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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 July 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.

NBER Working Papers

Interests, Institutions, and Ideology in the Republican Conversion to Trade Liberalization, 1934–1945

Douglas A. Irwin and Randall S. Kroszner

NBER Working Paper No. 6112
July 1997
JEL Nos. D72, D78, F13, N72
Development of the American Economy and International Trade and Investment

We investigate what factors explain significant changes in policy by studying how bipartisan support developed to sustain the Reciprocal Trade Agreements Act (RTAA) of 1934. The RTAA fundamentally transformed both the process and the outcome of U.S. trade policy: Congress delegated its authority over tariff-setting to the President, and the United States then moved sharply toward trade liberalization. The durability of this change was achieved only when the Republicans, long-time supporters of high tariffs who originally vowed to repeal the RTAA, began to support this Democratic initiative in the 1940s. In seeking to explain this conversion, we do not find an ideological shift among Republicans, but rather an increased sensitivity to export interests. The institutional structure of the RTAA itself may have been responsible for this shift. Our results suggest that analyzing changes in both institutional incentives and economic interests are important for understanding lasting change in economic policy.

Trade and the Transmission of Technology

Wolfgang Keller

NBER Working Paper No. 6113
July 1997
JEL Nos. O3, O4, F12, F2
International Trade and Investment and Productivity

I present a model of R and D-driven growth which predicts that technology, in the form of product designs and created through R and D investments, is transmitted to other domestic and foreign sectors by being embodied in differentiated intermediate goods. I present empirical results based on data from 13 manufacturing industries in eight OECD countries from 1970 to 1991.

I first confirm earlier findings that R and D expenditures are related positively to productivity levels. I estimate an elasticity of total factor productivity (TFP) with respect to own-industry R and D of between 7 percent and 17 percent. The receiving industry also benefits from other industries' technology investments, an effect which is at least in part attributable to trade in embodied technology. I find that the benefit derived from foreign R and D in the same industry is in the order of 50 percent to 95 percent of the productivity effect of own R and D. Further, for domestic interindustry technology flows, the results strongly suggest that trade in goods is not all that matters for technology transmission. I estimate that domestic, outside-industry R and D is one fifth to one half as effective in raising productivity as own-industry R and D for these industries.

The Medical Costs of The Young and Old: A Forty-Year Perspective

David M. Cutler and Ellen Meara

NBER Working Paper No. 6114
July 1997
Aging, Health Care, and Public Economics

In this paper, we examine the growth in spending on medical care by age over the past 40 years. We show that between 1953 and 1987, medical spending increased disproportionately for infants, those under the age of one, and the elderly, those aged 65 and above. Annual spending growth for infants was 9.8 percent, and growth for the elderly was 8.0 percent, compared to 4.7 percent for people aged 1–64. Within the infant and the elderly populations, excess spending growth was driven largely by more rapid growth of spending at the top of the medical spending distribution. Aggregate changes in outcomes for infants and the elderly are consistent with these changes in spending growth, but we do not present any causal evidence on this point.

Violations of the "Rules of the Game" and the Credibility of the Classical Gold Standard, 1880–1914

Michael D. Bordo and Ronald MacDonald

NBER Working Paper No. 6115
July 1997
JEL Nos. F31, F33, N23
Development of the American Economy, International Finance and Macroeconomics, and Monetary Economics

We examine the recently noted finding that the Classical gold standard represented a credible, well-behaved target zone system from the perspective of the well-documented failure of countries to play by the rules of the game in the Classical period. In particular, we test a hypothesis of Svensson [1994] that a credible target zone can confer a degree of independence in the operation of a country's monetary policy. We propose a number of ways of testing this proposition and implement them for a newly created monthly database over the period 1880–1913. We demonstrate that the Classical gold standard worked as predicted by Svensson's model. This would seem to have an important bearing on the kind of institutional framework required for a modern-day target zone (such as the Exchange Rate Mechanism of the European Monetary System) to function effectively and, in particular, to weather speculative attacks.

Taxed Avoidance: American Participation in Unsanctioned International Boycotts

James R. Hines, Jr.

NBER Working Paper No. 6116
July 1997
JEL Nos. F23, H87, F13
International Trade and Investment and Public Economics

American firms are subject to tax and civil penalties for participating in international boycotts (other than those sanctioned by the U.S. government). These penalties apply primarily to American companies that cooperate with the Arab League's boycott of Israel. The effectiveness of U.S. antiboycott legislation is reflected in the fact that American firms comply with only 30 percent of the 10,000 boycott requests they receive annually. The cross-sectional pattern is informative: the U.S. tax penalty for boycott participation is an increasing function of foreign tax rates, and reported compliance rates vary inversely with tax rates. Tax rate differences of 10 percent are associated with 6 percent differences in rates of compliance with boycott requests. This evidence suggests that U.S. antiboycott legislation significantly reduces the willingness of American firms to participate in the boycott of Israel, reducing boycott participation rates by as much as 15–30 percent.

Misconceptions and Political Outcomes

David Romer

NBER Working Paper No. 6117
July 1997
JEL No. D72
Economic Fluctuations and Growth, Monetary Economics, and Public Economics

A large recent literature shows that strategic interactions among actors with conflicting objectives can produce inefficient political decisions.

This paper investigates an alternative explanation of such decisions: if individuals' errors in assessing the likely effects of proposed policies are correlated, democratic decisionmaking can produce inefficient outcomes even in the absence of distributional conflicts or heterogeneous preferences. Choosing candidates from among the best informed members of the population does not remedy the problems created by such errors, but subsidizing information and then exposing representatives to information after their election do. Concentration of power has ambiguous effects. Finally, the presence of correlated errors tends to create multiple equilibriums in political institutions.

Why are Worker Cooperatives So Rare?

Michael Kremer

NBER Working Paper No. 6118
July 1997
JEL Nos. D23, J54
Labor Studies

I argue that worker cooperatives are prone to redistribution among members, and that this redistribution distorts incentives. I assume that employment contracts are incomplete. In the model, cooperative members pay in a capital contribution to purchase equipment. Then they receive "shocks" to ability. Each worker's (observable) output depends on ability and on effort, neither of which can be observed separately. After ability is realized, members vote on a wage schedule as a function of output. If the median member has less-than-average ability, then the cooperative will vote for a redistributive schedule, dulling incentives. Whereas workers in firms owned by outside shareholders would quit if the firm redistributed away from them, cooperative members will be reluctant to leave, since this entails forfeiting the dividends on their capital contribution. This model can explain why cooperatives typically have egalitarian wage policies.

Quantifying the Current U.S. Fiscal Imbalance

Alan J. Auerbach

NBER Working Paper No. 6119
August 1997
JEL No. H6
Public Economics

This paper considers the magnitude of the U.S. fiscal imbalance, as measured by the permanent changes needed to stabilize the national debt as a share of GDP. At present, even after recent improvements in forecast deficits, this imbalance stands at 5.3 percent of GDP, several times the magnitude of the current official deficit. The imbalance is primarily attributable to the growth of Medicare, Medicaid, and Social Security.

Addressing an imbalance of this size will require significant policy changes. Even if current projected reductions in other government spending occur, and policies are adopted to eliminate the estimated imbalance in OASDI and to balance the federal budget in 2002, an *additional* and immediate reduction in the primary deficit of 2.7 percent of GDP will be required to establish a feasible fiscal policy. Waiting to adopt policy changes will increase the size of the required annual reduction in the primary deficit.

How to Compete: The Impact of Workplace Practices and Information Technology on Productivity

Sandra E. Black and Lisa M. Lynch

NBER Working Paper No. 6120
August 1997
JEL Nos. D24, J24, J33, J51
Labor Studies

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

Estimation of Cross-Country Differences in Industry Production Functions

James Harrigan

NBER Working Paper No. 6121
August 1997
JEL Nos. F1, D24
International Trade and Investment

Many economists and policymakers are concerned about international differences in technology and labor quality, correctly seeing these issues as crucial to long-term growth in living standards. Typically, international trade economists assume that technological knowledge is the same in all countries, and that production processes exhibit constant returns to scale. An equivalent way of stating this assumption is that total factor productivity (TFP) for each industry is the same in every country. This paper contributes to a growing body of work which casts doubt on this hypothesis, finding large and persistent TFP differences across countries. I use a new dataset on prices, inputs, and outputs for a group of industrialized countries in the 1980s. In addition to calculating industry-specific TFP indexes over time and across countries, I use panel data techniques to examine the sources of the observed large TFP differences across countries. In particular, I examine two hypotheses to account for TFP differences: constant-returns-to-scale production with country-specific technological differences, and industry-level scale economies with identical technology in each country. The data support the constant returns/different technology hypothesis.

Strategies for Controlling Inflation

Frederic S. Mishkin

NBER Working Paper No. 6122
August 1997
JEL No. E5
Economic Fluctuations and Growth and Monetary Economics

This paper examines what strategies policymakers have used to both reduce and control inflation. It first outlines why a consensus has emerged that inflation needs to be controlled. Then it examines four basic strategies: exchange rate pegging; monetary targeting; inflation targeting; and the "just do it" strategy of preemptive monetary policy with no explicit nominal anchor. The discussion highlights the advantages and disadvantages of each strategy and sheds light not only on how disinflation might best be achieved, but also on how hard won gains in lowering inflation can be locked in.

