentives for Labor Migration: Theory with Applications to NAFTA

James R. Markusen and Stephen Zahniser

NBER Working Paper No. 6232

October 1997

JEL Nos. F22, F15

International Trade and Investment

One of the motivations for NAFTA from the U.S. point of view was to reduce the incentives for Mexican migration into the United States. Unskilled rural males are a primary source of illegal immigration and are also Mexico's relatively abundant factor. This group therefore should be made better off by trade and investment liberalization, according to the traditional Heckscher-Ohlin model. Existing evidence, along with the best guesses of many experts in the area, suggest that NAFTA is unlikely to have a significant positive impact on this group, at least not within the time frame of several decades. We draw on a number of recent theoretical contributions in order to offer reasons why NAFTA may not raise the wages of unskilled Mexican workers.

A Strategy for Launching the Euro

Maurice Obstfeld

NBER Working Paper No. 6233

October 1997

JEL Nos. F31, F33, E42

International Finance and Macroeconomics

This paper analyzes the constraints that European Union (EU) law places on the January 1, 1999 choices of irrevocably fixed conversion rates between the Euro and the currencies of European Monetary Union (EMU) member states. Current EU legislation, notably the Maastricht treaty, requires that the bilateral currency conversion factors implied by the

January 1, 1999 choices equal closing market exchange rates on December 31, 1998. Given that legal constraint, there still exist several strategies for choosing the relative prices of EMU member currencies against the Euro. Unfortunately, most of these have potentially damaging side effects. One approach, based on official Stage 2 offers of contingent Euro-forward contracts with value dates at the start of Stage 3, allows a highly credible preannouncement of the bilateral currency conversion factors to be set at the start of EMU. That approach assumes, however, that no prospective EMU members can withdraw between their selection in May 1998 and the start of Stage 3.

The Determinants and Implications of Corporate Cash Holdings

Tim Opler, Lee Pinkowitz, René Stulz, and Rohan Williamson

NBER Working Paper No. 6234

October 1997

Corporate Finance

We examine the determinants and implications of holdings of cash and marketable securities by publicly traded U.S. firms in the 1971–94 period. Firms with strong growth opportunities and riskier cash flows hold relatively high ratios of cash to total assets. Firms that have the greatest access to the capital markets (for example, large firms and those with credit ratings) tend to hold lower ratios of cash to total assets. These results are consistent with the view that firms hold liquid assets in order to insure that they will be able to keep investing when cash flow is too low relative to planned investment and when outside funds are expensive. The short-run impact of excess cash on capital expenditures, acquisition spending, and payouts to shareholders is small. The main reason that firms experience large changes in excess cash is the occurrence of

operating losses. There is no evidence that risk management and cash holdings are substitutes.

Firm-level Evidence on Productivity Differentials, Turnover, and Exports in Taiwanese Manufacturing

Bee Yan Aw, Xiaomin Chen, and Mark J. Roberts

NBER Working Paper No. 6235

October 1997

JEL Nos. O12, D24

Productivity

The manufacturing sector in Taiwan has a market structure with large numbers of small firms, a heavy focus on less capital-intensive industries, and a dense network of firms that specialize in subcontracting and trading services. These features may lower the start-up costs of new manufacturing firms. Recent theoretical models of market evolution emphasize that low sunk costs of entry and exit speed firm turnover by facilitating entry and increasing the pressure on inefficient firms to exit. As a result, low-cost entry and exit may contribute to aggregate improvements in productivity by facilitating the rapid transfer of resources from less to more efficient producers within an industry. Using comprehensive firm-level panel data from the Taiwanese Census of Manufactures for 1981, 1986, and 1991, we measure differences in total factor productivity among entering, exiting, and continuing firms, and quantify the contribution of firm turnover to improvements in industry productivity.

We find significant differences in productivity across manufacturing firms that are reflected in turnover patterns in both the domestic and export market. Cohorts of new firms have lower average productivity than incumbents, but are themselves a heterogeneous group. The more productive members of the group, on average, survive and in many cases

their productivity converges to the level of incumbents. Exiting firms are less productive than survivors. Exporters, including firms that exited the export market recently, are more productive than nonexporters. These patterns are consistent with the view that both the domestic and the export market sort out high-productivity from low-productivity firms and that the export market is a tougher screen. The productivity differential between entering and exiting firms is an important source of industry-level productivity growth in Taiwanese manufacturing, accounting for as much as half of industry improvement in some industries and time periods.

Finance and Development in an Emerging Market: Argentina in the Interwar Period

Gerardo della Paolera and Alan M. Taylor

NBER Working Paper No. 6236
October 1997
International Finance and Macroeconomics

The long-run economic performance of Argentina since World War I has been relatively disappointing until recently. Yet in the interwar period, signs of future retardation and recurring crises were not obvious. It is often claimed that the remarkably rapid growth of domestic financial markets was an unmitigated success. In conventional models, such "financial deepening" would help to accelerate development, especially in an industrializing economy such as Argentina's. Yet the promise of this trend was unfulfilled: first the outbreak of World War I and then the Great Depression proved setbacks for the fledgling financial system, and a long-run deterioration set in after 1940. In this paper we trace the course of financial development using historical and international

comparisons, and we analyze both macro- and microeconomic aspects of financial intermediation.

State Fiscal Institutions and the U.S. Municipal Bond Market

James M. Poterba and Kim S. Rueben

NBER Working Paper No. 6237
October 1997
JEL Nos. H61, H74
Public Economics

This paper presents new evidence on the effect of state fiscal institutions, particularly balanced-budget rules and restrictions on state debt issuance, on the yields on state general obligation bonds. We analyze information from the Chubb Relative Value Survey, which contains relative tax-exempt yields on the bonds issued by different states over the period 1973–96. We find that states with tighter anti-deficit rules, and more restrictive provisions on the authority of state legislatures to issue debt, pay lower interest rates on their bonds. The interest rate differential between a state with a very strict anti-deficit fiscal constitution, and one with a lax constitution, is between 15 and 20 basis points. States with binding revenue limitation measures tend to face higher borrowing rates by approximately the same amount, while states with expenditure limits face lower borrowing costs. Thus fiscal restraints that control expenditures are viewed favorably by bond market participants, while those that restrict taxes, and therefore might interfere with the state's ability to repay interest, result in higher borrowing costs. The effect of strict fiscal institutions is particularly evident when a state's economy is weak. These results provide important evidence that bond market participants consider fiscal institutions in assessing the risk characteristics of tax-exempt bonds, and further support

the view that fiscal institutions have real effects on fiscal policy outcomes.

Is Bank-Centered Corporate Governance Worth It? A Cross-Sectional Analysis of the Performance of Japanese Firms during the Asset Price Deflation

Jun-Koo Kang and René M. Stulz

NBER Working Paper No. 6238
October 1997
Corporate Finance

We examine the determinants of firm stock-price performance from 1990 to 1993 in Japan. During that period, the typical firm on the Tokyo Stock Exchange lost more than half its value, and banks experienced severe adverse shocks. We show that firms whose debt had a higher fraction of bank loans in 1989 performed worse from 1990 to 1993. This effect is statistically as well as economically significant and holds when we control for a variety of variables that affect performance during this period. We find that firms that were more bank-dependent also invested less during this period than other firms. This points to an adverse effect of bank-centered corporate governance, namely that firms suffer when their banks are experiencing difficulties.

Higher Tariffs, Lower Revenues? Analyzing the Fiscal Aspects of the "Great Tariff Debate of 1888"

Douglas A. Irwin

NBER Working Paper No. 6239
October 1997
JEL Nos. N71, H6, F13
Development of the American Economy and International Trade and Investment

After the Civil War, Congress justified high import tariffs (relative to their prewar levels) as necessary in order to raise sufficient revenue to pay off the public debt. By the early 1880s, the federal government was

running large and seemingly intractable fiscal surpluses: revenues exceeded expenditures (including debt service and repurchases) by over 40 percent during that decade. The political parties proposed alternative plans to deal with the surplus: the Democrats proposed a tariff reduction to reduce customs revenue, the Republicans offered higher tariffs to reduce imports and customs revenue. This paper examines this debate and attempts to determine the revenue effects of the proposed tariff changes. The results indicate that, given the height of the tariff and the price elasticity of U.S. import demand during the 1880s, the actual tariff was below the maximum revenue rate, and therefore a tariff reduction would have reduced customs revenue.

Projected Retirement Wealth and Savings Adequacy in the Health and Retirement Study

**James F. Moore and
Olivia S. Mitchell**

NBER Working Paper No. 6240

October 1997

JEL Nos. J14, G23, H55

Aging

Low saving rates raise questions about Americans' ability to maintain consumption levels in old age. Using the Health and Retirement Study, this paper explores asset holdings among a nationally representative sample of people on the verge of retirement. Making reasonable projections about asset growth, we assess how much more people would need to save in order to preserve consumption levels after retirement. We find that the median older household has current wealth of approximately \$325,000 including pensions, Social Security, housing, and other financial wealth, an amount projected to grow to about \$380,000 by retirement at age 62. Nevertheless, our model suggests

that this median household will still need to save 16 percent of annual earnings to preserve pre-retirement consumption. For retirement at age 65, assets are expected to be about \$420,000 and required additional saving totalling 7 percent of earnings per year. These summary statistics conceal extraordinary heterogeneity in both assets and saving needs in the older population. Older high wealth households have 45 times more assets than the poorest decile, and this disparity increases with age. There are also large differences in prescribed saving targets, ranging from 38 percent of annual earnings for those in the lowest wealth decile to negative rates for the wealthiest decile.

Foreign Direct Investment as a Catalyst for Industrial Development

**James R. Markusen and
Anthony J. Venables**

NBER Working Paper No. 6241

October 1997

International Trade and Investment

How does a foreign direct investment (FDI) project affect local firms in the same industry? Competition in the product and factor markets tends to reduce profits of local firms, but linkage effects to supplier industries may reduce input costs and raise profits. This paper develops an analytical framework for assessing these effects. We establish circumstances in which FDI is complementary to local industry, and show how FDI may lead to the establishment of local industrial sectors. These sectors may grow to the point where local production overtakes and forces out FDI plants. Our results are consistent with the experience of a number of industrial sectors in the newly industrializing countries.

Impact of a Managed Behavioral Health Care Carve-Out: A Case Study of One HMO

Anne E. Brisson, Richard G. Frank, Elizabeth S. Notman, and Julie A. Gazmararian

NBER Working Paper No. 6242

October 1997

JEL No. I11

Health Care

We examine a case study of a carve-out for mental health (MH) and substance abuse (SA) services between a local plan of a national HMO (N=120,213) and a local managed behavioral health care vendor (MBHC). This is one of the first studies which estimates the impact of an HMO carve-out on costs and patterns of MH/SA care. Three years of insurance claims data (1993-5) were used for the analyses, with a new carve-out contract implemented in May 1994. The new carve-out arrangement included a new vendor, a change in the organizational structure of clinical services, and increased financial risk to the vendor for inpatient care. Descriptive and empirical analyses are reported on a continuously enrolled population (N=49,529). The analyses show that the new carve-out arrangements had a significant impact on spending and utilization of services. Enrollees were 20 percent less likely to use MH/SA services after the implementation of the new carve-out, and inpatient MH/SA utilization dropped 50 percent under the new carve-out. Overall, MH/SA spending per enrollee dropped from approximately \$4.90 per month to \$2.20 per month. Outpatient MH/SA spending per user dropped 35 percent after the implementation of the new carve-out. Further research should be conducted to evaluate the impact on access and quality of care, given the substantial decrease in utilization and spending.

International Competition and Exchange Rate Shocks: A Cross-Country Industry Analysis of Stock Returns

**John M. Griffin and
René M. Stulz**

NBER Working Paper No. 6243

October 1997

Asset Pricing

It is widely accepted that, for some industries, competition across countries is economically important, and competition is affected strongly by exchange rate changes. We explore the validity of this view using weekly stock return data on 320 industry pairs in six countries from 1975 to 1997. We find that common shocks to industries across countries are more important than competitive shocks. Weekly exchange rate shocks explain almost none of the relative performance of industries. Based on returns measured over longer horizons, the importance of exchange rate shocks increases slightly, and the importance of common shocks to industries increases more substantially. Both industry and exchange rate shocks are more important for industries that produce goods traded internationally, but the importance of these shocks is economically small for those industries as well.

Growth, Distribution and Demography: Some Lessons from History

Jeffrey G. Williamson

NBER Working Paper No. 6244

October 1997

JEL Nos. D3, F1, J1, N3, O1

Development of the American Economy

If we have learned anything from the recent outpouring of empirical growth equations, it is that life is far too complex to expect "unconditional" convergence among all countries and at all times. This fact motivates two questions. First, why has it taken economists so long to

learn the same lesson from the Kuznets Curve debate? No economist should expect an "unconditional" Kuznets Curve to emerge from the growth experience of all countries and at all times. The forces of the industrial revolution thought to have an impact on inequality can be offset or reinforced by demography, skill supply, and globalization. This paper assesses the role of globalization and demography via mass migrations.

Second, why has it taken economists so long to learn that demography influences growth? When treated properly, demography can be shown to have a significant impact on the per capita growth of GDP. I seek to answer these two questions by looking at inequality and growth experience in the Old World, the New World, and Asia over the last century and a half.

Consumer Beliefs and Buyer and Seller Behavior in the Vehicle Inspection Market

Thomas N. Hubbard

NBER Working Paper No. 6245

October 1997

JEL Nos. L14, L15, D83

Industrial Organization

The California vehicle emission inspection market offers a rare opportunity to examine how incentives operate in "diagnosis-cure" markets. I investigate why sellers help vehicles pass inspections, focusing on multi-period mechanisms such as those in reputation models. I show that the demand faced by individual firms is sensitive to inspection outcomes. Consumers are 30 percent more likely to return to a firm at which they previously passed inspection than one at which they previously failed. If, over the long run, an independent garage fails one additional vehicle per month, this decreases demand by 5.6 inspections per month on average. This figure is

lower for service stations and new car dealers. Consumers' behavior is consistent with a learning model in which they have diffuse initial priors regarding the probability that they fail at individual firms, and "Bayesian update" using two to three inspection outcomes at each firm.

Explaining National Differences in the Size and Industry Distribution of Employment

**Steven J. Davis and
Magnus Henrekson**

NBER Working Paper No. 6246

October 1997

JEL Nos. L52, J21, H30

Labor Studies

What factors determine national differences in the size and industry distribution of employment? We stress the role of the economic policy environment as determined by business taxes, employment security laws, credit market regulations, the national pension system, wage-setting institutions, and the size of the public sector. We characterize these aspects of the policy environment in Sweden prior to 1990-1 and compare them to the situation in other European countries and the United States. Our characterization and international comparisons show that Swedish policies strongly disfavored less capital-intensive firms, smaller firms, entry by new firms, and individual and family ownership of business.

We also compile evidence that these policies affect outcomes. Taking the U.S. industry distribution as a benchmark that reflects a comparatively neutral set of policies and institutions, Sweden's employment distribution in the mid-1980s is sharply tilted away from low-wage industries and industries with greater employment shares for smaller firms and establishments. Compared to other European countries, Sweden has an unusually high share of employment

in large firms. Furthermore, the Swedish rate of self-employment in the 1970s and 1980s is the lowest among all OECD countries.

The institutional and policy factors emphasized by our study differ greatly across countries. This fact suggests that our approach can be fruitfully applied to other studies of national differences in industry and size structures and their evolution over time. As an example, the tax reform wave of the 1980s—which largely evened out cross-country differences in corporate taxation among OECD countries—offers some basis for projecting a movement towards greater similarity among wealthy countries in the size and industry distribution of employment.

Capital Mobility and Exchange Market Intervention in Developing Countries

**Michael P. Dooley,
Donald J. Mathieson, and
Liliana Rojas-Suarez**

NBER Working Paper No. 6247

October 1997

JEL Nos. F32, F36, F4

International Finance and
Macroeconomics

This paper develops a new technique for measuring changes in the degree of capital mobility confronting a developing country that has restrictions on capital flows and official ceilings on domestic interest rates. Because such official controls rule out the use of traditional interest rate parity conditions to measure changes in the degree of capital mobility, the analysis first examines an intertemporal model of an open economy. This model describes the linkages between the cost of undertaking disguised capital flows, the current account, capital controls, domestic and external financial market conditions, and the authorities' foreign exchange market interventions. The

model suggests a means of measuring changes in the cost of undertaking disguised capital flows, based on the past history of differentials between external interest rates (adjusted for exchange rate changes) and domestic ceiling interest rates, provided that the authorities' foreign exchange market activities are incorporated into the analysis. Parameter estimates for Korea, Mexico, and the Philippines indicate that the real cost of undertaking disguised capital flows declined by nearly 70 percent on average between the early 1970s and the late 1980s.

Simulating U.S. Tax Reform

**David Altig, Alan J. Auerbach,
Laurence J. Kotlikoff, Kent A.
Smetters, and Jan Walliser**

NBER Working Paper No. 6248

October 1997

JEL Nos. H20, C68

Public Economics

We use a new large-scale dynamic simulation model to compare the equity, efficiency, and macroeconomic effects of five alternatives to the current U.S. federal income tax: a proportional income tax; a proportional consumption tax; a flat tax; a flat tax with transition relief; and a progressive variant of the flat tax called the "X tax." Our model incorporates intragenerational heterogeneity and kinked budget constraints. We predict major macroeconomic gains (including an 11 percent increase in long-run output) from replacing the federal tax system with a proportional consumption tax. Future middle- and upper-income classes gain from this policy, but initial older generations are hurt by the policy's implicit capital levy. Poor members of current and future generations also lose.

The flat tax, which adds a standard deduction to the consumption tax, makes all members of future generations better off, but halves the

economy's long-run output gain and harms initial older generations. Insulating these older generations through transition relief further reduces the long-run gains from tax reform. Switching to a proportional income tax without deductions and exemptions hurts current and future low lifetime earners, but helps everyone else. It also raises long-run output by over 5 percent. The X tax makes everyone better off in the long run, and raises long-run output by 7.5 percent, but harms initial older generations who bear its implicit wealth tax.

Persistence of Medicare Expenditures Among Elderly Beneficiaries

**Alan M. Garber, Thomas E.
MacCurdy, and Mark C. McClellan**

NBER Working Paper No. 6249

October 1997

JEL Nos. I11, J14, I18, H51

Aging and Health Care

The highly uneven distribution of Medicare payments among elderly beneficiaries, combined with the predictability of some of the expenditures, poses several challenges to the Medicare program. We present information about the distribution of Medicare expenditures among beneficiaries in specific years, accompanied by new evidence on the extent to which Medicare payments for the care of individual beneficiaries persist over long time periods. Our analysis is based on a longitudinal population of Medicare enrollees during the years from 1987 to 1995. We find that high-cost users accounted for a disproportionate share of the growth of Medicare Part A (hospital) payments during this period, but that an increase in the number of beneficiaries using covered services was largely responsible for the growth of Medicare Part B payments. Few beneficiaries are in the highest-cost categories for multi-

ple years; the high mortality rates of individuals who use medical services heavily, whether the expenditures occur in one year or repeatedly, limits the extent of expenditure persistence. Even among survivors, it is unusual to remain in the highest-cost categories for multiple years. Nevertheless, individuals with high expenditures in one year are likely to have higher-than-average expenditures in other years, and expenditures are highly skewed even over a period of nine years. Any policy to reform Medicare will need to accommodate the persistence of expenditures in order to provide adequate coverage for all beneficiaries.

Pricing and Hedging Derivative Securities in Incomplete Markets: An ϵ -Arbitrage Approach **Dimitris Bertsimas, Leonid Kogan, and Andrew W. Lo**

NBER Working Paper No. 6250
November 1997
JEL No. G13
Asset Pricing

Given a European derivative security with an arbitrary payoff function and a corresponding set of underlying securities on which the derivative security is based, we solve the dynamic replication problem: find a self-financing dynamic portfolio strategy—involving only the underlying securities—that most closely approximates the payoff function at maturity. By applying stochastic dynamic programming to the minimization of a mean-squared-error loss function under Markov state dynamics, we derive recursive expressions for the optimal replication strategy that are readily implemented in practice. The approximation error or “ ϵ ” of the optimal replication strategy is also

given recursively and may be used to quantify the “degree” of market incompleteness. To investigate the practical significance of these ϵ -arbitrage strategies, we consider several numerical examples, including path-dependent options and options on assets with stochastic volatility and jumps.

On the Superiority of Corrective Taxes to Quantity Regulation

Louis Kaplow and Steven Shavell

NBER Working Paper No. 6251
November 1997
JEL Nos. H23, D62, K32, L51
Public Economics

The traditional view of economists has been that corrective taxes are superior to direct regulation of harmful externalities when the state's information about control costs is incomplete. In recent years, however, many economists seem to have adopted the view that either corrective taxes or quantity regulation could be superior to the other. One argument for this view, identified with Weitzman [1974], holds only if the state is constrained to use a fixed tax rate (a linear tax schedule) even when harm is nonlinear. Corrective taxes are indeed superior to quantity regulation if—as seems more plausible—the state can impose a nonlinear tax equal to the schedule of harm, or can adjust the tax rate upon learning that it diverges from marginal harm. Another argument, associated with Baumol and Oates [1988], is that quantity regulation gains appeal when the state is uncertain about the harm caused by an externality. In this case, however, a corrective tax schedule (equal to the expected harm schedule) is superior to quantity regulation.

I Just Ran Four Million Regressions

Xavier X. Sala-i-Martin

NBER Working Paper No. 6252
November 1997
JEL Nos. O51, O52, O53
Economic Fluctuations and Growth

In this paper, I try to move away from the extreme bounds method of identifying “robust” empirical relations in the economic growth literature. Instead of analyzing the extreme bounds of the estimates of the coefficient of a particular variable, I analyze the entire distribution. My claim in this paper is that, if we do this, the picture emerging from the empirical growth literature is not the pessimistic “nothing is robust” that we get with the extreme bound analysis. Instead, we find that a substantial number of variables can be found to be strongly related to growth.

Technology and Bilateral Trade **Jonathan Eaton and Samuel Kortum**

NBER Working Paper No. 6253
November 1997
JEL Nos. F11, F17, O33
International Trade and Investment

We develop a Ricardian model to explore the role of trade in spreading the benefits of innovation. The theory delivers an equation for bilateral trade that, on its surface, resembles a gravity specification, but identifies underlying parameters of technology. We estimate the equation using trade in manufactures among the OECD. The parameter estimates allow us to simulate the model to investigate the role of trade in spreading the benefits of innovation and to examine the effects of lower trade barriers. Typically, foreigners benefit by only a tenth as much as the innovating country, but in some cases the benefits to close neighbors approach those of the innovator.

Monetary Policy Rules in Practice: Some International Evidence

Richard Clarida, Jordi Galí, and Mark Gertler

NBER Working Paper No. 6254

November 1997

JEL Nos. E58, F41

Economic Fluctuations and Growth, International Finance and Macroeconomics, and Monetary Economics

We estimate monetary policy reaction functions for two sets of countries: the G3 (Germany, Japan, and the United States) and the E3 (United Kingdom, France, and Italy). We find that since 1979, each of the G3 central banks has pursued an implicit form of inflation targeting, which may account for the broad success of monetary policy in those countries over this time period. The evidence also suggests that these central banks have been forward looking: they respond to anticipated inflation as opposed to lagged inflation. As for the E3, even prior to the emergence of the "hard ERM," their central banks were influenced heavily by German monetary policy. Further, using the Bundesbank's policy rule as a benchmark, we find that at the time of the EMS collapse, interest rates in each of the E3 countries were much higher than domestic macroeconomic conditions warranted. Taken together, the results support the view that some form of inflation targeting under certain circumstances may be superior to fixing exchange rates, as a means of gaining a nominal anchor for monetary policy.

Why is Corruption So Much More Taxing Than Tax? Arbitrariness Kills

Shang-Jin Wei

NBER Working Paper No. 6255

November 1997

JEL Nos. F20, F23, H3, O37

International Trade and Investment

This paper examines the effect of corruption-induced uncertainty on

foreign direct investment. The measure of uncertainty is constructed based on unpublished individual survey responses about levels of corruption in host countries. The result is striking: the effect is negative, statistically significant, and quantitatively large. An increase in the uncertainty level from that of Singapore to that of Mexico, at the average level of corruption in the sample, is equivalent to raising the tax rate on multinational firms by 32 percentage points. Hence, the second-moment (uncertainty) effect can and does have first-order importance.

The Big Players in the Foreign Exchange Market: Do They Trade on Information or Noise?

Shang-Jin Wei and Jungshik Kim

NBER Working Paper No. 6256

November 1997

JEL No. F31

International Finance and Macroeconomics

We ask whether there is private information in the foreign exchange market, and whether speculation reduces or exacerbates volatility. We use a recent dataset on foreign currency positions of large market participants that includes their positions on options and other derivatives. This is the first dataset that describes comprehensive currency positions of market participants. We find first, that not only the absolute value of the options position, but also that of spot, forward, and futures positions of large participants "Granger-causes" exchange rate volatility. This suggests that the large participants' currency speculation does not stabilize exchange rate volatility. Second, our regression analyses do not find any positive association between large participants' position in a foreign currency and its subsequent appreciation. A non-parametric approach finds some weak support for a positive association but not on a system-

atic level. This casts doubt on the view that large participants have better information about the future movement of exchange rates. It further strengthens the case that the large players trade on noise rather than on information.