Controlled Openness and Foreign Direct Investment

Joshua Aizenman and Sang-Seung Yi

NBER Working Paper No. 6123
August 1997
JEL Nos. F15, F21
International Trade and Investment

This paper explains why a developing country may adopt a partial reform under which foreign direct investments are controlled. We consider a country where the ruling elite (referred to as State capital) prevents the entry of "Foreign capital" and taxes the private sector before reform. The impetus to reform comes from the improved productivity of Foreign capital. The reform diminishes the ability of State capital to tax the private sector, but allows it to extract payment from Foreign capital for access to its markets. We show that the higher productivity of Foreign capital always increases the attractiveness of a partial reform, under which State capital can control the inflow of Foreign capital. In contrast, the higher productivity of Foreign capital can reduce the attractiveness of a full reform, under which the entry of Foreign capital is not regulated. Our analysis implies that, when the impetus to reform comes from improvements in Foreign productivity, State capital's exercise of control over Foreign capital's inflow may be a *necessary* condition for the reform to take place at all. In the absence of such a control, State capital may be reluctant to carry out the efficiency-enhancing reforms.

Dynamic Modeling of the Product Life Cycle in the Commercial Mainframe Computer Market, 1968–1982

Shane M. Greenstein and James B. Wade

NBER Working Paper No. 6124
August 1997
Productivity

This research investigates product life cycles in the commercial mainframe computer market. We show that empirical studies conducted at the product level are useful for investigating processes underlying product life cycles. We use hazard models with time-varying covariates to estimate the probability of product exit and Poisson models to estimate the probability of introduction. We measure the importance of different aspects of market structure, such as the degree of competitiveness, cannibalization, vintage, product niche, and firm effects. We find some evidence of a relationship between the determinants of product exit and product entry.

The Effect of U.S. Supreme Court Ruling *Sullivan v. Zebley* on Child SSI and AFDC Enrollment

A. Bowen Garrett and Sherry Glied

NBER Working Paper No. 6125
August 1997
JEL No. I18
Health Care and Health Economics

In 1990 in the case of *Sullivan v. Zebley*, the U.S. Supreme Court substantially relaxed the criteria whereby children became eligible for Supplemental Security Income (SSI) benefits. Since the ruling took effect, the number of children covered by SSI has almost tripled. Currently, nearly one million American children are receiving cash and medical benefits through SSI. Many of those newly enrolling in SSI were not previously eligible for cash and Medicaid benefits. Other new eligibles already had been receiving cash and Medicaid through AFDC.

This paper examines the extent of spillovers between the SSI and AFDC programs. We use the *Sullivan v. Zebley* expansion in child SSI enrollment to identify spillovers between the programs. We describe how a family's decision to participate in AFDC or SSI is likely to depend on the level of AFDC and SSI supplementation payments in a state. If the likelihood of SSI participation increases with the net financial gain of SSI relative to AFDC, child SSI participation over the period affected by *Zebley* is likely to be highest in states with low AFDC payments and high state SSI supplementation payments. Using difference-in-difference estimates based on state-level data on program participation and characteristics, we find that the increase in child SSI participation was significantly larger in low-AFDC states than in high-AFDC states. For SSI adults (a group unaffected by the *Zebley* decision), we find no effect of state AFDC payments on the increase in SSI participation over this period.

We use state-level data pre- and post-*Zebley* decision to obtain state fixed-effects estimates of the effects of the *Zebley* decision on SSI participation, AFDC participation, and total program participation. We find that *Zebley* increased SSI participation and total program participation by children. We find that *Zebley* increased child SSI participation more in states with lower AFDC payments and higher state SSI supplementation payments. These results suggest that families decide to participate in SSI on the basis of the net financial gain of SSI participation relative to AFDC participation. We attribute 43 percent of the *Zebley* increase in SSI to the SSI-AFDC benefit gap. We examine the effect of *Zebley* on the federal composition of child cash benefits. While the federal composition increased overall, it increased the least for states in the highest quintile of AFDC payments. We find that *Zebley* led to a decline in the employment rates of women with a high school education or less, and that this decrease was larger in states with higher AFDC payments.

Inflation Targeting: Lessons from Four Countries

Frederic S. Mishkin and Adam S. Posen

NBER Working Paper No. 6126
August 1997
JEL No. E5
Economic Fluctuations and Growth and Monetary Economics

In recent years, a number of central banks have announced numerical inflation targets as the basis for their monetary strategies. After outlining the reasons why such strategies might be adopted in the pursuit of price stability, this study examines the adoption, operational design, and experience of inflation targeting as a framework for monetary policy in the first three countries to undertake such strategies: New Zealand, Canada, and the United Kingdom. It also analyzes the operation of the long-standing German monetary targeting regime, which incorporated many of the same features as later inflation-targeting regimes. The key challenge for all of these monetary frameworks has been the appropriate balancing of transparency and flexibility in policymaking. This study finds that all of the targeting countries examined have maintained low rates of inflation and increased the transparency of monetary policymaking without harming the real economy through policy rigidity in the face of economic developments. A convergence of design choices on the part of targeting countries with regard to operational questions emerges from this comparative study, suggesting some lines of best practice for inflation-targeting frameworks.

Do Minimum Wages Fight Poverty?

David Neumark and William Wascher

NBER Working Paper No. 6127
August 1997
JEL Nos. J38, K3, J23
Labor Studies

The primary goal of a national minimum wage floor is to raise the incomes of poor or near-poor families with members in the workforce. However, estimates of employment effects of minimum wages tell us relatively little about whether they are likely to achieve this goal; even if the disemployment effects of minimum wages are modest, minimum wage increases could result in net income losses for poor families.

In this paper, we present evidence on the effects of minimum wages on family incomes from matched March CPS surveys, focusing in particular on the effectiveness of minimum wages in reducing poverty. The results indicate that over a one-to-two year period, minimum wages increase both the probability that poor families escape poverty and the probability that previously non-poor families fall into poverty. The estimated increase in the number of non-poor families that fall into poverty is larger than the estimated increase in the number of poor families that escape poverty, although this difference is not statistically significant. We also find that minimum wages tend to boost the incomes of poor families that remain below the poverty line.

The combined evidence indicates that in the wake of minimum wage increases, some families gain and others lose. On net, the various trade-offs created by increases in the minimum wage more closely resemble income redistribution among low-income families than income redistribution from high- to low-income families. Given these findings, it is difficult to make a distributional or equity argument for minimum wages.

Specification Analysis of Affine Term Structure Models

Qiang Dai and Kenneth J. Singleton

NBER Working Paper No. 6128
August 1997
Asset Pricing

This paper characterizes, interprets, and tests the over-identifying restrictions imposed in affine models of the term structure. Our analysis proceeds in three steps. First, we show that affine models can be categorized according to the different over-identifying restrictions they impose on δ, and the parameters of the diffusion matrices. Second, we show that this formulation is equivalent to a model in which there is a terraced drift structure with one of the state variables being the stochastic long-run mean of *r*. This equivalence allows direct comparisons of the substantive restrictions on the dynamics of interest rates imposed in CIR-style models and models in which the state variables are the stochastic long-run mean and volatility of *r*. Third, we compute simulated method-of-moments estimates of a three-factor affine term structure model, and test the over-identifying restrictions on the *joint distribution* of long- and short-term interest rates implied by extant affine models of *r*. We find that allowing for correlated factors is key to simultaneously describing the short and long ends of the yield curve. We interpret this finding in terms of the properties of the risk factors underlying term structure movements.

Measuring, Forecasting and Explaining Time Varying Liquidity in the Stock Market

Robert F. Engle and Joe Lange

NBER Working Paper No. 6129
August 1997
Asset Pricing

This paper proposes a new measure of market liquidity which directly measures the depth of the market: VNET. The measure is constructed from the excess volume of buys or sells during a market event defined by a price movement. Since this measure varies over time, it can be forecast and explained. Using TORQ data, we find that market depth varies positively but less than proportionally with past volume and negatively with the number of transactions. Both findings suggest that over time, high volumes are associated with an influx of informed traders and reduce market liquidity. High expected volatility as measured by the ACD model of Engle and Russell [1995] and wide spreads both reduce expected depth. If the asymmetric trades are transacted in shorter than expected times, the costs will be greater, giving an estimate of the value of patience.

Nonparametric Risk Management and Implied Risk Aversion

Yacine Aït-Sahalia and Andrew W. Lo

NBER Working Paper No. 6130
August 1997
JEL Nos. G12, G13, C14
Asset Pricing

Typical value-at-risk (VAR) calculations involve the probabilities of extreme dollar losses, based on the statistical distributions of market prices. Such quantities do not account for the fact that the same dollar loss can have two very different economic valuations, depending on business conditions. We propose a nonparametric VAR measure that incorporates economic valuation according to the state-price density associated with the underlying price processes. The state-price density yields VAR values that are adjusted for risk aversion, time preferences, and other variations in economic valuation. In the context of a representative agent equilibrium model, we construct an estimator of the risk-aversion coefficient that is implied by the joint observations on the cross-section of option prices and the time-series of underlying asset values.