Econometric Models of Limit-Order Executions

Andrew W. Lo, A. Craig MacKinlay, and June Zhang

NBER Working Paper No. 6257

November 1997

JEL No. G23

Asset Pricing

Limit orders incur no price impact, however their execution time is uncertain. We develop several econometric models of limit-order execution times using survival analysis, and then estimate them with actual limit-order data. We estimate models for time-to-first-fill and time-to-completion, and for limit-sells and limit-buys, and we incorporate the effects of explanatory variables, such as the limit price, the limit size, the bid/offer spread, and market volatility. We find that execution times are very sensitive to limit price and several other explanatory variables, but are not sensitive to limit size. We also show that hypothetical limit-order executions, constructed either theoretically from first-passage times or empirically from transactions data, are very poor proxies for actual limit-order executions.

Generating Real Persistent Effects of Monetary Shocks: How Much Nominal Rigidity Do We Really Need?

Olivier Jeanne

NBER Working Paper No. 6258

November 1997

JEL Nos. E1, E3

Monetary Economics

This paper asks whether money can generate persistent economic fluctuations in dynamic general equilibrium models of the business cycle.

I show that a small nominal friction in the goods market can make the response of output to monetary shocks large and persistent if it is amplified by real wage rigidity in the labor market. I also argue that, given the level of real wage rigidity that is observed in developed countries, a small degree of nominal stickiness might be sufficient for money to produce economic fluctuations as persistent as those observed in the data.

On the Disutility and Discounting of Imprisonment and the Theory of Deterrence

A. Mitchell Polinsky and Steven Shavell

NBER Working Paper No. 6259

November 1997

JEL No. K14

Law and Economics

This article studies the implications for the theory of deterrence of: 1) the manner in which individuals' disutility from imprisonment varies with the length of the imprisonment term; and 2) discounting the future disutility and future public costs of imprisonment. We address two questions: Is deterrence enhanced more by increasing the length of imprisonment terms, or by raising the likelihood of imposing imprisonment? What is the optimal combination of the severity and probability of imprisonment sanctions?

Taxation by Telecommunications Regulation

Jerry Hausman

NBER Working Paper No. 6260

November 1997

JEL Nos. H21, L51

Industrial Organization and Public Economics

Telecommunications regulation in the United States is replete with a system of subsidies and taxes. Because of budgetary spending limits,

Congress is increasingly unable to increase general taxes to pay for social programs. Thus we fund these programs from taxes on specific sectors of the economy. In this paper, I consider the Congressional legislation that established a program for all public schools and libraries in the United States to receive subsidized service to the Internet. The cost of the program currently is estimated to be \$2.25 billion per year. Congress passed legislation that directed all users of interstate telephone service to pay for the program.

Using analytical methods from public finance, I calculate the efficiency cost to the economy of the increased taxation of interstate telephone services to fund the Internet access discounts. I estimate the cost to the economy of raising the \$2.25 billion per year to be at least \$2.36 billion (in addition to the \$2.25 billion of tax revenue), or the efficiency loss to the economy for every \$1 raised to pay for the Internet access discounts is an additional \$1.05 to \$1.25 beyond the money raised for the Internet discounts. This cost to the economy is extraordinarily high compared to other taxes used by the Federal government to raise revenues. I discuss an alternative method by which the FCC could have raised the revenue for the Internet discounts which would have a near zero cost to the economy.

The Role of Discretion in the Criminal Justice System

Daniel P. Kessler and Anne Morrison Piehl

NBER Working Paper No. 6261

November 1997

JEL Nos. K41, D73

Law and Economics

Although a substantial body of research suggests that individuals' discretion in the criminal justice system is important, there is disagreement in the existing literature about

its specific role. The studies generally hypothesize that discretion either serves as the means by which changing broad social norms against crime causes changes in sentencing patterns; or it serves as the means by which internal social norms of the criminal justice system prevent the implementation of formal changes in laws.

We reject both of these hypotheses, using data on the sentencing of California prisoners before and after the passage of Proposition 8, which provided for sentence enhancements for those convicted of certain "serious" crimes with "qualifying" criminal histories. We find that an increase in the statutory sentence for a given crime cannot only increase sentence length for those charged with the crime, but also for those charged with factually "similar" crimes: a "similar" crime is defined as one that has legal elements in common with the given crime. These spillovers are consistent with neither broad social norms nor internal social norms. Thus, we conclude that discretion takes a less-well studied form, which we call "prosecutorial maximization."

International Trade and Labor-Demand Elasticities

Matthew J. Slaughter

NBER Working Paper No. 6262

November 1997

JEL Nos. F1, J3

International Trade and Investment

In this paper, I try to determine whether international trade has been increasing the own-price elasticity of demand for U.S. labor in recent decades. There are three main results. First, from 1960 through 1990, demand for U.S. production labor became more elastic in manufacturing overall, and in five of eight industries within manufacturing. Second, during this time the demand for U.S. nonproduction labor did not become more elastic in manufacturing over-

all, or in any of the eight industries within manufacturing. If anything, demand seems to be growing less elastic over time. Third, the hypothesis that trade contributed to increased elasticities has mixed support, at best. For production labor, many trade variables have the predicted effect for specifications with only industry controls. But these predicted effects disappear when time controls are included as well. For nonproduction labor, things are somewhat better, but time continues to be a very strong predictor of elasticity patterns. Thus the time series of labor-demand elasticities is explained largely by a residual, time itself. This result parallels the common finding in studies of rising wage inequality. Just as there appears to be a large unexplained residual for changing factor prices over time, there also appears to be a large unexplained residual for changing factor demand elasticities over time.

The Rate of Return to Corporate Capital and Factor Shares: New Estimates Using Revised National Income Accounts and Capital Stock Data

James M. Poterba

NBER Working Paper No. 6263

November 1997

JEL Nos. D24, D33, G31

This paper presents new evidence on the rate of return on tangible assets in the United States, incorporating the recently-revised national accounts as well as new estimates of the replacement cost of the reproducible physical capital stock. The pretax return on capital in the nonfinancial corporate sector has averaged 8.5 percent over the 1959–96 period. The paper also presents new estimates of the total tax burden on nonfinancial corporate capital, which averages 54.1 percent over this time period. For the 1990s, this tax rate,

which includes corporate income and corporate property taxes, and taxes on stock- and bondholders, averages 42.1 percent of pretax profits. The average pretax rate of return for 1990–6 is 8.6 percent, and the average aftertax return is 5 percent. Although the accounting return to corporate capital has been higher in the mid-1990s than at any previous point in the last two decades, the substantial volatility in the return series makes it premature to conclude that these years represent a departure from past experience.

Aggregate Investment

Ricardo J. Caballero

NBER Working Paper No. 6264

November 1997

JEL Nos. E2, D9

The 1990s have witnessed a revival in economists' interest in and hope of explaining aggregate and microeconomic investment behavior. New theories, better econometric procedures, and more detailed panel datasets are behind this movement. Much of the progress has occurred at the level of microeconomic theories and evidence; however, progress in aggregation and general equilibrium aspects of the investment problem also has been significant. The concept of sunk costs is at the center of modern theories. The implications of these costs for investment go well beyond the neoclassical response to the irreversible-technological friction they represent, for they also can lead to first-order inefficiencies when interacting with informational and contractual problems.

Does Immigration Hurt African-American Self-Employment?

Robert W. Fairlie and Bruce D. Meyer

NBER Working Paper No. 6265

November 1997

JEL Nos. F22, J15

Previous studies tend to find that immigration has a weak negative effect on the employment and earnings of native-born workers. These studies generally overlook the effect of immigration on an important sector of the labor force, the self-employed. Anecdotal evidence suggests that immigrants, especially those from Asian countries, may displace black-owned business owners. We use Census of Population microdata to see whether black self-employment levels are lower in labor markets with a higher share of immigrants. We define labor markets as metropolitan areas (MAs), and we use the variation across 94 MAs in the United States to examine the relationship between black self-employment and immigration in 1980 and 1990. To control for permanent differences across MAs in other influences, we also estimate the effect of the change in immigration from 1980 to 1990 on the change in black self-employment over this period. In general we find that immigration has no effect, or only a small negative but statistically insignificant effect, on black male or female self-employment. Our findings are similar if we weight immigration rates by the propensity of immigrant groups to be self-employed; if we limit our sample of immigrants to those from only Asian countries; and if we try other alternative estimation techniques and specifications.

Slowdowns and Meltdowns: Postwar Growth Evidence from 74 Countries

Dan Ben-David and David H. Papell

NBER Working Paper No. 6266

November 1997

JEL Nos. C22, O1, O5, O47

We propose an explicit test for determining the significance and the timing of slowdowns in economic growth during the postwar period.

We examine a large sample of countries (both industrialized and developing) and find that a majority—though not all—exhibit a significant structural break in their postwar growth rates. In nearly all of these cases, the break was followed by a slowdown in growth. The breaks fall into two primary periods which delineate countries by developmental and regional characteristics as well as by the magnitude of the subsequent slowdowns. We find that most industrialized countries experienced postwar growth slowdowns in the early 1970s; the United States, Canada, and the United Kingdom did not; and developing countries (and in particular, Latin American countries) tended to experience much more severe slowdowns which, in contrast with the more developed countries, began nearly a decade later.

Convergence Clubs and Subsistence Economies

Dan Ben-David

NBER Working Paper No. 6267

November 1997

JEL Nos. E1, E2, O4

This paper focuses on one possible explanation for the empirical evidence of income convergence among the world's poorest and wealthiest countries, and income divergence among most of the remaining countries. The model incorporates the assumption of subsistence consumption into the neoclassical exogenous growth model, yielding outcomes that are consistent with the convergence-divergence empirical evidence. While subsistence consumption can lead to negative saving and disaccumulation of capital, it also can be associated with positive saving and the accumulation of capital. The model predicts that the poorer the country, the lower its saving rate. This result also appears to be borne out by the evidence I provide.

Demographic Transitions and Economic Miracles in Emerging Asia

David E. Bloom and Jeffrey G. Williamson

NBER Working Paper No. 6268

November 1997

JEL Nos. J1, O1, O4, O53

The demographic transition—a change from high to low rates of mortality and fertility—has been more dramatic in East Asia during this century than in any other region or historical period. By introducing demographic variables into an empirical model of economic growth, we show that this transition has contributed substantially to East Asia's so-called economic miracle. The “miracle” occurred in part because East Asia's demographic transition resulted in its working-age population growing at a much faster pace than its dependent population during 1965–90, thereby expanding the per capita productive capacity of East Asian economies. This effect was not inevitable; rather, it occurred because East Asian countries had social, economic, and political institutions and policies that allowed them to realize the growth potential created by the transition. The empirical analyses indicate that population growth has a purely transitional effect on economic growth; this effect operates only when the dependent and working-age populations are growing at different rates. An important implication of these results is that future demographic change will tend to depress growth rates in East Asia, while it will promote more rapid economic growth in Southeast and South Asia.

Strategic Bidding in a Multi-Unit Auction: An Empirical Analysis of Bids to Supply Electricity in England and Wales

Catherine D. Wolfram

NBER Working Paper No. 6269

November 1997

JEL Nos. D44, L94

This paper considers the bidding behavior of participants in the daily auction for supplying electricity in England and Wales. Every day, owners of generating capacity submit bids reflecting a price for power from their plants. The bid made by the last plant that is used to meet electricity needs in a given time period is the price paid for capacity from all plants. Theoretical work on such uniform-price multi-unit auctions suggests that bidders selling more than one unit of a good have an incentive to increase the prices they bid at high quantities. If a bid sets the equilibrium price, then the bidder receives a higher price for that unit, as well as for all inframarginal units. I find evidence of strategic increases in bids. Plants that are likely to be used only after a number of other plants are already operating will bid more. The larger supplier will submit higher bids, all else equal. Finally, there is some evidence that bids for given plants are higher when the suppliers have more available capacity.

Geographic Concentration as a Dynamic Process

Guy Dumais, Glenn Ellison, and Edward L. Glaeser

NBER Working Paper No. 6270

November 1997

JEL Nos. L60, R11

The degree of geographic concentration of individual manufacturing industries in the United States has declined only slightly in the last 20 years. At the same time, new plant births, plant expansions, contrac-

tions, and closures have shifted large quantities of employment across plants, firms, and locations. This paper uses data from the Census Bureau's Longitudinal Research Database to examine how relatively stable levels of geographic concentration emerge from this dynamic process. While industries' agglomeration levels tend to remain fairly constant, there is greater variation in the location of these agglomerations.

We decompose aggregate changes in concentration into those portions attributable to plant births, expansions, contractions, and closures, and find that the location choices of new firms and the differences in growth rates have played the most significant role in reducing levels of geographic concentration, while plant closures have tended to reinforce agglomeration. Finally, we look at coagglomeration patterns to test three of Marshall's theories of industry agglomeration: 1) agglomeration saves transport costs by proximity to input suppliers or final consumers; 2) agglomeration allows for labor market pooling; and 3) agglomeration facilitates intellectual spillovers. While there is some truth behind all three theories, we find that industrial location is driven far more by labor mix than by any of the other explanatory variables.