Openness, Specialization, and Productivity Growth in Less Developed Countries

Diana Weinhold and James E. Rauch

NBER Working Paper No. 6131
August 1997
JEL Nos. F43, O40
International Trade and Investment

Many empirical studies have found a positive relationship between openness and growth in per capita GDP in less developed countries. Economists have produced many explanations for this correlation. However, the existing studies are consistent with *all* of these theories, and thus do not provide direct evidence in support of any one of them. Quah and Rauch show how increased openness to international trade can lead to increased specialization in models of endogenous growth through learning by doing. These models imply that increased specialization accelerates productivity growth by realizing dynamic economies of scale more fully. In order to test the hypothesis that specialization increases productivity growth in LDCs, we first define a Herfindahl index of production specialization for the manufacturing sector in 39 countries. We then present a series of dynamic panel regressions controlling for country fixed effects; these show that, for the less developed countries, the index of specialization is positively and significantly correlated with manufacturing productivity growth. We test the robustness of this correlation by including different variables that have been associated with growth in the regressions, such as openness, inflation, government spending, and investment.

Cohort Patterns in Canadian Earnings: Assessing the Role of Skill Premia in Inequality Trends

Paul Beaudry and David Green
NBER Working Paper No. 6132
August 1997
JEL No. J31
Labor Studies

This paper documents the pattern of change in age-earnings profiles across cohorts and evaluates its implications. Using synthetic cohorts from the Survey of Consumer Finances over the period 1971–93, we show that the age-earning profiles of Canadian men have been deteriorating for more recent cohorts as compared to older cohorts. We find this pattern for both high school- and university-educated workers. We find no evidence that the return to gaining experience has been increasing over time, nor do we find increased dispersion of earnings within cohorts. We view these findings as conflicting with the hypothesis that an increased skill-premium largely explains the observed increase in dispersion of male weekly earnings in Canada. When looking at the pattern for women, we find only minor differences in the age-earning relationships across cohorts.

Human Capital, Unemployment, and Relative Wages in a Global Economy

Donald R. Davis and Trevor A. Reeve
NBER Working Paper No. 6133
August 1997
JEL Nos. F1, E2, J2
International Trade and Investment

This paper develops a simple framework for examining human capital accumulation, unemployment, and relative wages in a global economy. It builds on the models of Davis [1997a, b] of trade between a flexible-wage America and a rigid-wage Europe. It adds to this a model of human capital accumulation based on Findlay and Kierzkowski [1983]. We examine a variety of comparative statics, including changes in educational capital and population, entry of new countries to the trading world, technical change, and a productivity slowdown. We derive the consequences for the skilled-to-unskilled wage gap, unemployment, and skill composition.

Social Security Programs and Retirement Around the World

Jonathan Gruber and David A. Wise
NBER Working Paper No. 6134
August 1997
Aging and Public Economics

The populations in all industrialized countries are aging rapidly and individual life expectancies are increasing. Yet older workers are leaving the labor force at younger and younger ages. In some countries, the labor force participation rates of 60-to-64-year-old men have fallen by 75 percent over the past three decades. This decline in labor force participation magnifies population trends, further increasing the number of retirees relative to the number of persons who are still working. Together these trends have put enormous pressure on the financial solvency of social security systems around the world. Ironically, the provisions of the social security systems themselves typically contribute to the withdrawal from the labor force.

This paper is a summary of the evidence on 11 industrialized countries. We distill the key conclusions from the collective findings of individual papers. Clearly there is a strong correspondence between the age at which benefits are available and departure from the labor force. Social security programs often provide generous retirement benefits at young ages. In addition, the provisions of these programs often imply large financial penalties on labor earnings beyond the social security early retirement age. Furthermore, in many countries, disability and unemployment programs effectively provide early retirement benefits before the official social security early retirement age. We conclude that social security program provisions indeed have contributed to the decline in the labor force participation of older persons, substantially reducing the potential productive capacity of the labor force. It seems evident that if the trend to early retirement is to be reversed, as almost surely will be dictated by demographic trends, then changing the provisions of social security programs that induce early retirement will play a key role.

Social Security and Retirement in The Netherlands

Arie Kapteyn and Klaas de Vos
NBER Working Paper No. 6135
August 1997
Aging and Public Economics

Compared to other industrialized countries, in the Netherlands the labor force participation of the elderly is very low. Moreover, it has fallen very fast over recent years. We discuss the incentives for employees to retire, arising from public schemes such as social security and disability insurance, and from private arrangements, such as early retirement and occupational pensions. In general, the generous replacement rates offered by these schemes act as powerful stimuli for retirement. Although Dutch research into the retirement effects of the earnings replacing schemes for the elderly was limited until the early 1990s, there is now a fast growing literature on this subject. This literature confirms the findings in our paper.

Social Security and Retirement in Spain

Michele Boldrin, Sergi Jimenez-Martin, and Franco Peracchi

NBER Working Paper No. 6136
August 1997
Aging and Public Economics

We describe the historical evolution and current organization of the Spanish Social Security (SS) system. We concentrate on the main public pension scheme for private employees in the manufacturing and service sector which covers the majority of Spanish workers. After describing the way in which pension and retirement decisions are regulated by this system, we try to compute the incentives to early retirement provided to different kinds of individuals. We show that the Spanish SS legislation generates strong incentives to retire early, and that Spanish workers tend to do so.

In particular, we find that pensions-induced incentives matter for the labor supply behavior of Spanish workers. While the Spanish system does not pay a particularly generous average pension relative to GDP per capita, it provides large minimum pensions to individuals with below average working histories and/or low wages. At the same time, the pension system provides workers who are earning average or above average salaries and have complete working histories with relatively weak financial gains from not retiring after the age of 60.

The combination of these features of the Spanish legislation seems to account well for the observed increase in the percentage of early retirees among Spanish pensioners during the 1990s.

Social Security, Occupational Pensions, and Retirement in Sweden

Mårten Palme and Ingemar Svensson

NBER Working Paper No. 6137
August 1997
Aging and Public Economics

This paper provides an overview of the Swedish social security system and its impact on individual retirement behavior. First we present some historical facts, as well as a more detailed description of the current situation, about the labor market behavior of older persons. Then we describe the social security system and the different occupational pension schemes, which have been of increasing importance. Finally, we discuss the results of a simulation in which we use the earnings paths of several representative workers to calculate the implicit tax (or subsidy) rate on additional work after age 55; the tax or subsidy is generated by the social security system in interaction with occupational pensions and income taxes, as well as housing allowances. We find that the observed labor market behavior of older men is in accordance with the economic incentives generated by the social security system, and in particular with the occupational pension scheme for blue collar workers.

Comparison Utility in a Growth Model

Christopher D. Carroll, Jody Overland, and David N. Weil

NBER Working Paper No. 6138
August 1997
JEL Nos. D91, E21, O40
Monetary Economics

This paper compares the dynamics of two general equilibrium models of endogenous growth in which agents have "comparison utility." In the "inward-looking" economy, individuals care about how their consumption in the current period compares to their consumption in the past (one way to describe this is "habit-formation" in consumption). In the "outward-looking" economy, individuals care about how their level of consumption compares with the consumption of others.

What if there is a negative shock to capital? In an endogenous growth model with standard preferences, there will be no effect on the saving rate or the growth rate of output. In both of the models that we consider, though, saving and growth will fall temporarily in response to the shock. The initial decline in saving and growth will be larger in the inward-looking case. However, since in the outward-looking case agents do not take into account the externality effect of their consumption, higher growth will lead to lower utility than in the inward-looking case.

Why Did the SSI Disabled Program Grow So Much? Disentangling the Effect of Medicaid

Aaron S. Yelowitz

NBER Working Paper No. 6139
August 1997
JEL Nos. H51, I18, I38
Health Care and Public Economics

The number of participants in the SSI program grew by 1.1 million from 1987 to 1993. This paper examines the role of Medicaid on the decision to participate in SSI. I use the rapid growth in average Medicaid expenditures as a proxy for their value. Ordinary-least-squares estimates of Medicaid's effect may be biased because of omitted variables bias and measurement error. Therefore, I apply two-stage least squares to estimate the effect of Medicaid, using average Medicaid expenditures for blind SSI recipients as an instrument. These estimates show that rising Medicaid expenditures significantly increased SSI participation among adults with low permanent incomes, explaining 20 percent of the growth.

Managed Care and the Growth of Medical Expenditures

David M. Cutler and Louise Sheiner

NBER Working Paper No. 6140
August 1997
Health Care and Public Economics

We use data across states to examine the relationship between HMO enrollment and medical spending. We find that increased managed care enrollment significantly reduces hospital cost growth. While some of this effect is offset by increased spending on physicians, generally we find a significant reduction in total spending as well. In analyzing the sources of hospital cost reductions, we find preliminary evidence that managed care has reduced the diffusion of medical technologies. States with high managed care enrollment were technology leaders in the early 1980s; by the early 1990s, those states were only average in their acquisition of new technologies. This finding suggests that managed care may have a significant effect on the long-run growth of medical spending.

What Drives Public Employment?

Dani Rodrik

NBER Working Paper No. 6141
August 1997
JEL Nos. H50, F40, O11
International Trade and Investment and Public Economics

Excessive levels of government employment are one of the most frequently made complaints about public-sector governance in developing economies. The explanation typically offered is that governments have used public-sector employment as a tool for generating and redistributing rents. This paper suggests an alternative hypothesis for government employment practices: relatively safe government jobs represent partial insurance against undiversifiable external risk faced by the domestic economy. By providing a larger number of "secure" jobs in the public sector, a government can counteract the income and consumption risk faced by the households in the economy. I show that countries that are greatly exposed to external risk have higher levels of government employment and have experienced faster rates of growth of government consumption. The basic finding on the (partial) correlation between government employment and exposure to external risk is robust against the alternative hypothesis, that government employment has been driven by considerations of rent-seeking and rent distribution.

Adapting to Circumstances: The Evolution of Work, School, and Living Arrangements Among North American Youth

David Card and Thomas Lemieux

NBER Working Paper No. 6142
August 1997
Labor Studies

We use comparable micro datasets for the United States and Canada to study the responses of young workers to the external labor market forces that have affected the two countries over the past 25 years. We find that young workers adjust to changes in labor market opportunities through a variety of mechanisms, including changes in living arrangements, changes in school enrollment, and changes in work effort. In particular, we find that poor labor market conditions in Canada explain why the fraction of youth living with their parents has increased in Canada relative to the United States recently. Paradoxically, this move back home also explains why the relative position of Canadian youth in the distribution of family income did not deteriorate as fast as in the United States.

The Objectives of the FDA's Office of Generic Drugs

Fiona Scott Morton

NBER Working Paper No. 6143
August 1997
JEL Nos. L51, L65
Industrial Organization

I use the variation in approval time for generic drugs to shed light on the objectives of the federal agency in charge of granting entry permission for these drugs: the FDA. Applications belonging to firms later found to have engaged in fraud or corruption were approved 9 months faster on average, controlling for other characteristics, than other applications. This indicates that illegal behavior was effective in reducing approval times. The FDA approved applications for large revenue markets faster; this is the only evidence that the agency is taking consumer surplus into account, but it is also consistent with a response to producer surplus and application quality. Order of entry into a drug market is not significant in predicting approval times because of the offsetting effects of social surplus and FDA learning. The FDA appears to avoid complaints from constituent firms by preserving the entry order of applications. FDA resources clearly affect approval times; this appears in the year effects after the generic scandal (much slower) and in the agency's use of slack provided by applications submitted before patent expiration. After the scandal, the FDA appears to care more about the risk inherent in a product and discounts a firm's prescandal technical experience. Overall, the results provide most support for an agency responding to bureaucratic preferences, complaints from constituent firms, and risk to consumers, rather than trying to maximize classic measures of social surplus (absent risk considerations).

Why the United States Led in Education: Lessons from Secondary School Expansion, 1910 to 1940

Claudia Goldin and Lawrence F. Katz

NBER Working Paper No. 6144
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JEL Nos. H4, I2, N3
Development of the American Economy and Labor Studies

The "second transformation" of U.S. education—the growth of secondary schooling—occurred swiftly in the early 1900s and placed the educational attainment of Americans far ahead of that in other nations for much of the twentieth century. Just 9 percent of U.S. youths had high school diplomas in 1910, but more than 50 percent did by 1940. By the mid-1950s the United States was 35 years ahead of the United Kingdom in the educational attainment of 14-to-17-year olds. What can explain the advance of secondary schooling in the United States, why differences in secondary schooling emerged across U.S. states and cities, and why America led the world in educational attainment for much of the twentieth century? Although we motivate the paper with international comparisons, the core of our analysis exploits the considerable cross-state, cross-city, and time-series variation within the United States.

The areas of the United States that led in secondary school education (the Far West, Great Plains, and parts of New England) were rich in income and wealth, had high proportions of elderly, and had relative equality of wealth or income. Given wealth, they also contained a low proportion of jobs in manufacturing and low percentages of immigrants and Catholics. Homogeneity of economic and social conditions, and the social stability of community, given a modicum of income or wealth, also fostered the extension of education to the secondary school level.

How Costly is Financial (not Economic) Distress? Evidence from Highly Leveraged Transactions that Became Distressed

Gregor Andrade and Steven N. Kaplan

NBER Working Paper No. 6145
August 1997
Corporate Finance

This paper studies 31 highly leveraged transactions (HLTs) of the 1980s that subsequently became financially distressed. At the time of distress, all the sample firms have operating margins that are positive and, in the majority of cases, greater than the median for the industry. Therefore, we consider these firms financially, not economically, distressed. The net effect of the HLT and financial distress is a slight increase in value: from pre-transaction to distress resolution, the sample firms experience a marginally positive change in (market- or industry-adjusted) value. This finding strongly suggests that, overall, the HLTs of the late 1980s succeeded in creating value. We also present quantitative and qualitative estimates of the (direct and indirect) costs of financial distress and their determinants. Our preferred estimates of the costs of financial distress are 10 percent of firm value. Our most conservative estimates do not exceed 23 percent of firm value. Operating margins of the distressed firms increase immediately after the HLT, decline when the firms become distressed and while they are distressed, but then rebound after the distress is resolved. Consistent with some costs of financial distress, we find evidence of unexpected cuts in capital expenditures, undesired asset sales, and costly managerial delay in restructuring. To the extent they occur, the costs of financial distress that we identify are concentrated heavily in the period after the firms become distressed, but before they enter Chapter 11.

Observations and Conjectures on the U.S. Employment Miracle

Alan B. Krueger and Jörn-Steffen Pischke

NBER Working Paper No. 6146
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JEL No. J23
Labor Studies

This paper has three goals. First, we place U.S. job growth in international perspective by exploring cross-country differences in employment and population growth. We find that the United States has managed to absorb added workers—especially female workers—into employment at a greater rate than most countries. The leading explanation for this phenomenon is that the U.S. labor market has flexible wages and employment practices, whereas European labor markets are rigid. The second goal of this paper is to evaluate the hypothesis of labor market rigidities. Although greater wage flexibility probably contributes to the comparative success of the United States in creating jobs for its population, the slow growth in employment in many European countries appears too uniform across skill groups to result from relative wage inflexibility alone. Furthermore, a great deal of labor market adjustment seems to take place at a constant real wage in the United States. This leads to the third goal: speculating on other explanations for why the United States has managed to absorb so many new entrants to the labor market successfully. We conjecture that product market constraints contribute to the slow growth of employment in many countries.

"Peso Problem" Explanations for Term Structure Anomalies

Geert Bekaert, Robert J. Hodrick, and David A. Marshall

NBER Working Paper No. 6147
August 1997
JEL Nos. G1, F3, E4, C5
Asset Pricing

We examine the empirical evidence on the expectations hypothesis of the term structure of interest rates in the United States, the United Kingdom, and Germany using the Campbell-Shiller [1991] regressions and a vector autoregressive methodology. We argue that anomalies in the U.S. term structure, documented by Campbell and Shiller [1991], may be attributable to a generalized peso problem in which a high-interest rate regime occurred less frequently in the sample of U.S. data than was anticipated rationally. We formalize this idea as a regime-switching model of short-term interest rates estimated with data from seven countries. Technically, this model extends recent research on regime-switching models with state-dependent transitions to a cross-sectional setting. Use of the small sample distributions generated by the regime-switching model for inference considerably weakens the evidence against the expectations hypothesis, but it remains somewhat implausible that our data-generating process produced the U.S. data. However, a model that combines moderate time-variation in term premiums with peso-problem effects is largely consistent with term structure data from the United States, United Kingdom, and Germany.

The Mix and Scale of Factors with Irreversibility and Fixed Costs of Investment

Andrew B. Abel and Janice C. Eberly

NBER Working Paper No. 6148
August 1997
JEL No. E22
Economic Fluctuations and Growth

When factors of production can be adjusted costlessly, the mix of factors can be considered separately from their scale. We examine factor choice and utilization when investment is irreversible and subject to a fixed cost, so that the capital stock is a quasi-fixed factor that is adjusted infrequently and by discrete amounts. We derive and analyze analytic approximations for optimal investment behavior, and show how the quasi-fixity of capital eliminates the dichotomy between factor mix and scale. We show that the quasi-fixity of capital can give rise to labor hoarding, even when labor is a purely flexible factor.

Transition to a Fully Funded Pension System: Five Economic Issues

Martin Feldstein

NBER Working Paper No. 6149
August 1997
JEL Nos. H55, E2
Aging, Economic Fluctuations and Growth, Health Care, and Public Economics

This paper provides a relatively nontechnical discussion of the effects of shifting from a pay-as-you-go system of Social Security pensions to a fully-funded plan based on individual accounts. The analysis discusses the rationale for such a shift and deals with five common problems: 1) the nature of the transition path; 2) the effect of the shift on national saving and capital accumulation; 3) the rate of return that such accounts would earn; 4) the risks of unfunded and funded systems; and 5) the distributional effects of the shift.

The Political Economy of the European Economic and Monetary Union: Political Sources of an Economic Liability

Martin Feldstein

NBER Working Paper No. 6150
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JEL Nos. F33, F02
Economic Fluctuations and Growth, International Finance and Macroeconomics, International Trade and Investment, Monetary Economics, and Public Economics

European Monetary Union (EMU) would be an economic liability. A single currency would cause at most small gains for trade and investment but would raise average cyclical unemployment and probably would raise inflation, perpetuate structural unemployment, and increase the risk of protectionism. EMU nevertheless is being pursued in order to create political union. Fundamental disagreements among member states about economic policies, foreign and military policies, and the sharing of political power are likely to create future intra-European conflicts. A united Europe would be a formidable participant in the 21st century's global balance of power, with uncertain consequences for world stability and peace.