Learning in Cities

Edward L. Glaeser

NBER Working Paper No. 6271

November 1997

JEL Nos. J24, O15, R10

Alfred Marshall argues that industrial agglomerations exist in part because individuals can learn skills from each other when they live and work in close proximity. An increasing amount of evidence suggests that the informational role of cities is a primary reason for their continued existence. This paper formalizes Marshall's theory using a model in which individuals acquire skills by

interacting, and dense urban areas increase the speed of interaction. The model predicts that cities will have a higher mean and variance of skills. Cities will attract young people who are not too risk averse and who benefit most from learning (for example, more patient people). Older, more skilled workers will stay in cities only if they can internalize some of the benefits that their presence creates for young people. The level of urbanization will rise when the demand for skills rises, when the ability to learn by imitation rises, or when the level of health in the economy rises. Empirical evidence on urban wages supports the learning view of cities and I corroborate empirically a variety of other implications of the theory.

Exceptional Exporter Performance: Cause, Effect, or Both?

**Andrew B. Bernard and
J. Bradford Jensen**

NBER Working Paper No. 6272

November 1997

JEL Nos. F10, D21, L60

A growing body of empirical work has documented the superior performance characteristics of exporting plants and firms relative to those that do not export: employment, shipments, wages, productivity, and capital intensity are higher at exporters at any given moment. We ask whether good firms become exporters or instead that exporting improves firm performance. The evidence is quite clear on one point: good firms become exporters. Both growth rates and measures of levels of success are higher ex-ante for the exporters. The benefits of exporting for the firm are less clear. Employment growth and the probability of survival are higher for exporters; however, productivity and wage growth is not superior, particularly over longer horizons.

Survival of the Fittest or the Fattest? Exit and Financing in the Trucking Industry

Luigi Zingales

NBER Working Paper No. 6273

November 1997

This paper studies the impact of imperfections in the capital market on the natural selection of the most efficient firms. I estimate the effect of leverage before deregulation on the survival of trucking firms after the Carter deregulation, and find that highly leveraged carriers are less likely to survive the deregulation shock, even after I control for various measures of efficiency. This effect is stronger in the imperfectly competitive segment of the motor carrier industry. High debt seems to affect survival by curtailing investments and reducing the price per-ton-mile that a carrier can afford to charge after deregulation.

Power in a Theory of the Firm

**Raghuram G. Rajan and
Luigi Zingales**

NBER Working Paper No. 6274

November 1997

Transactions take place in the firm rather than in the market because the firm offers power to agents who make specific investments. The literature has emphasized the allocation of ownership as the primary mechanism by which the firm does this. Within the contractibility assumptions of this literature, we identify a potentially superior mechanism, the regulation of access to critical resources. Access can be better than ownership because: 1) the power agents get from access is more contingent on them making the right investment; and 2) ownership has adverse effects on the incentive to specialize. The theory explains the importance of internal organization and third party ownership.

Job Destruction and Propagation of Shocks

Wouter J. den Haan, Garey Ramey, and Joel Watson

NBER Working Paper No. 6275

November 1997

JEL Nos. E24, E32

We develop and quantitatively implement a dynamic general equilibrium model with labor market matching and endogenous job destruction. The model produces a close match with data on job creation and destruction. Cyclical fluctuations in the job destruction rate serve to magnify the effects of productivity shocks on output, as well as making those effects much more persistent. Interactions between decisions about household saving and decisions about separation in employment relationships play a key role in propagating shocks.

Graduation to Health Insurance Coverage: 1981–1996

Sherry Glied and Mark Stabile

NBER Working Paper No. 6276

November 1997

The health insurance experience of young men, who are new entrants to the labor market, provides an early indicator of the strengths and weaknesses of the employer-sponsored health insurance system. Insurance coverage for these men has fallen sharply over the past 15 years. We examine patterns of health insurance coverage for cohorts of young men using successive cross-sectional surveys and longitudinal data.

We find that coverage declines persist and are exacerbated as young men age. Not only did cohorts of men born during the 1950s fail to age into employer-sponsored coverage as they reached their 30s and 40s, but they actually lost such coverage as they grew older. Furthermore, young men who lacked coverage when they

were in their mid-20s were not likely to gain such coverage later. Declines in coverage are sharpest among the least educated cohorts of young men. We show that most of the decline is attributable to the substantial increase in health insurance costs during the 1980s. By contrasting young men's experiences with pension receipt with their health insurance experiences, we show that structural changes in the labor market cannot explain any of the decline in coverage within cohorts.

Our results suggest that the existing system of employer-sponsored health insurance subsidies did not compensate for the declines in earnings and increases in health insurance costs faced by young men between 1981 and 1996.

Avoiding Health Insurance Crowd-Out: Evidence from the Medicare-as-Secondary-Payer Legislation

Sherry Glied and Mark Stabile

NBER Working Paper No. 6277

November 1997

The cost of efforts to expand health insurance coverage to the currently uninsured increases when people who would otherwise purchase private insurance obtain subsidized public coverage. Legislators increasingly are interested in mechanisms that target insurance benefits to those who need them most. This paper investigates the effects of one of the first such targeting efforts, the 1982 Medicare as Secondary Payer (MSP) provisions.

The MSP rules require employers who offer insurance coverage to their employees under 65 to offer coverage on the same terms to their Medicare-eligible employees. This coverage then becomes "primary" to Medicare. We examine the incidence of this implicit tax, the magnitude of tax avoidance efforts, and the extent of tax compliance.

We find little evidence that the MSP rules affected the wages or employment of covered workers. We find weak evidence suggesting that the MSP shifted the composition of employment of older workers toward MSP-exempt jobs. We find strong evidence of low compliance with the MSP rules.

Our results cast doubt on the efficacy of provisions designed to reduce crowd-out in new health insurance programs.

A New Bankruptcy Procedure that Uses Multiple Auctions

Oliver Hart, Rafael La Porta Drago, Florencio Lopez-de-Silanes, and John Moore

NBER Working Paper No. 6278

November 1997

JEL Nos. G33, K22

We develop a new bankruptcy procedure that makes use of multiple auctions. The procedure is designed to work even when capital markets do not function well (for example in developing economies, or in economies in transition), although it can be used in all economies.

Employer Learning and Statistical Discrimination

Joseph G. Altonji and Charles R. Pierret

NBER Working Paper No. 6279

November 1997

JEL Nos. D83, J31

We provide a test for statistical discrimination, or "rational" stereotyping, in environments in which agents learn over time, and apply it to the labor market. If profit maximizing firms have limited information about the general productivity of new workers, then they may choose to use easily observable characteristics, such as years of education, to "statistically discriminate" among workers. As firms acquire more information

about a worker, pay will become more dependent on actual productivity and less dependent on easily observable characteristics or credentials that predict productivity.

Consider a wage equation that contains both the interaction between experience and a hard-to-observe variable that is positively related to productivity and the interaction between experience and a variable that firms can observe easily, such as years of education. We show that the wage coefficient on the unobservable productivity variable should rise with time in the labor market, and the wage coefficient on education should fall. We investigate this proposition using panel data on education, the AFQT test, father's education, and wages for young men and their siblings from NLSY. We also examine the empirical implications of statistical discrimination on the basis of race. Our results support the hypothesis of statistical discrimination, although they are inconsistent with the hypothesis that firms fully utilize the information on race. Our analysis has wide implications for the analysis of the determinants of wage growth and productivity, and for the analysis of statistical discrimination in the labor market and elsewhere.

Discreteness and the Welfare Cost of Labor Supply Distortions

Keshab Bhattarai and John Whalley

NBER Working Paper No. 6280
November 1997

We discuss the effect of discrete choice of labor supply (or, leisure consumption) on measures of the welfare cost of labor supply tax distortions. We construct comparable continuous- and discrete-choice models, each calibrated to have similar aggregate (uncompensated) labor supply elasticities. In the former, there is a single representative con-

sumer; in the latter there is a distribution of individuals across preference parameters. In the discrete model, taxes induce a large response from a subset of the population, while the majority of the population shows unchanged behavior. Welfare costs of similar taxes in continuous models can substantially exceed those in discrete models or vice versa, depending upon the formulation used. We also report on experiments for a two-labor type household model with one continuous variable (secondary labor) and one discrete variable (primary labor), and do calculations using an empirically-based model specification calibrated to U.K. data. Our model clearly shows that discrete choice matters in the assessment of the cost of labor supply tax distortions.

The Redistributive Effects of Transfers

Keshab Bhattarai and John Whalley

NBER Working Paper No. 6281
November 1997

Existing literature assessing the impacts of transfers on low income households assumes that participants in transfer programs benefit by the full amount of cash transfers received. We argue here that because tax-back arrangements accompany such transfer programs, and endogenous participation decisions (that is, regime choices) are involved, a money-metric measure of the utility generated by transfers typically will be substantially less than the cash value of transfers received. We use a conditional choice general equilibrium model of the United Kingdom, calibrated to literature-based labor supply and labor demand elasticities, with a leisure-consumption choice for household and production involving heterogeneous labor inputs. In the model, households face non-convex budgets that are set because

of differences in tax rates and tax-back schemes in transfer programs. We evaluate household demands for leisure and consumption goods numerically, using optimization techniques within a larger equilibrium structure including the production side of the economy, since demands are nonanalytic. Our results suggest that a money-metric measure of the utility equivalent of transfers received by the bottom deciles of U.K. households in the early 1990s was only 32 percent of cash transfers received because of the conditionality in these programs.

Apocalypse Now? Fundamental Tax Reform and Residential Housing Values

Donald Bruce and Douglas Holtz-Eakin

NBER Working Paper No. 6282
November 1997
JEL No. H24

Using a simulation model crafted to integrate the short- and long-run effects of tax reform on the housing market, we find modest impacts from fundamental reform of the federal income tax. These results suggest that concerns about the impact of tax reform on housing values and household net worth are overstated. To the extent that reform is otherwise desirable, fears of drastic effects on the housing market should not stand as an impediment to reform.

Costly Capital Reallocation and the Effects of Government Spending

Valerie A. Ramey and Matthew D. Shapiro

NBER Working Paper No. 6283
November 1997
JEL Nos. E62, E13, E22

Changes in government spending often lead to significant shifts in demand across sectors. We analyze

the effects of sector-specific changes in government spending in a two-sector dynamic general equilibrium model in which the reallocation of capital across sectors is costly. The two-sector model leads to a richer array of possible responses of aggregate variables than the one-sector model. The empirical part of the paper estimates the effects of military buildups on a variety of macroeconomic variables using a new measure of military shocks. The behavior of macroeconomic aggregates is consistent with the predictions of a multi-sector neoclassical model. In particular, consumption, real product wages, and manufacturing productivity fall in response to exogenous military buildups in the post-World War II United States.

The Upcoming Slowdown in U.S. Economic Growth **Charles I. Jones**

NBER Working Paper No. 6284
November 1997
JEL Nos. O40, O30

At least since 1950, the United States has been stimulated by increases in educational attainment, increases in research intensity, and the increased openness and development of the world economy. Contrary to the conventional view, such changes suggest that the U.S. economy is far from its steady state balanced growth path. The theoretical framework analyzed here provides a coherent interpretation of this evidence, and indicates that when these increases cease and the U.S. economy reaches its steady state, then U.S. per capita growth can be expected to fall to a rate of approximately one quarter its post-war average.

Population and Ideas: A Theory of Endogenous Growth **Charles I. Jones**

NBER Working Paper No. 6285
November 1997
JEL Nos. O41, O30

Why do economies exhibit sustained growth in per capita income? I argue that endogenous fertility and increasing returns to scale are the fundamental ingredients in understanding endogenous growth. Endogenous fertility leads the scale of the economy to grow over time. Increasing returns translate this increase in scale into rising per capita income. According to this view, a justification for increasing returns rather than linearity in the equation for technological progress is the fundamental insight of the idea-based growth literature. Endogenous fertility together with the increasing returns associated with the nonrivalry of ideas generates endogenous growth.

Debts and Deficits with Fragmented Fiscal Policymaking **Andrés Velasco**

NBER Working Paper No. 6286
November 1997
JEL Nos. H3, H6, E6

I develop a political-economic model of fiscal policy in which government resources are a "common property" out of which interest groups can finance expenditures on their preferred items. This setup has striking macroeconomic implications. Transfers are higher than a benevolent planner would choose; fiscal deficits emerge even when there are no reasons for intertemporal smoothing and, in the long run, government debt tends to be excessively high; peculiar time profiles for transfers can emerge, with high positive net transfers early on giving way to high taxes later on; and multiple dynamic

equilibrium paths can occur starting at the same initial level of government debt.