Why Do Economists Disagree About Policy? The Roles of Beliefs About Parameters and Values

Victor R. Fuchs, Alan B. Krueger, and James M. Poterba

NBER Working Paper No. 6151
August 1997
JEL Nos. H00, J00, A1
Labor Studies and Public Economics

This paper reports the results of surveys of specialists in labor economics and public economics at 40 leading research universities in the United States. Respondents provided opinions of policy proposals; quantitative best estimates and 95 percent confidence intervals for economic parameters; answers to values questions regarding income redistribution, efficiency versus equity, and individual versus social responsibility; and their political party identification.

We find considerable disagreement among economists about policy proposals. Their positions on policy are related more closely to their values than to their estimates of relevant economic parameters or to their political party identification. Average best estimates of the economic parameters agree well with the ranges summarized in surveys of relevant literature, but the individual best estimates usually are widely dispersed. Moreover economists, like experts in many fields, appear more confident of their estimates than the substantial cross-respondent variation in estimates would warrant. Finally, although the confidence intervals in general appear to be too narrow, respondents whose best estimates are farther from the median tend to give wider confidence intervals for those estimates.

Evaluating Trade Reform Using Ex-Post Criteria

Jiandong Ju and Kala Krishna

NBER Working Paper No. 6152
September 1997
JEL Nos. F0, F1
International Trade and Investment

In contrast to existing work which takes an ex-ante approach and looks for policy prescriptions that improve welfare, this paper takes an ex-post approach. We ask whether indicators show that welfare has risen in the wake of a reform. That is, we look for evidence of welfare improvements in "outcome space." We derive necessary and sufficient conditions for welfare improving trade reform. These conditions are useful in evaluating Free Trade Areas and in reforming Article XXIV of GATT.

Social Security and Retirement in Germany

Axel Börsch-Supan and Reinhold Schnabel

NBER Working Paper No. 6153
September 1997
Aging and Public Economics

This paper describes the German public old age social security program and its incentive effects on retirement decisions. We present the key features of the system and express retirement incentives in the form of accrual rates of social security wealth and implicit tax rates on earnings. We summarize labor market behavior of older persons in Germany during the last 35 years and survey the empirical literature on the effects of the social security system on retirement in Germany.

We show that even after the 1992 reform, the German system is actuarially unfair. This generates a substantial redistribution from late- to early-retirees and creates incentives for early retirement. Indeed, average retirement age is very low in West Germany (about age 59) and even lower in East Germany. This tendency towards early retirement is particularly painful at times of population aging when the German social security contribution rate is expected to increase dramatically and will exceed the rates in other industrialized countries substantially.

Pensions and Retirement in the U.K.

Richard Blundell and Paul Johnson

NBER Working Paper No. 6154
September 1997
Aging and Public Economics

Labor force participation of men over the age of 50 fell dramatically in the United Kingdom between the early 1970s and early 1990s. Despite the fact that the state retirement pension does not become available to men until the age of 65, half of men aged 60–64 were economically inactive in the mid-1990s.

The main element of the state retirement pension is its flat rate, and for most people this is unaffected by any potential contributions made after age 60. Additional amounts of the earnings-related component are the result of extra contributions. Overall, the state retirement pension system offers no incentives for people to retire early.

However, other benefits are available to people before the age of 65. After reaching the age of 60, people face no availability-for-work test for the receipt of means-tested benefits, and there appears to be widespread use of invalidity-and-sickness benefits as a route into early retirement. Once these are accounted for, a substantial incentive for early withdrawal from the labor market is apparent. The combination of this with the reduced demand for, and wages available to, low skilled labor can help to explain the reduced labor force participation that is observed.

The state pension system, though, is complemented by extensive occupational pension coverage. For those in the occupational system, the rules of their own scheme are likely to be an important element in their retirement decision. We show that the retirement behavior of those with and without occupational pensions is substantially different. Those without are more likely to withdraw from the labor market very early. A large proportion of those with occupational pensions begin to retire from the age of 55 when relatively generous benefits are likely to become available. In many schemes there are significant incentives to retire before age 65.

Social Security and Retirement in Italy

Agar Brugiavini

NBER Working Paper No. 6155
September 1997
Aging and Public Economics

This paper analyzes the incentives provided by the Italian Social Security System (SS) to supply labor. Italy is an interesting example in this context because: 1) fertility rates are very low, while life expectancy has improved dramatically over the past decades; 2) the SS program is extremely generous to retirees by providing very high replacement rates; 3) virtually all retirement income is in the form of SS benefits; 4) the existence of an early retirement provision, which attracts no actuarial penalty, greatly distorts choices in favor of early retirement.

This paper addresses these issues by documenting the stylized facts of the labor market and the SS provisions. I then develop a simulation model to better understand the incentive effects of SS on current cohorts of retirees. This model proposes two measures for incentives: the accrual rate (that is, the percentage change in Social Security Wealth) from postponing retirement, and the implicit tax/subsidy (via SS entitlements) on potential earnings from working an additional year. The simulation results show that the Italian SS program provides a strong incentive to retire early; the age-implicit tax profile fits very closely with the estimated hazards out of the labor force. Additional evidence of the existence of behavioral responses to SS policy changes lends further support to the view that old age insurance arrangements have an influence on labor supply decisions.

Social Security and Retirement in Japan

Takashi Oshio and Naohiro Yashiro

NBER Working Paper No. 6156
September 1997
Aging and Public Economics

We discuss the effect of the incentive mechanism of the public pension on the retirement decisions made in the Japanese labor market. Although the labor market participation of Japanese older persons is quite high by international standards, one principle incentive mechanism of the public pension system in Japan that affects retirement behavior has many things in common with incentives in other OECD countries: pension benefits are designed to be "actuarially unfair," and the decision to work beyond age 60 is penalized. As the population quite rapidly ages, it is wasteful to maintain the disincentive mechanism that arises from the actuarially unfair pension scheme for older persons.

Inflation Forecasts and Monetary Policy

Ben S. Bernanke and Michael Woodford

NBER Working Paper No. 6157
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JEL Nos. E5, E52
Economic Fluctuations and Growth and Monetary Economics

Proposals for "inflation targeting" as a strategy for monetary policy leave open the important operational question of how to determine whether current policies are consistent with the long-run inflation target. An interesting possibility is that the central bank might target current private-sector *forecasts* of inflation, either made explicitly by professional forecasters or implicit in asset prices. We address the existence and uniqueness of rational expectations equilibriums when the central bank uses private-sector forecasts as a guide to policy actions. In a dynamic model that incorporates both sluggish price adjustment and shocks to aggregate demand and supply, we show that strict targeting of inflation forecasts typically is inconsistent with the existence of rational expectations equilibriums. Further, policies approximating strict inflation-forecast targeting are likely to have undesirable properties. We also show that economies with more general forecast-based policy rules are particularly susceptible to indeterminacy of rational expectations equilibriums. We conclude that, although private-sector forecasts may contain information useful to the central bank, ultimately the monetary authorities must rely on an explicit structural model of the economy to guide their policy decisions.

Optimal Risk Management Using Options

Dong-Hyun Ahn, Jacob Boudoukh, Matthew Richardson, and Robert F. Whitelaw

NBER Working Paper No. 6158
September 1997
JEL No. G13
Asset Pricing

This paper addresses the question of how an institution might optimally manage the market risk of a given exposure. We provide an analytical approach to optimal risk management under the assumption that the institution wishes to minimize its Value-at-Risk (VaR) using options, and that the underlying exposure follows a geometric Brownian. The optimal solution specifies the VaR-minimizing level of "moneyness" of the option as a function of the asset's distribution, the risk-free rate, and the VaR hedging period. We find that the optimal strike of the put is independent of the level of expense the institution is willing to incur for its hedging program. The costs associated with a suboptimal choice of exercise price, in terms of either the increased VaR for a fixed hedging cost or the increased cost to achieve a given VaR, are economically significant. Comparative static results show that the optimal strike price of these options is increasing in the asset's drift; decreasing in its volatility for most reasonable parameterizations, decreasing in the risk-free interest rate, nonmonotonic in the horizon of the hedge, and increasing in the level of protection desired by the institution (that is, the percentage of the distribution relevant for the VaR). We show that the most important determinant is the conditional distribution of the underlying asset exposure; therefore, the optimal exercise price is very sensitive to the relative magnitude of the drift and diffusion of this exposure.

Beyond Balanced Growth

Piyabha Kongsamut, Sergio Rebelo, and Danyang Xie

NBER Working Paper No. 6159
September 1997
JEL Nos. O14, O41
Economic Fluctuations and Growth

One of the most striking regularities of the growth process is the massive reallocation of labor from agriculture into industry and services. Balanced growth models commonly are used in macroeconomics because they are consistent with the well-known Kaldor facts about economic growth. However, these models are inconsistent with the dynamics of structural change that are a central feature of economic development. This paper discusses models with generalized balanced growth paths. These paths retain some of the key features of balanced growth but are consistent with the observed labor reallocation dynamics.