The Market and the Estimators: Forecasting the Cost of Medicare Catastrophic Coverage **Sherry Glied and Tama Brooks**

NBER Working Paper No. 6287
November 1997

As part of the process of enacting the Medicare Catastrophic Coverage Act (MCCA) in 1988, both the Congressional Budget Office (CBO) and the Department of Health and Human Services (HHS) developed estimates of the cost of the pharmaceutical component of the proposal. These estimates varied substantially. For some benefit years, cost estimates differed by a factor of more than two.

This paper uses data from the stock market to measure how market participants gauged the likely consequences of the MCCA, and to compare the market estimate with those of the CBO and HHS estimators. We examine the market response to key events linked to passage and repeal of the MCCA for brand name and generic pharmaceutical producers. We find that on event days associated with passage of the MCCA, generic pharmaceutical firms had positive and significant excess stock market returns. On early event days associated with passage, brand name producers had smaller positive returns and on later days, brand name producers had small negative returns. On event days associated with repeal of the MCCA, brand name producers had small positive excess returns and generic producers had zero or small negative returns.

The effect of the MCCA on the stock price of pharmaceutical firms would depend on the elasticity of demand for pharmaceuticals. Differences in assumptions about this elasticity were a key component of

the differences between CBO and HHS estimates. Using the market returns to evaluate these elasticities, we find that market participants shared the CBO's view that demand responses to the legislation would be small. We also find that the market anticipated that the MCCA would strongly favor generic manufacturers.

The Sources of Regional Variation in the Severity of the Great Depression: Evidence from U.S.

Manufacturing, 1919–37

Joshua L. Rosenbloom and William A. Sundstrom

NBER Working Paper No. 6288

November 1997

JEL Nos. N12, N62, E32

The severity of the Great Depression in the United States varied by region. Most notably, compared with the rest of the country, the South Atlantic states experienced a milder contraction, while the Mountain states suffered more severely. The impact of the contraction was more uniform across other regions of the country—surprisingly so, considering the large regional differences in industrial structure. We use data from the biennial Census of Manufactures on 20 individual manufacturing industries disaggregated by state to analyze the relative contributions of industry mix and location to regional variations in economic performance during the period 1919–37. Industrial composition had a significant impact on regional employment growth, with regions that concentrated on the production of durable goods or inputs to the construction sector tending to fare worse than other regions. Long-run regional trends also played an important role in regional variation, and explain much of the South Atlantic region's more favorable performance over the cycle.

“Make Us a King”: Anarchy, Predation, and the State

Herschel I. Grossman

NBER Working Paper No. 6289

November 1997

JEL Nos. D60, D70, H40

In order to enforce a collective choice to allocate resources to guarding against predators, producers must subject themselves to the state's sovereign power to tax and spend. But, with these sovereign powers in hand, the state can exploit the producers by taxing and spending for its own purposes. Using a general equilibrium model in which people can choose to be producers or predators, this paper rationalizes the biblical request, “Make us a king.” The analysis shows that, if the technology of predation is good enough, then having a “king” is better than not having a king for everyone—including both producers and potential predators—even though the king maximizes the consumption of a ruling elite.

The Past, Present, and Future of Macroeconomic Forecasting

Francis X. Diebold

NBER Working Paper No. 6290

November 1997

Broadly defined, macroeconomic forecasting is alive and well. Non-structural forecasting, which is based largely on reduced-form correlations, always has been well and continues to improve. Structural forecasting, which aligns itself with economic theory, and hence rises and falls with theory, receded following the decline of Keynesian theory. In recent years, however, powerful new dynamic stochastic general equilibrium theory has been developed, and structural macroeconomic forecasting is poised for resurgence.

The Alleged Instability of Nominal Income Targeting

Bennett T. McCallum

NBER Working Paper No. 6291

November 1997

JEL Nos. E52, E32

It has been argued recently that a monetary policy of nominal income targeting would result in dynamically unstable processes for output and inflation. That result holds in a theoretical model that includes backward-looking IS and Phillips-curve relations, but these are rather special and theoretically unattractive. I demonstrate that replacement of the special Phillips curve with one of several more plausible specifications overturns the instability result, whether or not the IS equation is replaced with a forward-looking version. Thus, the instability result is quite fragile and provides almost no basis for a negative judgment on nominal income targeting.

Transition Issues for the European Monetary Union

Willem H. Buiter and

Anne C. Sibert

NBER Working Paper No. 6292

November 1997

JEL Nos. F31, F33, F36, E58, E63

If Stage Three of EMU starts on January 1, 1999, then transition issues will remain on two time scales. Until July 1, 2002, national currencies and the euro will co-exist as legal tender. We argue that in principle intra-EMU currency risk exists during that period, but that no EMU member can be forced out through speculative attacks.

Cohabitation of “Ins” and “Outs” has an open-ended time scale. We discuss the effect of EMU on incentives for both Ins and Outs to undertake structural reform, and the coordination problems associated with the distribution of seigniorage revenue and the Stability and Growth Pact.

The Competitive Effects of Transmission Capacity in a Deregulated Electricity Industry

Severin Borenstein, James Bushnell, and Steven Stoft

NBER Working Paper No. 6293

November 1997

In an unregulated electricity generation market, the degree to which generators in different locations compete with one another depends on the capacity to transmit electricity between locations. We study the impact of transmission capacity on competition among generators. We show that there may be no relationship between the effect of a transmission line in spurring competition and the actual electricity that flows on the line. We then investigate the equilibriums that are likely to result as transmission lines between previously unconnected locations are built and expanded. We demonstrate that limited transmission capacity can give a firm the incentive to restrict its output in order to congest transmission into its area of dominance. We apply this analysis to a model of California's forthcoming deregulated electricity market. Our results indicate that at least one firm could have an incentive to strategically induce transmission congestion, and that relatively small investments in transmission may yield surprisingly large payoffs in terms of increased competition.

Welfare and Market Access Effects of Piecemeal Tariff Reform

Jiandong Ju and Kala Krishna

NBER Working Paper No. 6294

November 1997

JEL Nos. F1, F13

In a situation where tariff reforms are being negotiated between two parties, one of which aims to raise its exports and the other to raise its welfare, tariff cuts must be in the interest

of at least one party. It is possible for the interests of the two sides to conflict. Conflict is certain if the excess demand for exported goods does not respond to changes in the prices of imported goods. In this case, any policy that raises imports must also reduce welfare.

Implications of Rising Personal Retirement Saving

James M. Poterba, Steven F. Venti, and David A. Wise

NBER Working Paper No. 6295

November 1997

JEL Nos. J14, J26

Retirement savings accounts, particularly employer-provided 401(k) plans, have expanded rapidly in the last decade. More than 40 percent of workers are currently eligible for these plans, and over 70 percent of eligibles participate in these plans. The substantial and ongoing accumulation of assets in these plans has the potential to significantly alter the financial preparations for retirement by future retirees. We use data on current age-specific patterns of 401(k) participation, in conjunction with Social Security earnings records which provide detailed information on age-earnings profiles over the lifetime, to project the 401(k) balances of future retirees. The results, which are illustrated by reference to individuals who were 27 and 37 in 1996, demonstrate the growing importance of 401(k) saving. The projected mean 401(k) balance at retirement for a current 37 year old is \$91,600, assuming that the 401(k) plan assets are invested half in stocks and half in bonds. For a current 27 year old, the projected balance is \$125,500. These results support the growing importance of personal saving through retirement saving accounts in contributing to financial well-being in old age.

The Enforcement of Intellectual Property Rights: A Survey of the Empirical Literature

Jean O. Lanjouw and Josh Lerner

NBER Working Paper No. 6296

December 1997

JEL Nos. K41, O32, O34

We examine several recent avenues of empirical research into the enforcement of intellectual property rights. To frame these issues, we start with a stylized model of the patent litigation process. The bulk of the paper is devoted to linking the empirical literature on patent litigation to the parameters of this model. The four major areas we consider are: 1) how the propensity to litigate patents varies with the expected benefits of litigation; 2) the ways in which the cost of litigation affects the willingness to enforce patents; 3) how the cost of enforcing patents changes the private value of patent rights; and 4) the impact of intellectual property litigation on the innovation process itself.

Stylized Facts of Patent Litigation: Value, Scope, and Ownership

Jean O. Lanjouw and Mark Schankerman

NBER Working Paper No. 6297

December 1997

JEL Nos. O34, K41

We investigate the characteristics of litigated patents by combining for the first time information about patent case filings from the U.S. district courts and detailed data from the U.S. Patent and Trademark Office. We construct a series of indicators for the factors which the theoretical literature suggests contribute to litigation: the frequency of disputes; the size and asymmetry of stakes; the structure of information; and costs. Compared to a random sample of U.S. patents from the same cohorts

and technology areas, we find, more valuable patents and those with domestic owners are considerably more likely to be involved in litigation. Patents owned by individuals are at least as likely to be the subject of a case as corporate patents, and litigation is particularly frequent in new technology areas. We interpret the results with reference to theoretical models of litigation and settlement, and discuss what they suggest about the effect of patent litigation on the incentives to invest in R and D.

Death to the Log-Linearized Consumption Euler Equation! (And Very Poor Health to the Second-Order Approximation)

Christopher D. Carroll

NBER Working Paper No. 6298

December 1997

JEL Nos. C6, D91, E21

This paper shows that standard empirical methods for estimating log-linearized consumption Euler equations cannot successfully uncover structural parameters, like the coefficient of relative risk aversion, from the dataset of simulated consumers behaving exactly according to the standard model. Furthermore, consumption growth for the simulated consumers is very highly statistically related to predictable income growth. Thus standard "excess sensitivity" tests would reject the hypothesis that consumers are behaving according to the standard model. Results are not much better for the second-order approximation to the Euler equation. I conclude that empirical estimation of consumption Euler equations should be abandoned, and discuss some alternative empirical strategies that are not subject to the problems of Euler equation estimation.

Environmental Regulation and Labor Demand: Evidence from the South Coast Air Basin

Eli Berman and Linda T. Bui

NBER Working Paper No. 6299

December 1997

JEL Nos. C2, C8, H2, J23, L5, Q2

The nature of environmental regulation, by generating rich variation across regions and over time, provides an excellent opportunity for estimating the effects of regulation on employment. We use direct measures of regulation and plant data to estimate the employment effects of an unprecedented increase in air quality regulation in the Los Angeles region, using for comparison unregulated plants in other regions, industries, and years. While environmental regulation generally is thought to reduce employment, economic theory is ambiguous on this point, since pollution abatement technologies may use labor. We find that air quality regulation induced very expensive investments in abatement capital for individual plants, especially for oil refineries. Despite these high costs, *we find no evidence that environmental regulation decreased labor demand, even when we allow for induced plant exit and dissuaded plant entry.* If anything, air quality regulation probably increased employment slightly.

A Model of Crises in Emerging Markets

Michael P. Dooley

NBER Working Paper No. 6300

December 1997

JEL Nos. F32, F34

First-generation models show that apparently random speculative attacks on policy regimes can be fully consistent with rational and well-informed speculative behavior. Unfortunately, models driven by a conflict between exchange rate policy and other macroeconomic objectives

do not seem consistent with important empirical regularities surrounding recent crises in emerging markets. This has generated considerable interest in models that associate crises with self-fulfilling shifts in private expectations.

In this paper, I develop a first generation model based on an alternative policy conflict. Credit constrained governments accumulate reserve assets in order to self-insure against shocks to national consumption. Governments also insure domestic financial markets that are poorly regulated. Given this policy regime, a variety of internal and external shocks generate capital inflows to emerging markets, followed by successful and anticipated speculative attacks.

I argue that a common external shock generated capital inflows to emerging markets in Asia and Latin America after 1989. Country-specific factors determined the timing of speculative attacks. Lending policies of industrial country governments and international organizations explain contagion—that is, a bunching of attacks over time.

Predation, Efficiency, and Inequality

Herschel I. Grossman and Minseong Kim

NBER Working Paper No. 6301

December 1997

JEL Nos. D60, D74, D31, D50

We show how predation breaks the links between an economy's aggregate resource endowment and consumption and between the interpersonal distribution of endowments and consumption. We construct a general-equilibrium model in which some people (the privileged) are well endowed with resources and other people (the unprivileged) are poorly endowed with resources. Each person can choose to be a producer or a predator. In this model, the choice to be a predator decreases aggregate

consumption, because predators' resources are wasted by not being used productively, and because producers sacrifice production by allocating resources to guarding against predators.

Analyzing this model, we find that the minimum equilibrium ratio of predators to producers depends only on the technology of predation. In addition, the equilibrium ratio of predators to producers equals its minimum value if and only if the ratio of unprivileged to privileged people is not larger than this minimum value. These properties imply that, in contrast to a model that abstracts from predation, the fully egalitarian distribution of resources does not satisfy the Rawlsian criterion of maximizing the consumption of the person with the lowest consumption. (In fact, the fully egalitarian distribution is not even Pareto efficient). Instead, the Rawlsian criterion selects an unequal distribution of resources in which the ratio of unprivileged to privileged people equals the minimum ratio of predators to producers, and in which unprivileged people have only the minimum possible endowment of resources. In the resulting Rawlsian equilibrium, only unprivileged people choose to be predators rather than producers; because both the ratio of predators to producers and the amount of resources that predators waste are minimized, aggregate consumption is maximized. In addition in the Rawlsian equilibrium, predation equalizes the consumption of the privileged and the unprivileged.

Argentina and the World Capital Market: Saving, Investment, and International Capital Mobility in the Twentieth Century

Alan M. Taylor

NBER Working Paper No. 6302

December 1997

JEL Nos. F41, F43, N16, N26, O11, O54

This paper is concerned with integration between the economies of the core and periphery in the twentieth century world capital market. It proceeds with some general observations and a special focus on the case of Argentina. I argue that understanding the changing relations in international capital markets offers important insights into the growth and development process, especially for the countries of the periphery. Moreover, studying the extent of market integration in history informs current conditions in the relationship between capital-scarce economies, like Argentina, and the global capital market as a whole. Looking to the future, the repercussions of economic reform and demographic change suggest likely implications for future saving, investment, and international capital flows.

The Effect of Means-Tested Income Support for the Elderly on Pre-Retirement Saving: Evidence from the SSI Program in the U.S.

David Neumark and Elizabeth Powers

NBER Working Paper No. 6303

December 1997

JEL Nos. I38, J14, J26

We attempt to draw inferences about potential behavioral responses to means-tested income support for the elderly by examining the effects on saving of the Supplemental Security Income (SSI) program for the aged in the United States. Part of the SSI program provides payments to the poor elderly, thus operating as a means-tested public retirement program. The federal government sets eligibility criteria and benefit levels for the federal component of the program, but many states supplement federal SSI benefits substantially. We exploit the state-level variation in SSI benefits to estimate the effects of SSI on saving. We use data from selected

waves of the 1984 Survey of Income Program Participation (SIPP), and find that high SSI benefits reduce saving among households with heads who are approaching the SSI eligibility age and are likely to participate in the program.

Patent Buy-Outs: A Mechanism for Encouraging Innovation

Michael Kremer

NBER Working Paper No. 6304

December 1997

JEL Nos. O31, O30, N40

In 1839, the French government purchased the patent on the Daguerrreotype process and placed it in the public domain. This paper examines one mechanism under which governments would use an auction to estimate the private value of patents, and then offer to buy out patents at this private value times a fixed markup. The markup would correspond to the typical estimated ratio of the social and private values of inventions: for example, two. Most patents purchased would be placed in the public domain. But in order to induce bidders to reveal their valuations, a few patents would be sold to the highest bidder. These patent buy-outs could eliminate monopoly price distortions and incentives for wasteful reverse engineering, while raising private incentives for original research. However, patent buyouts are potentially vulnerable to collusion. Patent buyouts may be particularly appropriate for pharmaceuticals.

Are Public Housing Projects Good for Kids?

Janet Currie and Aaron Yelowitz

NBER Working Paper No. 6305

December 1997

JEL Nos. H5, I3, J0, R0

One of the goals of federal housing policy is to improve the prospects of children in poor families. But little

research has been conducted into the effects on children of housing programs, perhaps because it is difficult to find datasets with both information about participation and interesting measures of outcome. This paper combines data from several sources in order to provide a first look at the effect of participation in public housing projects on housing quality and on the educational attainment of children.

We use administrative data from the Department of Housing and Urban Development to impute the probability that a Census household lives in a public housing project. We find that a higher probability of living in a project is associated with poorer outcomes. We then use two-sample instrumental variables (TSIV) techniques to combine information on the probability of living in a project, based on the 1990 to 1995 Current Population Surveys, with information on outcomes that we obtained from the 1990 Census. The common instrument in both samples is an indicator that is set equal to one if the household is entitled to a larger housing project unit because of the sex composition of the children in the household. Those families entitled to a larger unit are 24 percent more likely to live in projects. After controlling for omitted variables bias using TSIV, we find that project households are less likely to suffer from overcrowding and less likely to live in high-density complexes. Project children are also 12 to 17 percentage points less likely to have been held back in school one or more grades, although this effect is confined to boys. Thus, most families do not face a tradeoff between housing quality and child outcomes: the average project improves both.

Central Bank Policy Rules: Conceptual Issues and Practical Considerations

Stephen G. Cecchetti

NBER Working Paper No. 6306

December 1997

JEL Nos. E52, E58

The design of rules for central bank policy has been a subject of increasing interest to many monetary economists. This essay first presents an analytical structure in which a policymaker is presumed to formulate a rule based on the solution to an optimal control problem, and then to examine a number of issues that are germane to the current debate on the nature of such rules. These issues include the implication for policy-making of the slope of the output-inflation variability frontier, the importance of various types of uncertainty, the consequences of a zero nominal interest rate floor, and the possible reasons for interest rate smoothing.

Although this essay is intended to raise, rather than resolve, key questions concerning policy rules, it does offer fairly compelling evidence on one point: the potential consequences of the move by many central banks toward some form of price-level or inflation targeting. In adopting such an approach, central banks implicitly are changing the relative importance of output and inflation variability in their objective function. The robustness of the policy rule, however, may depend on the shape of the output-inflation variability tradeoff. The data indicate that this tradeoff is extremely steep: small decreases in inflation variability are associated with very large increases in output variability. This finding suggests that pure inflation targeting may have very undesirable side effects.

Welfare and Macroeconomic Interdependence

Giancarlo Corsetti and Paolo Pesenti

NBER Working Paper No. 6307

December 1997

We develop a simple choice-theoretic model for carrying out welfare analyses of the international transmission of monetary and fiscal poli-

cies. The model can be solved in closed form and illustrated in terms of the simplest graphical apparatus, so as to provide the analysis of macroeconomic interdependence, structural spillovers, policy links, and strategic complementarities with rigorous but intuitive micro-foundations. In contrast with the traditional literature, our findings emphasize the positive externalities of foreign monetary expansions and foreign fiscal contractions on domestic welfare, while highlighting the ambiguous effects on welfare of domestic policy shocks.

Social Security and Retirement in Canada

Jonathan Gruber

NBER Working Paper No. 6308

December 1997

JEL Nos. J14, J26, H55

In Canada, government transfers to older persons are one of the largest and fastest growing components of the government budget. I provide an overview of the interaction between these transfer programs and retirement behavior. I begin by documenting historical trends in labor force participation and program receipt, and contemporaneous patterns of work and income receipt for the current cohort of older persons. I then describe the structure of this system of Canadian transfer programs. Finally, I present the results of a simulation model which measures the implicit tax/subsidy rate on work after age 55 within this system. I find that, for married male workers, there are modest taxes on work through age 64 which rise to fairly high levels thereafter. But these taxes are substantially lower for single workers, since they do not have wives who are eligible for means-tested transfers, and for workers with other substantial sources of income, since the family is not at all eligible for means-tested transfers.

Corporate Governance

Luigi Zingales

NBER Working Paper No. 6309

December 1997

JEL No. G3

This essay summarizes my own personal view of what corporate governance is about. I argue that it makes sense to discuss corporate governance only in an incomplete-contract world. In this world, the notion of corporate governance is intrinsically related to the definition of the firm. In this respect, I review the shortcomings of the existing definitions of the firm and the possible applications of the idea that the firm is a "nexus of specific investments" introduced by Rajan and Zingales [1997]. I conclude by discussing the limitations of the incomplete contracts approach to corporate governance.

Sharp Reductions in Current Account Deficits: An Empirical Analysis

Gian Maria Milesi-Ferretti and Assaf Razin

NBER Working Paper No. 6310

December 1997

JEL Nos. F32, F34

We study the determinants and consequences of sharp reductions in current account imbalances (reversals) in low- and middle-income countries. We try to answer two questions: First, what triggers reversals? Second, what factors explain the costliness of reversals? We find that both domestic variables, such as the current account balance, openness, and the level of reserves, and external variables, such as the terms of trade shocks, U.S. real interest rates, and growth in industrial countries, play an important role in explaining reversals in current account imbalances. We also find that countries with a less appreciated real exchange rate, higher investment, and openness prior to the reversal tend to grow faster after a reversal occurs.

Managing the Public Debt in Fiscal Stabilizations: The Evidence

Alessandro Missale, Francesco Giavazzi, and Pierpaolo Benigno

NBER Working Paper No. 6311

December 1997

JEL Nos. E31, E41, E43, G12

This paper provides evidence on the behavior of public debt managers during fiscal stabilizations in OECD countries over the last two decades. We find that debt maturity tends to lengthen: the more credible the program; the lower the long-term interest rate; and the higher the volatility of short-term interest rates. We show that this debt issuing strategy is consistent with optimal debt management if information between the government and private investors is asymmetric, as is usually the case at the outset of a stabilization attempt, when private investors may lack full confidence in the announced budget cuts.

Foreign Speculators and Emerging Equity Markets

Geert Bekaert and Campbell R. Harvey

NBER Working Paper No. 6312

December 1997

JEL Nos. F3, G0, G1

A number of countries have delayed the opening of their capital markets to international investment because of reservations about the impact of foreign speculators on expected returns and market volatility. We propose a cross-sectional time-series model that attempts to assess the impact of market liberalizations—in the form of offering depository receipts, country funds, and other financial instruments, in an extranational market—on the cost of capital and market volatility in emerging equity markets. We also examine the

impact of capital market liberalizations on the correlation between emerging equity market returns and the world market return. Our empirical approach is designed to control for other economic events which might confound the impact of foreign speculators on local equity markets. Whatever the empirical specification, the cost of capital always decreases after capital market liberalization, but the effect is economically and statistically weak. The effects on volatility and correlation are less robust.

Unequal at Birth: A Long-Term Comparison of Income and Birth Weight

Dora L. Costa

NBER Working Paper No. 6313

December 1997

JEL Nos. I12, N30

I demonstrate that although socioeconomic differences in birth weight have always been fairly small in the United States, they have narrowed since the beginning of this century. I argue that maternal height, and therefore the mother's nutritional status during her growing years, accounted for most of the socioeconomic differences in birth weight in the past, but not today. This implies that in the past health inequality was transmitted across generations. I also show that children born at the beginning of this century compared favorably to modern populations in terms of birth weights, but suffered higher fetal and neonatal death rates because obstetrical and medical knowledge was poorer. In addition, by day ten of life, children of the past were at a disadvantage relative to children today because "best practice" resulted in insufficient feeding. The poor average health of past populations therefore originated in part in the first days of life.

NIMBY Taxes Matter: State Taxes and Interstate Hazardous Waste Shipments

Arik Levinson

NBER Working Paper No. 6314

December 1997

JEL Nos. H73, H23

This paper examines the extent to which state taxes have inhibited interstate transport of hazardous waste for disposal in the United States. I use panel data from the Toxics Release Inventory (TRI) and the Resource Conservation and Recovery Act (RCRA) on interstate shipments of waste, and analyze them in conjunction with a set of state characteristics, including hazardous waste disposal taxes and disposal capacity. I use four approaches to deal with the potential endogeneity of taxes and unobserved heterogeneity among states: a "natural experiment" based on the retaliatory nature of some state tax laws; a fixed-effects model; a two-stage least squares estimator; and a reinterpretation of the coefficient on the distance among states. I conclude that hazardous waste taxes are a statistically and economically significant deterrent to interstate waste transport, that taxes are being imposed by large-capacity and large-import states, and that these taxes therefore have had a decentralizing effect on the national pattern of hazardous waste transport and disposal.

Inventories

**Valerie A. Ramey and
Kenneth D. West**

NBER Working Paper No. 6315

December 1997

JEL Nos. E22, E32

We review and interpret recent work on inventories, emphasizing empirical and business cycle aspects. We begin by documenting two empirical regularities about inventories: that inventories move procyclically; and that inventory movements are

quite persistent, even conditional on sales.

To explain the two facts, we present a linear-quadratic model. The model can rationalize the facts in a number of ways, but two stylized explanations have the virtue of relative simplicity and support from a number of papers. Both assume that there are persistent shocks to demand for the good in question, and that the marginal production cost curve slopes up. The first explanation also assumes that there are highly persistent shocks to the cost of production. The second assumes that there are strong costs of adjusting production and a strong accelerator motive.

However, research to date has not reached a consensus on whether one of these two, or some third alternative, provides a satisfactory explanation of inventory behavior. We suggest several directions for future research that promise to improve our understanding of inventory behavior and thus of business cycles.