Effects of Air Quality Regulation on Decisions of Firms in Polluting Industries

Randy Becker and Vernon Henderson

NBER Working Paper No. 6160
September 1997
Productivity and Public Economics

This paper examines the unintended effects of air quality regulation on the decisions of major polluters, using plant data for 1963 to 1992. A key regulatory tool since 1978 is the annual designation of a county's air quality attainment status, where non-attainment status triggers specific requirements for equipment for new and existing plants. We find that, in the later years of regulation, non-attainment status reduces "expected births" in polluting industries by 40–50 percent. This results in a shift of polluting activity to cleaner, less populated attainment areas. Starting in the 1970s, the effects appear first for industries with larger plants 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, which results 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; thus, in non-attainment areas compared to attainment areas, regulation induces 50–100 percent increases in initial plant sizes. For plants over 10 years of age, though, there are no size differences.

Does Favorable Tax-Treatment of Housing Reduce Equipment Investment?

Ben Broadbent and Michael Kremer

NBER Working Paper No. 6161
September 1997
Economic Fluctuations and Growth and Public Economics

It is often argued that low tax rates on owner-occupied housing divert investment from equipment. This paper demonstrates that if people are heterogeneous in their propensity to save, and if there are constraints on borrowing, then favorable tax treatment of owner-occupied housing up to a certain value *increases* investment in equipment. This is because low taxes on housing encourage renters to become owner-occupiers, and this leads existing owner-occupiers to shift their portfolio of other assets from rental housing to equipment.

Is Real Exchange Rate Mean Reversion Caused By Arbitrage?

José M. Campa and Holger C. Wolf

NBER Working Paper No. 6162
September 1997
International Finance and Macroeconomics

The presence of purchasing power parity often is attributed to the exploitation of arbitrage opportunities in goods markets. We examine this presumption for a 1960–96 monthly panel of bilateral exchange rates and trade for the G-7 countries, and find strong mean reversion. However, despite allowing for substantial latitude in specification, we find very limited support for a simple view of arbitrage. The deviations of real exchange rates and trade from trend are virtually uncorrelated. Large trade deviations neither trigger nor accelerate mean reversion. Large real exchange rate deviations do not lead to systematic changes in trade. Constricting the sample to 18-month episodes of notable mean reversion —large persistent depreciations starting from overvalued levels—does not reveal any systematic relation either. However, the timing of these episodes does suggest an alternative explanation of mean reversion: the majority of episodes occur during periods of instability in the *nominal* exchange rate regime, pointing towards exchange rate policy or speculation as the immediate cause of mean reversion. Of course, both may reflect *expectations* of trade responses, opening an indirect role for *incipient arbitrage* in explaining mean reversion.

Economic Integration and Political Disintegration

Alberto Alesina, Enrico Spolaore, and Romain Wacziarg

NBER Working Paper No. 6163
September 1997
JEL Nos. F15, F43
Economic Fluctuations and Growth, International Finance and Macroeconomics, and International Trade and Investment

Trade liberalization and political separatism go hand in hand. In a world of trade restrictions, large countries enjoy economic benefits because political boundaries determine the size of the market. In a world of free trade and global markets, even relatively small cultural, linguistic, or ethnic groups can benefit from forming small and homogeneous political jurisdictions that trade peacefully and are integrated economically with others. This paper provides a formal model of the relationship between openness and the equilibrium number and size of countries, and successfully tests two implications of the model. The first is that the economic benefits of country size depend on and are mediated by the degree of openness to trade. The second is that the history of Nation-State creations and secessions is influenced by the trade regime.

Selection, Marketing, and Medicaid Managed Care

Sherry Glied, Jane Sisk, Sheila Gorman, and Michael Ganz

NBER Working Paper No. 6164
September 1997
JEL No. I11
Health Care

In several states, the Medicaid program allows beneficiaries to choose among multiple managed care plans and traditional Medicaid. We use data from a survey of New York City Medicaid beneficiaries enrolled in conventional Medicaid and in five Medicaid managed care plans to examine the effect of plan selection on measures of satisfaction with care, access to a regular source of care, and utilization of ambulatory and emergency room services. We use information on health status to evaluate selection on observable characteristics; variation in geographic patterns of enrollment to investigate selection on unobservable characteristics; and survey responses to questions about source of information about a plan to study selection responses to plan marketing.

We find that managed care enrollees differed from those who remained in traditional Medicaid on both observable and unobservable characteristics. Adjusting for population differences reduced the positive effect of managed care on satisfaction with care and eliminated the apparent utilization savings from managed care, but did not reduce the positive effect of managed care on access to regular care. Enrollees in different managed care plans did not differ substantially in terms of their observable health-related characteristics. However, they did differ on unobservable characteristics in ways that affected measures of satisfaction, access, and utilization.

We find that there are significant differences in the health-related characteristics of plan enrollees who learned about plans in different ways. Enrollees who learned about plans from plan representatives were healthier than those who learned about plans from city-income support staff. This suggests that marketing practices can contribute to selection. However, differences in marketing also had direct effects on patterns of use of health services that should be considered in making marketing policy decisions. Enrollees who learned about plans from plan representatives were more likely to report that they had a regular physician at their usual source of care, and they made fewer emergency room visits.

Mexico's 1994 Exchange Rate Crisis Interpreted in Light of the Non-Traded Model

Andrew M. Warner

NBER Working Paper No. 6165
September 1997
International Finance and Macroeconomics

This paper attempts to make the case that a two-sector model using the familiar traded/non-traded distinction offers a reasonably successful empirical explanation of why Mexico needed to devalue its exchange rate in 1994. This model provides a way to define and measure disequilibrium in the exchange rate, and thus may be useful in assessing the likelihood of an exchange rate crisis in other developing countries. The results suggest that Mexico's exchange rate was about 25 percent overvalued on the eve of its 1994 crisis, but was much closer to equilibrium by the end of 1996. I compare the approach in this paper with other ways of assessing disequilibrium in the exchange rate, based on purchasing power parity or monetary models of the exchange rate.

Implications of Skill-Biased Technological Change: International Evidence

Eli Berman, John Bound, and Stephen Machin

NBER Working Paper No. 6166
September 1997
JEL Nos. F1, J31, O3
International Trade and Investment, Labor Studies, and Productivity

Demand for less skilled workers decreased dramatically in the United States and in other developed countries over the past two decades. We argue that pervasive skill-biased technological change, rather than increased trade with the developing world, is the principal culprit. The pervasiveness of this technological change is important for two reasons. First, it is an immediate and testable implication of technological change. Second, under standard assumptions, the more pervasive the skill-biased technological change, the greater the increase in the embodied supply of less skilled workers and the greater the depressing effect on their relative wages through the prices of world goods. In contrast, in the Heckscher-Ohlin model with small open economies, the skill-bias of *local* technological change does not affect wages. Thus, pervasiveness deals with a major criticism of skill-biased technological change as a cause. Testing the implications of pervasive, skill-biased technological change, we find strong supporting evidence. First, *across* the OECD, most industries have *increased* the proportion of skilled workers employed *despite* rising or stable relative wages. Second, increases in demand for skills were concentrated in the *same* manufacturing industries in *different* developed countries.

The Transition in East Germany: When is a Ten Point Fall in the Gender Wage Gap Bad News?

Jennifer Hunt

NBER Working Paper No. 6167
September 1997
JEL Nos. J23, J31, J7, P5
Labor Studies

Since monetary union with western Germany on July 1, 1990, female monthly wages in eastern Germany have risen by 10 percentage points relative to male wages, but female employment has fallen 5 percentage points more than male employment. Using the German Socio-Economic Panel to study the years 1990–4, I show that along with age, the wage of a worker in 1990 is the most important determinant of the "hazard rate from employment." Differences in mean 1990 wages explain more than half of the gender gap in this hazard rate, since low earners were more likely to leave employment, and were disproportionately female. The withdrawal from employment of low earners can explain 40 percent of the rise in relative female wages. Competing-risks analysis reveals that the wage has its effect through layoffs, and hence through labor demand, which is consistent with the hypothesis that increases in the union wage have caused the least productive to be laid off. There is no evidence that reduction in the availability of child care is a major factor in reducing female employment rates.

What Happens When Countries Peg Their Exchange Rates? (The Real Side of Monetary Reforms)

Sergio Rebelo

NBER Working Paper No. 6168
September 1997
JEL No. F41
Economic Fluctuations and Growth and International Finance and Macroeconomics

There is a well-known set of empirical regularities that describes the experience of countries that peg their exchange rate as part of a macroeconomic adjustment program. Following the peg, economies tend to experience an increase in GDP, a large expansion of production in the non-tradable sector, a contraction in tradables production, a deterioration of the current account, an increase in the real wage, a reduction in unemployment, a sharp appreciation in the relative price of non-tradables, and a boom in the real estate market. This paper discusses how the changes in the expected behavior of fiscal policy that tend to be associated with the peg can contribute to explaining these facts.

Social Security and Retirement in Belgium

Pierre Pestieau and Jean-Philippe Stijns

NBER Working Paper No. 6169
September 1997
Aging and Public Economics

Belgium, like many other industrialized countries, is facing serious problems in financing its social security. The effects of aging are still to come, but Belgium already has one of the lowest rates of attachment to the labor force of older persons. This paper presents the key features of the Belgian social security system and focuses on labor force participation and receipt of benefits. Most of the attention is on the interaction between retirement behavior and the various social security schemes. By measuring the implicit tax/subsidy rate on work after age 55 through these schemes, we can explain the actual pattern of early and normal retirement of Belgian older workers.

Price Stability vs. Low Inflation in Germany: An Analysis of Costs and Benefits

Karl-Heinz Tödter and Gerhard Ziebarth

NBER Working Paper No. 6170
September 1997
Monetary Economics

We empirically investigate the costs and benefits of going from low inflation to price stability in Germany. Recent empirical evidence on the sacrifice ratio suggests that the break-even point at which the permanent benefits of reducing the trend rate of inflation by 2 percentage points exceed the temporary costs, in terms of output losses, is below 0.3 percent of GDP. We analyze the welfare implications of the interactions of even moderate rates of inflation with the distorting effects of the German tax system. We consider four areas of economic activity: intertemporal allocation of consumption; demand for owner-occupied housing; money demand; and government debt service. We estimate the direct welfare effects of reducing the rate of inflation, as well as the indirect tax revenue effects. We find that reducing the inflation rate by 2 percentage points permanently increases welfare by 1.4 percent of GDP. Finally, we consider the optimal rate of disinflation.

Pensions and the Distribution of Wealth

Kathleen McGarry and Andrew Davenport

NBER Working Paper No. 6171
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JEL Nos. J26, D31
Aging

Despite the enormous gains in the economic well-being of the elderly, and the progressivity of the Social Security benefit schedule, there remains substantial inequality in financial resources. We use data from the Health and Retirement Survey to examine the distribution of pension wealth in relation to other private wealth. We pay particular attention to differences by sex and race. We find that men are approximately 50 percent more likely to have pensions than are women and, conditional on having a pension, its mean value for men is twice as great as that for women. These differences remain significant even after we control for factors such as industry, occupation, and tenure. Differences by race are smaller than differences by sex but are still significant.

We find further that pension wealth is distributed slightly more evenly than is other private wealth. However, adding pension wealth to net worth has only small effects on overall inequality, and these effects are not distributed evenly across groups. Single women, in particular, fare worse when pension wealth is included as part of total wealth.

This paper also describes in detail the assumptions necessary to calculate pension wealth from the data available in the HRS. We hope this description will lead to a discussion of the most appropriate assumptions to be made in these calculations, and to a standard set of pension wealth variables.

The Main Bank System and Corporate Investment: An Empirical Reassessment

Fumio Hayashi

NBER Working Paper No. 6172
September 1997
JEL Nos. E22, G3
Economic Fluctuations and Growth

This paper examines whether the sensitivity of corporate investment to internal funds depends on the firm's access to a main bank. We use the sample of Japanese manufacturing firms constructed by Hayashi and Inoue [1991]. For either of two classifications of firms by their access to a main bank, there is no evidence that ties to a main bank mitigate the sensitivity of investment to the firm's liquidity. The large effect of main bank ties reported in Hoshi, Kashyap, and Scharfstein [1991] is most likely attributable to the relatively poor quality of their capital stock estimate.

Taxes, Organizational Form, and the Deadweight Loss of the Corporate Income Tax

Austan Goolsbee

NBER Working Paper No. 6173
September 1997
JEL Nos. H25, L22
Public Economics

By changing the relative gain to incorporation, corporate taxation can play an important role in a firm's choice of organizational form. General equilibrium models have shown that substantial shifting of organizational form in response to tax rates implies a large deadweight loss from taxation. I estimate the impact of taxes on organizational form using data from 1900–39. I find that the effect of taxes is significant but small. A corporate rate increase of .10 raises the noncorporate share of capital by .002 to .03. The implied deadweight loss of the corporate income tax is around 5–10 percent of revenue.

Real Exchange Rate Misalignments and Growth

Ofair Razin and Susan M. Collins

NBER Working Paper No. 6174
September 1997
International Finance and Macroeconomics

Real exchange rate (RER) misalignment is now a standard concept in international macroeconomic theory and policy. However, there is neither a consensus indicator of misalignment nor an agreed upon methodology for constructing such an indicator. We construct an indicator of RER misalignment for a large sample of developed and developing countries. This indicator is based on a well-structured but simple extension of an IS-LM model of an open economy. We then explore whether RER misalignments are related to country growth experiences. Interestingly, we find that there are important nonlinearities in the relationship. Only very high overvaluations appear to be associated with slower economic growth, while moderate to high (but not very high) undervaluations appear to be associated with more rapid economic growth.

Ethnicity and the Intergenerational Transmission of Welfare Dependency

George J. Borjas and Glenn T. Sueyoshi

NBER Working Paper No. 6175
September 1997
JEL No. I3
Labor Studies and Children

There are sizeable differences in the incidence and duration of welfare spells across ethnic groups, and these differences tend to persist across generations. Using the National Longitudinal Surveys of Youth, we find that children raised in welfare households are themselves more likely to become welfare recipients for longer durations. We also show that growing up in an ethnic environment characterized by welfare dependency has a significant effect on both the incidence and duration of welfare spells. About 80 percent of the difference in welfare participation rates between two ethnic groups in the parental generation is transmitted to the children.

To Ghetto or Not to Ghetto: Ethnicity and Residential Segregation

George J. Borjas

NBER Working Paper No. 6176
September 1997
JEL No. R12
Labor Studies

This paper analyzes the link between ethnicity and the choice of residing in ethnically segregated neighborhoods. Data drawn from the National Longitudinal Surveys of Youth show that there are strong human capital externalities both within and across ethnic groups. As a result, the segregation choices made by particular households depend both on the households' economic opportunities and on aggregate characteristics of the ethnic groups. The evidence suggests that highly skilled persons who belong to disadvantaged groups have lower probabilities of ethnic residential segregation, relative to the choices made by the most skilled persons in the most skilled groups.

Implicit Contracts and the Theory of the Firm

George Baker, Robert Gibbons, and Kevin J. Murphy

NBER Working Paper No. 6177
September 1997
Corporate Finance and Industrial Organization

We analyze the role of "implicit contracts" (that is, informal agreements supported by reputation rather than law) both within firms, as in employment relationships, and between firms, as for example hand-in-glove supplier relationships. We find that the optimal organizational form is determined largely by what implicit contracts it facilitates. We also show that vertical integration is an efficient response to widely varying supply prices. Finally, our model suggests why "management" (that is, the development and implementation of unwritten rules and codes of conduct) is essential in organizations.

Retirement Wealth Accumulation and Decumulation: New Developments and Outstanding Opportunities

Olivia S. Mitchell and James F. Moore

NBER Working Paper No. 6178
September 1997
JEL Nos. H55, O16, J26, G23
Aging and Labor Studies

Analysts have raised questions about the ability and inclination of current workers' to save enough for retirement. This issue is of obvious policy interest given the current debate over reforming national retirement income programs. We explore the implications of recent research on retirement wealth accumulation and decumulation for this debate. Our goal is to identify problems and opportunities in the area of preparedness for retirement.

Implied Exchange Rate Distributions: Evidence from OTC Option Markets

José M. Campa, P.H. Kevin Chang, and Robert L. Reider

NBER Working Paper No. 6179
September 1997
International Finance and Macroeconomics

This paper uses a rich new dataset of option prices on the dollar-mark, dollar-yen, and key EMS cross-rates to extract the entire risk-neutral probability density function (pdf) over horizons of one and three months. We compare three alternative smoothing methods—cubic splines; an implied binomial tree (trimmed and untrimmed); and a mixture of lognormals—for transforming option data into the pdf. Despite their methodological differences, the three approaches lead to a similar pdf which is clearly distinct from the lognormal benchmark, and typically is characterized by skewness and leptokurtosis.

We then document a striking positive correlation between skewness in these pdfs and the spot rate. The stronger a currency, the more expectations are skewed towards a further appreciation of that currency. We interpret this as a rejection of the suggestion that these exchange rates evolve as a martingale, or that they follow a credible target zone, either explicit or implicit. Instead, this positive correlation is consistent with target zones with endogenous realignment risk. We discuss two interpretations of our results on skewness: when a currency is stronger, the actual probability of further large appreciation is higher or, because of risk, such states are valued more.

Geographical and Sectoral Shocks in the U.S. Business Cycle

Atish R. Ghosh and Holger C. Wolf

NBER Working Paper No. 6180
September 1997
JEL Nos. E30, E32, E37
International Finance and Macroeconomics

We ask whether the aggregate U.S. business cycle is driven mainly by geographical shocks (affecting all sectors within a state) or by sectoral shocks (affecting the same sector in all states). We find that, at the level of an individual sector in an individual state, shocks to output growth are driven by the sector, not by the state: for example, textiles in Texas move more with textiles elsewhere in the United States than with other sectors in Texas. But shocks to sector growth rates exhibit a lower correlation *across* sectors as compared to the correlation of shocks to state growth rates *across* states. As a result, geographical shocks gain importance at higher levels of aggregation. Finally, we find that changes in the volatility of the aggregate U.S. business cycle reflect, to a roughly comparable degree, both changes in the *volatility* of state and sector business cycles, and changes in their *correlation* across sectors and states.