After Chile, What? Second- Round Pension Reforms in Latin America

**Olivia S. Mitchell and
Flávio Ataliba Barreto**

NBER Working Paper No. 6316

December 1997

JEL Nos. J26, J14, H55, G23

The apparent success of Chile's pension reform catalyzed a number of subsequent reforms in sister Latin American nations. The "Chilean model" now has captured the attention of policymakers and researchers in the OECD as well. In this paper, we identify six critical elements of old-age pension reform, and examine how these elements differ across the Chilean reform, and in several other Latin nations that followed in Chile's footsteps. We emphasize how these other Latin American nations adopted different mechanisms to

restructure their old-age pension systems, and we highlight available evidence on the performance of the system in each case.

Myopia and Inconsistency in the Neoclassical Growth Model

Robert J. Barro

NBER Working Paper No. 6317

December 1997

JEL Nos. O40, E21

I modify the neoclassical growth model to allow for a varying rate of time preference. If the household cannot commit on future choices of consumption, and if utility is logarithmic, then the equilibrium will resemble the standard results of the neoclassical model. In this solution, the effective rate of time preference is high, but constant. Although this model has potentially important implications for institutional design and other policies—because households would benefit from an ability to commit future consumption—there is a sense in which the results are observationally equivalent to those of the conventional model. When I extend the framework to allow for partial ability to commit, some testable hypotheses emerge concerning the link between this ability and the rates of saving and growth. I obtain steady-state results for general concave utility functions, and work out some properties of the dynamic paths for the case of isoelastic utility.

Unions and Managerial Pay **John DiNardo, Kevin Hallock, and Jörn-Steffen Pischke**

NBER Working Paper No. 6318

December 1997

JEL Nos. J31, J44, J51

Unions compress the wage distribution among workers covered by union contracts. We ask whether unions also have an effect on the

managers of unionized firms. To this end, we collect and assemble data on unionization and managerial pay within firms and industries in the United States and across countries. Generally, we find a negative correlation between executive compensation and unionization in our cross-section data, but no relationship between changes in unionization and the growth of compensation of executives over time. Using data on NLRB elections, we find that a loss of union members attributable to decertification elections is associated with higher CEO pay, although our estimates are imprecise. With CPS data, we consistently find that where unions are stronger, fewer managers are employed.

Open-Economy Macroeconomics: Developments in Theory and Policy **Maurice Obstfeld**

NBER Working Paper No. 6319
December 1997
JEL No. F41

This paper surveys recent research in open-economy macroeconomics, using questions raised by European economic and monetary unification to guide the topics discussed. A striking empirical regularity is the tendency for changes in the nominal exchange rate regime to systematically affect the variability of nominal and real exchange rates. This regularity (which disappears in high-inflation conditions) can be explained by sticky-price theories or by models of asset-market liquidity effects. But plausible liquidity models have difficulty generating enough persistence (in output and real exchange rates, in particular) to match the data. Thus the macroeconomic costs of giving up the exchange-rate realignment option, emphasized in Mundell's optimum currency area concept, seem empirically relevant. I discuss

other possible costs of currency unification that are associated with a reduced number of asset markets. On the benefit side, my theories of the efficiencies attributable to a common currency remain unsatisfactory, despite recent advances. A key motivation for the choice of a common currency rather than a fixed exchange rate among national currencies is the fear of speculative attack. I conclude by showing how self-fulfilling currency crises can occur, and describe recent progress in narrowing the range of multiple equilibriums in adjustable-peg regimes.

Volatility and Financial Intermediation

**Joshua Aizenman and
Andrew Powell**

NBER Working Paper No. 6320
December 1997
JEL Nos. F32, F34, E44

Following the Tequila period, its after effects in Latin America, and recent events in South East Asia, the effect of volatility on emerging market economies has become an important topic of research. The domestic financial intermediation process is being advanced as one of the most important transmission mechanisms. At the same time, there has been continued interest in the issues of imperfect information and rationing in credit markets. In this paper, we consider an economy where risk neutral banks provide intermediation services and risk neutral producers demand credit to finance their working capital needs. Our model blends costly state verification with imperfect enforcement power. In this context of costly financial intermediation, we show that a weak legal system combined with high costs of information verification leads to large, first-order effects of volatility on production, employment, and welfare. A calibration illustrates that the semi-elasticity of welfare with respect to

volatility is less than -1 for reasonable parameter values (that is, a 1 percent increase in the coefficient of variation of productivity shocks would reduce welfare by more than 1 percent). We suggest that legal and information problems in the credit market may then underlie why volatility has profound effects on emerging market economies.

Market Forces and Sex Discrimination

**Judith K. Hellerstein,
David Neumark, and
Kenneth R. Troske**

NBER Working Paper No. 6321
December 1997
JEL Nos. J71, J16, J24

We report new evidence on the existence of sex discrimination in wages and whether competitive market forces act to reduce or eliminate discrimination. Specifically, we use plant- and firm-level data to examine the relationships among profitability, changes in growth and ownership, product market power, and the sex composition of a plant or firm's workforce. Our strongest finding is that, among plants with high levels of product market power, those that employ relatively more women are more profitable. No such relationship exists for plants with apparently low levels of market power. This is consistent with sex discrimination in wages in the short run in markets where plants have product market power. We also examine evidence on the longer-run effects of market forces on discrimination, asking whether discriminatory employers with market power are punished over time through lower growth than non-discriminatory employers, or whether discriminatory employers are bought out by non-discriminators. We find little evidence that this occurs over a five-year period, as growth and ownership changes for plants with market power are generally not

significantly related to the sex composition of a plant's workforce.

Regions, Resources, and Economic Geography: Sources of U.S. Regional Comparative Advantage, 1880–1987

Sukchoo Kim

NBER Working Paper No. 6322

December 1997

JEL Nos. R12, F1

This paper estimates the Rybczynski equation matrix for the 20 two-digit U.S. manufacturing industries for various years between 1880 and 1987. As predicted by the standard general equilibrium theory of interregional trade, the regression estimates show that a consistent set of factor endowments explains a significant amount of the geographic distribution of manufacturing activities over time. Although these results do not rule out the importance of increasing returns, they do suggest certain limits on how increasing returns affect U.S. economic geography.

How the Changing Market Structure of U.S. Higher Education Explains College Tuition

Caroline M. Hoxby

NBER Working Paper No. 6323

December 1997

This paper presents theoretical and empirical evidence demonstrating how the changing market structure of American higher education from 1940 to the present affected college prices and quality. Over this period, the market for baccalaureate education became significantly more competitive, as it was transformed from a collection of local autarkies to a nationally integrated market. I demonstrate that the results of increased competition were what indus-

trial organization models (with product differentiation and students being both consumers of, and inputs into, higher education) would predict: higher average college quality and tuitions; greater between-college variation in tuition and student quality; less within-college variation in student quality; higher average subsidies to students; and greater between-college variation in subsidies. Changing market structure can explain real tuition increases of approximately 50 percent for selective private colleges. I use panel data from 1940 to 1991 on 1121 baccalaureate-granting colleges, including data on students' home residences, for this study.

A Unified Theory of Underreaction, Momentum Trading, and Overreaction in Asset Markets

Harrison Hong and Jeremy C. Stein

NBER Working Paper No. 6324

December 1997

We model an asset market populated by two groups of boundedly rational agents—"newswatchers" and "momentum traders"—each of whom can process only a subset of all available information. The bounded rationality of the newswatchers creates a tendency for prices to underreact to private information in the short run. This underreaction in turn means that the momentum traders can make money by chasing trends. However, if they are restricted to following simple (that is, univariate) strategies, their best attempts at arbitrage, although profitable, inevitably must lead to overreaction at long horizons. In addition to providing a unified account of asset market under- and overreactions, the model generates a number of distinctive testable implications.

The Central Tendency: A Second Factor in Bond Yields

Pierluigi Balduzzi, Sanjiv Ranjan Das, and Silverio Foresi

NBER Working Paper No. 6325

December 1997

JEL No. G12

We assume that the instantaneous riskless rate reverts towards a central tendency which, in turn, is changing randomly over time. As a result, current short-term rates are not sufficient to predict future short-term rate movements, as would be the case if the central tendency were constant. However, since longer-maturity bond prices incorporate information about the central tendency, longer-maturity bond yields can be used to predict future short-term rate movements. We develop a two-factor model of the term structure which implies that a linear combination of any two rates can be used as a proxy for the central tendency. Based on this central tendency proxy, we estimate a model of the one-month rate that performs better than models which assume the central tendency to be constant.

Pecuniary Incentives to Work in the U.S. During World War II

Casey B. Mulligan

NBER Working Paper No. 6326

December 1997

I argue that changes in workers' budget sets cannot explain the dramatic increases in civilian work in the United States during World War II. Although money wages grew during the period, wartime aftertax real wages were lower than either before or after the war. Evidence from the 1940s also appears to be inconsistent with other pecuniary explanations, such as wealth effects of government policies, intertemporal substitution induced by asset prices, unfulfilled expectations, and changes in the

nonmarket price of time. Although untested and relatively undeveloped, nonpecuniary models of behavior are tempting explanations for wartime work.

Whither the World Bank and the IMF?

Anne O. Krueger

NBER Working Paper No. 6327

December 1997

JEL No. F33

On their fiftieth anniversary, the International Monetary Fund and the World Bank were reviewed extensively, both to mark the occasion and to consider, often critically, their current roles and performance. This paper reviews the functions of the two institutions, in light of their evolution over the past 50 years and of changes in the international economic system. It then evaluates and assesses some of the criticisms and proposals for reform of the two institutions.

The Determinants of Child Care Workers' Wages and Compensation: Sectoral Difference, Human Capital, Race, Insiders and Outsiders

H. Naci Mocan and Deborah Viola

NBER Working Paper No. 6328

December 1997

JEL Nos. J13, J31, J41, J44, J51, L3, J24

This paper investigates the determinants of wages and compensation for teachers and aides in child care centers. Nonprofit status has no across-the-board impact on wages. The extent of the wage premium enjoyed by some nonprofit workers depends on the category of the nonprofit center, the occupation of the workers, and their race. The rate of return to an additional year of tenure is 2 percent for both teachers and aides; for prior experience, it is 1 percent for teachers and zero for aides.

An additional year of general education results in a 5 percent increase in teacher wages, and a 2.5 percent increase in aide wages. Specialized training influences teacher wages, but has less impact on aide wages. Unionization has a large impact on both wages and compensation of teachers and aides. Alternative wages of the workers are related positively to teacher and aide wages. An increase in local unemployment decreases aides' wages, but has a positive impact on the teachers' wages. There is evidence of profit sharing in the case of aides, but not teachers. An increase in center size raises teacher wages.

This body of evidence indicates that both teacher and aide remuneration have non-competitive flavors, where the case is more compelling for aides.

Political Economics and Macroeconomic Policy

Torsten Persson and Guido Tabellini

NBER Working Paper No. 6329

December 1997

JEL Nos. E5, E6, H2, H3, O1

This paper surveys the recent literature on the theory of macroeconomic policy. We study the effect of various incentive constraints, such as lack of credibility, political opportunism, political ideology, and divided government, on the policymaking process. The survey is organized in three parts. Part I deals with monetary policy in a simple Phillips curve model: it covers credibility issues, political business cycles, and optimal design of monetary institutions. Part II deals with fiscal policy in a dynamic general equilibrium set up: the main topics are credibility of tax policy and political determinants of budget deficits. Part III studies economic growth in models with endogenous fiscal policy.

Has Job Stability Declined Yet? New Evidence for the 1990s

David Neumark, Daniel Polsky, and Daniel Hansen

NBER Working Paper No. 6330

December 1997

JEL Nos. C80, J21, J63

In earlier work, we examined the evolution through the 1980s of job stability in U.S. labor markets, using data assembled from a sequence of Current Population Survey tenure supplements. We found little or no change in aggregate job stability in the U.S. economy. In addition, older and more-tenured workers experienced increases in job stability in the latter part of the 1980s.

In this paper, we update the evidence on changes in job stability through the mid-1990s, using recently-released CPS data for 1995 that parallel the earlier job tenure supplements. Updating the evidence from systematic random samples of the population and workforce through this period is especially important, because the media have painted a particularly stark picture of declining job stability in the 1990s.

In the aggregate, there is some evidence that job stability declined modestly in the first half of the 1990s. Moreover, the relatively small aggregate changes mask rather sharp declines in stability for workers with more than a few years of tenure. Nonetheless, the data available up to this point do not support the conclusion that the downward shift in job stability for more-tenured workers, and the more modest decline in aggregate job stability, reflect long-term trends.

The Careers of Modern Artists: Evidence from Auctions of Contemporary Paintings

David W. Galenson

NBER Working Paper No. 6331

December 1997

JEL No. J24

Using transactions from fine art auctions for 42 leading American contemporary artists, I estimate the relationship between the value of a painting and the artist's age at the date of its creation. I show that artists born before 1920 were likely to have done their most valuable work late in their careers, while artists born in the 1920s and 1930s were more likely to have done their most valuable work at an early age. Comparing these results with evidence drawn from art history textbooks and museum exhibitions indicates that these artists' most valuable work also has been the most highly regarded by scholars. I argue that the shift across generations in the shape of these artists' age-price profiles was a result of both the evolution of modern painting and a growth in the demand for contemporary American art during the 1950s and 1960s.

Hong Kong's Business Regulation in Transition

Changqi Wu and Leonard K. Cheng

NBER Working Paper No. 6332

December 1997

JEL Nos. L43, L51, L94, L96

The transition of Hong Kong's main economic activities from manufacturing to services is accompanied by gradual changes in the regulatory regimes for monopolies. The local telecommunication services industry has been liberalized; deregulation of public transport is taking shape; and the schemes of control for electricity suppliers are candidates for reform. In this paper, we review the evolu-

tion of business regulation in Hong Kong, analyze the salient features of its scheme of control regulation, and evaluate the impact of transition from regulation to competition. To sharply contrast the difficulties of the traditional approach to regulation with the benefits of introducing competition, we focus on the cases of electricity and telecommunications. We also discuss the direction for future changes.

What Happens When You Tax the Rich? Evidence from Executive Compensation

Austan Goolsbee

NBER Working Paper No. 6333

December 1997

JEL No. H24

This paper reexamines the responsiveness of taxable income to changes in marginal tax rates, using detailed compensation data on several thousand corporate executives from 1991 to 1995. The data confirm that the higher marginal rates of 1993 led to a significant decline in taxable income. Indeed, this small group of executives can account for as much as 20 percent of the aggregate change in wage and salary income for the million richest taxpayers, and one person alone can account for more than 2 percent. The decline, however, is almost entirely a short-run shift in the timing of compensation, rather than a permanent reduction in taxable income. The short-run elasticity of taxable income with respect to the net-of-tax share exceeds one, but the elasticity after one year is at most 0.4 and probably close to zero. The response comes almost entirely from a large increase in the exercise of stock options in the year before the tax change, followed by a decline in the year of the tax change, and the change is concentrated among executives at the top of the income distribution. Executives without stock

options show six times less responsiveness to taxation. Other types of compensation, such as salary and bonus or nontaxed income, are either not responsive to tax rates or not large enough to make a difference. The estimated elasticities indicate that the dead weight loss of recent tax increases was around 15 to 25 percent of the revenue generated.

The Mexican Peso Crisis: How Much Did We Know? When Did We Know It?

Sebastian Edwards

NBER Working Paper No. 6334

December 1997

JEL Nos. F3, F4, O54, O23

The Mexican crisis of 1994 raised a number of questions, throughout the world, regarding the sustainability—and even the merits—of the market oriented reform process in Latin America and other regions. Understanding the way events unfolded in Mexico during the early 1990s continues to be fundamentally important for assessing the mechanics of currency crises. More importantly, perhaps, the eruption of the East Asian currency crises in the summer and fall of 1997 has raised the question of whether the lessons from Mexico indeed have been learned by policymakers, private sector analysts, and international civil servants. More specifically, as a result of the recent events in South East Asia, many observers have argued that the international financial organizations—the IMF and the World Bank—and the governments of the advanced countries have failed to revamp the early warning system that was supposed to prevent a repetition of a Mexico-style crisis. This paper analyzes the causes behind the Mexican crisis, emphasizing the role of capital inflows, inflationary inertia, and real exchange rate overvaluation. I also ask a number of questions regarding the predictability of the crisis: Should Wall

Street analysts have known that things were getting out of hand? And if they did, why didn't they alert their clients? And, how much did officials at the U.S. Treasury know about the depth of the Mexican problems? What was the role of the media? I conclude that although the U.S. Treasury was fully aware of what was going on, most private sector analysts were unaware of the seriousness of the situation.

Economic Integration and Convergence: U.S. Regions, 1840–1987

Sukchoo Kim

NBER Working Paper No. 6335

December 1997

JEL Nos. N31, N32, O40, R12, F1

Despite the recent inroads made by models of interregional trade based on external economies, the analysis of the long-run trends in U.S. regional specialization in agriculture, manufacturing, wholesale trade, retail trade, services, and all economic activities indicate that these trends are more consistent with explanations based on the neoclassical Heckscher-Ohlin model. Furthermore, while the long-run trends in U.S. regional industrial structures do not explain all the variations in regional income per capita, they play an important role in causing U.S. regional incomes to diverge and then converge between the nineteenth and the twentieth centuries.

A Model of Endogenous Fiscal Deficits and Delayed Fiscal Reforms

Andrés Velasco

NBER Working Paper No. 6336

December 1997

JEL Nos. E6, H3, H4, H6, H7

This paper develops a political-economic model of fiscal policy, in

which government resources are a "common property" out of which interest groups can finance expenditures on their preferred items. This setup has striking macroeconomic implications. First, fiscal deficits and debt accumulation occur even when there are no reasons for intertemporal smoothing. Second, those deficits can be eliminated through fiscal reform, but such a reform may only take place after a delay, during which government debt is built up.

The Estate Tax and After-Tax Investment Returns

James Poterba

NBER Working Paper No. 6337

December 1997

JEL Nos. H24, J14

This paper explores the effect of estate and gift taxes on the aftertax rate of return earned by savers. The estate tax affects only a small fraction of households—taxable decedents represented only 1.4 percent of all deaths in 1995—but the affected households account for a substantial fraction of household net worth. The estate tax can be viewed as a tax on capital income, with the effective rate depending on the statutory tax rate as well as the potential taxpayer's mortality risk. Because mortality rates rise with age, the effective estate tax burden is greater for older than for younger individuals. The estate tax adds approximately 0.3 percentage points to the average tax burden on capital income for households headed by individuals between the ages of 50 and 59. For households headed by individuals between the ages of 70 and 79, however, the estate tax increases the tax burden on capital income by approximately 3 percentage points. The effects are even larger for older households.

The paper also explores the fraction of the net worth held by households that are subject to the estate tax

that could be transferred to the next generation with a program of "planned giving": using the \$10,000 per donor per donee exemption from the gift tax. While roughly one quarter of potentially taxable assets could be transferred in this way, the actual levels of *inter vivos* giving are much lower than the levels that one would expect if households were taking full advantage of this tax avoidance strategy.

Channeling Domestic Savings into Productive Investment under Asymmetric Information: The Essential Role of Foreign Direct Investment

Assaf Razin, Efraim Sadka, and Chi-Wa Yuen

NBER Working Paper No. 6338

December 1997

JEL Nos. F21, F35, H25, H30

Foreign direct investment (FDI) is a predominant form of capital flow to low- and middle-income countries with insufficiently developed capital markets. This paper analyzes the problem of channeling domestic savings into productive investment in the presence of asymmetric information between the managing owners of firms and other portfolio stakeholders. We emphasize the crucial role played by FDI in sustaining equity-financed capital investment for economies plagued by such information problems. Similar problems also exist for foreign portfolio debt flows. We identify how, in the presence of information asymmetry, different capital market structures may lead to foreign over- or underinvestment and to domestic under- or oversaving, and thus to inefficient equilibria. We show how corrective tax-subsidy policies, consisting of taxes on corporate income and on the capital incomes of both residents and non-residents, can restore efficiency.

Quantitative Implications of the Home Bias: Foreign Underinvestment, Domestic Oversaving, and Corrective Taxation

Assaf Razin, Efraim Sadka, and Chi-Wa Yuen

NBER Working Paper No. 6339

December 1997

JEL Nos. F21, F25, H25, H30

There is strong evidence about a home-court advantage in international portfolio investment. One explanation for the bias is an information asymmetry between domestic and foreign investors about the economic performance of domestic firms. This asymmetry causes two types of distortions: an aggregate production inefficiency, and a production-consumption inefficiency, leading to foreign underinvestment and domestic oversaving respectively. Such market failures are quite severe, slightly more so with equity flows than with debt flows. These inefficiencies nonetheless can be corrected by a mix of tax-subsidy instruments, consisting of taxes on corporate income and on the capital incomes of both residents and nonresidents. When only a partial set of instruments is available, however, the prescription for each tax instrument can change radically, and even may be reversed, although the welfare gains can be fairly substantial and sometimes close to the first best optimum. This partial set of instruments appears to be more effective in handling the market failure in the case of equity flows than in the case of debt flows.

NBER Historical Papers

The American Business Elite in Historical Perspective

Peter Temin

NBER Historical Paper No. 104

October 1997

Development of the American Economy

This paper replicates a classic study of the American business elite. The older study, done a half century ago, reported the composition of business leaders one hundred years ago. I have drawn a sample of business leaders today to discover how much the composition of the American business elite has changed. As in the earlier study, the business elite is compared to a sample of political leaders. I find that democratization of the business elite has progressed only slightly in the past century, nowhere near as much as democratization of the political elite. Despite the myriad things that have changed in America in the last century, the composition of the business elite appears recognizably the same.

Operations of "Unfettered" Labor Markets: Exit and Voice in American Labor Markets at the Turn of the Century

Price V. Fishback

NBER Historical Paper No. 105

November 1997

JEL Nos. N3, J3, K2

The American economy at the turn of the century offers an excellent opportunity for studying relatively unregulated labor markets. In this essay I discuss the operation of labor markets in the early 1900s. After examining the mobility of workers, the integration of geographically dispersed labor markets, and a case study of the extent of employer monopsony, I examine the extent to which workers received compensating differentials for workplace disamenities, and the extent to which competition among employers reduced discrimination. During this period, institutions including the company town, company union, and share cropping developed. I reexamine these institutions to determine

whether they were exploitative or instead helped to resolve problems with transactions costs. Finally, reformers pressed for workers' compensation and laws regulating women's hours, child labor, and workplace safety. I examine the impact of progressive legislation and discuss the political economy of its passage.

Historical Perspectives on the Economic Consequences of Immigration into the United States

Susan B. Carter and Richard Sutch

NBER Historical Paper No. 106

December 1997

JEL Nos. J61, N11, N12, N31, N32

This paper highlights the distinctive features of the theoretical approach of scholars who analyzed the impacts of mass migration into the United States in the two decades preceding World War I. Broadly speaking, this literature was couched in terms of the "aggregate production function," and emphasized advancing technology, and changes in productivity and factor proportions. There was also a focus on the close interrelatedness among the many diverse elements in the economy.

One notable difference between these historical studies and the recent literature on the impacts of immigration is that the current literature tends to concentrate only on the first-round consequences. It is easy to show that these will be harmful to resident workers who face direct competition. Economic historians writing about the earlier period of high immigration went beyond the first-round effects. Taking a long-run perspective, they identified many aspects of the mass immigration that were beneficial from the point of view of the resident population.

NBER Technical Papers

Horizon Length and Portfolio Risk

**Christian Gollier and
Richard J. Zeckhauser**

NBER Technical Working Paper No. 216
October 1997
JEL Nos. G11, G10, D81
Asset Pricing

We compare the attitude towards current risk of two expected-utility-maximizing investors who are identical except that the first investor will live longer than the second. In one of the models we consider, there are two assets at every period. The first asset has a zero sure return, whereas the second asset is risky without serial correlation of yields. It is often suggested that the young investor should purchase more of the risky asset than the old investor under such circumstances. We show that a necessary and sufficient condition to get this property is that the Arrow-Pratt index of absolute tolerance (T_u) be convex. If we allow for a positive risk-free rate, the necessary and sufficient condition is T_u convex, plus T_u

(0) = 0. It extends the well-known result that investors are myopic in this model if and only if the utility function exhibits constant relative risk aversion.

Cointegration and Long-Horizon Forecasting

**Peter F. Christoffersen and
Francis X. Diebold**

NBER Technical Working Paper No. 217
October 1997
JEL No. C5
Economic Fluctuations and Growth

We consider the forecasting of cointegrated variables and show that, at long horizons, nothing is lost by ignoring cointegration when forecasts are evaluated using standard multivariate measures of forecast accuracy. In fact, simple univariate Box-Jenkins forecasts are just as accurate. Our results highlight a potentially important deficiency of standard forecast accuracy measures—they fail to value the maintenance of cointegrating relationships among variables—and we suggest alternatives that explicitly do so.

Algorithms for Solving Dynamic Models with Occasionally Binding Constraints

**Lawrence J. Christiano and
Jonas D. M. Fisher**

NBER Technical Working Paper No. 218
October 1997
JEL Nos. C6, C63, C68
Economic Fluctuations and Growth

We describe and compare several algorithms for approximating the solution to a model in which inequality constraints occasionally bind. We then evaluate and compare their performance using various parameterizations of the single sector growth model with irreversible investment. We develop parameterized expectation algorithms which, on the basis of speed, accuracy, and convenience of implementation, appear to dominate the other algorithms.

NBER *Reporter*

NATIONAL BUREAU OF ECONOMIC RESEARCH

1050 Massachusetts Avenue
Cambridge, Massachusetts 02138-5398
(617) 868-3900

Address Correction Requested

Nonprofit Org.
U.S. Postage
Paid
Boston, MA
Permit No. 55932