Revenue Neutral Trade Reform with Many Households, Quotas, and Tariffs

James E. Anderson

NBER Working Paper No. 6181
September 1997
JEL Nos. F13, H21
International Trade and Investment

Government budget balance forces the endogenous use of distortionary tax instruments when an exogenous reform is implemented. The aggregate efficiency of such a reform is based on comparisons of simple summary measures of the Marginal Cost of Funds of the various tariff or quota changes with the Marginal Cost of Funds of the alternative taxes, or of the Marginal Benefit of government supplied goods. The aggregate efficiency of tariff liberalization is dubious, while quota liberalization is more likely to be efficient. Social welfare rises with aggregate efficiency unless distribution effects are perverse. We provide plausible sufficient conditions for non-perverse distributional effects. The results frame a diagnostic method for sensitivity analysis in evaluations of trade and tax policies.

Is Price Inflation Different for the Elderly? An Empirical Analysis of Prescription Drugs

Ernst R. Berndt, Iain M. Cockburn, Douglas L. Cocks, Arnold Epstein, and Zvi Griliches

NBER Working Paper No. 6182
September 1997
JEL Nos. I11, C43
Aging, Health Care, and Productivity

Using annual data from 1990 to 1996, we empirically examine whether there are elderly-nonelderly price inflation differentials for one medical item, prescription pharmaceuticals. We assess prices for prescription drugs destined for ultimate use by the elderly versus the nonelderly at three points in the distribution chain: initial sales from manufacturers; intermediate purchases by retail pharmacies; and final sales from retail pharmacies to patients/payors.

We find that at the initial point in the distribution chain, there are no differences in price inflation for the aggregate of drugs destined for use by the elderly versus the nonelderly. At the intermediate sell-in to pharmacy distribution point, we examine antibiotics (ABs), antidepressants (ADs), and calcium channel blockers (CCBs). For ABs, elderly price inflation since 1992 is somewhat greater than for the young, reflecting in part the elderly's more intensive use of newer branded products having fewer side effects, adverse drug interactions, and more convenient dosing, attributes that are of particular importance to the elderly. For ADs, elderly price inflation is considerably less than for the young, in large part because of the elderly's greater use of older generic products. For CCBs, elderly-nonelderly differentials are negligible. None of these differentials adjust for variations in quality.

At the final retail sell-out point, we only examine ADs. We find that since retailers obtain larger gross margins on generic than on branded products, and because the elderly are disproportionately large users of generic ADs, the elderly-nonelderly price inflation differential benefiting the elderly at the intermediate point is reduced considerably at final sale.

Efficient Inflation Estimation

Michael F. Bryan, Stephen G. Cecchetti, and Rodney L. Wiggins II

NBER Working Paper No. 6183
September 1997
JEL No. E31
Monetary Economics

We investigate the use of trimmed means as high-frequency estimators of inflation. The known characteristics of price change distributions, specifically the observation that they generally exhibit high levels of kurtosis, imply that simple averages of price data are not likely to produce efficient estimates of inflation. Trimmed means produce superior estimates of "core inflation," which we define as a long-run centered moving average of CPI and PPI inflation. We find that trimming 9 percent from each tail of the CPI price-change distribution, or 45 percent from the tails of the PPI price-change distribution, yields an efficient estimator of core inflation for these two series, although lesser trims also produce substantial efficiency gains. Historically, the optimal trimmed estimators are found to be nearly 23 percent more efficient (in terms of root-mean-square error) than the standard mean CPI, and 45 percent more efficient than the mean PPI. Moreover, the efficient estimators are robust to sample period and to the definition of the presumed underlying long-run trend in inflation.

Procompetitive Market Access

Kala Krishna, Suddhasatwa Roy, and Marie Thursby

NBER Working Paper No. 6184
September 1997
JEL No. F13
International Trade and Investment

The view that U.S. businesses are being unfairly hurt by barriers to access in foreign markets has raised demands for market access requirements (MARs) from within U.S. industry and government. We show that, contrary to the prevailing wisdom of the recent literature, MARs can be implemented in a procompetitive manner: in a way that provides the right incentives for increasing aggregate output or lowering prices. We provide two examples to illustrate this point. We show that an implementation scheme in which the U.S. firm receives a pre-announced subsidy if the market share target is met leads to increased aggregate output. In a second example, we show that a MAR on an imported intermediate input can lead not only to increased imports of the intermediate good, but also to increased output in the final good market using the input. The intuition is that increasing output of the final good helps to make the MAR less binding, and this reduces the marginal cost of production in the final good market. Thus our results buttress the point made in Krishna, Roy, and Thursby [1997] that the effects of MARs depend crucially on the details of their implementation.

Household Portfolio Allocation Over the Life Cycle

James M. Poterba and Andrew A. Samwick

NBER Working Paper No. 6185
September 1997
JEL Nos. E21, G11
Aging

We analyze the relationship between age and portfolio structure for households in the United States. We focus on both the probability that households of different ages own particular portfolio assets and on the fraction of their net worth allocated to each asset category. We distinguish between age and cohort effects, using data from the repeated cross-sections of the Federal Reserve Board's Surveys of Consumer Finances. We conclude first, that there are important differences across asset classes in both the age-specific probabilities of asset ownership and in the portfolio shares of different assets at different ages. The data do not support the notion that all assets can be treated as identical when analyzing household wealth accumulation. Institutional factors, asset liquidity, and evolving investor tastes must be recognized in modeling asset demand. These factors could affect analyses of, as well as the composition of, overall household saving. Second, there are evident differences in the asset ownership probabilities of different birth cohorts. Currently, older households are more likely to hold corporate stock, and less likely to hold tax-exempt bonds, than younger households *at any given age*. These differences across cohorts are important to recognize when analyzing asset accumulation profiles.

Anonymous Market and Group Ties in International Trade

Alessandra Casella and James E. Rauch

NBER Working Paper No. 6186
September 1997
JEL No. F10
International Trade and Investment

For trade in differentiated products, preferential ties to a group that is settled abroad facilitate an exporter's entry into the foreign market by providing information and access to distribution channels. This contrasts with the difficulties of an unattached producer who is unfamiliar with the foreign environment. Inspired by the role of coethnic ties and business groups in East Asia, we build a simple general equilibrium model of trade that formalizes this observation. Output is generated through bilateral matching of agents of various types. Domestic matching is perfect: every trader knows the type of all others and can approach whomever he chooses. International matching is random: every trader lacks the information to choose his partner's type. However, group ties allow perfect matching abroad to a minority of individuals who have access to them and can decide whether or not to exploit them. We show that in the absence of ties, the existence of informational barriers reduces the volume of trade. By increasing trade, group ties are beneficial to the economy as a whole, but they have significant distributional effects. On average, group members benefit, but some may lose; nonmembers lose almost without exception, with the largest losses concentrated among those with the poorest domestic market niches.

Managed Care and Health Care Expenditures: Evidence From Medicare, 1990–1994

Laurence C. Baker and Sharmila Shankarkumar

NBER Working Paper No. 6187
September 1997
Health Care

Increases in the activity of managed care organizations are likely to have a number of implications for the structure and functioning of the U.S. health care market. One possibility is that there may be "spillover effects" influencing the performance of the entire health care delivery system, so that for both managed-care and nonmanaged-care patients, care is affected. Some discussions of Medicare reform have incorporated spillover effects as a way that increasing Medicare HMO enrollment could contribute to savings for Medicare.

We investigate the relationship between HMO market share and expenditures for the care of beneficiaries who are enrolled in traditional fee-for-service Medicare. We find that increases in system-wide HMO market share (which includes both Medicare and non-Medicare enrollment) are associated with declines in both Part A and Part B fee-for-service expenditures. The fact that managed care can influence expenditures for this population, which should be fairly well insulated from the direct effects of managed care, suggests that managed care can have broad effects on the entire health care market. Increases in Medicare HMO market share alone are associated with increases in Part A expenditures and with small decreases in Part B expenditures. This suggests that any spillovers directly associated with Medicare HMO enrollment are small.

For general discussions of health care policy, these results suggest that assessment of new policies that would influence managed care should account not only for the effects of managed care on enrollees, but also for its effects system-wide. For discussions of Medicare policy, these findings imply that previous results, which seemed to show the existence of large spillover effects associated with increases in Medicare HMO market share but did not adequately account for system-wide managed care activity and relied on older data, overstated the magnitude of actual Medicare spillovers.

Doing Without Money: Controlling Inflation in a Post-Monetary World

Michael Woodford

NBER Working Paper No. 6188
September 1997
JEL Nos. E31, E52
Economic Fluctuations and Growth and Monetary Economics

This paper shows that it is possible to analyze the determination of equilibrium inflation without any reference to either money supply or demand, as long as one specifies policy in terms of a "Wicksellian" interest-rate feedback rule. This approach should be of considerable interest, as central banks now generally agree that conventional monetary aggregates are of little use as targets or even indicators for monetary policy, because of the instability of money demand relations in economies with well-developed financial markets.

My central result is an approximation theorem showing the existence, for a simple monetary model, of a well-behaved "cashless limit" in which the money balances held to facilitate transactions become negligible. Inflation in the cashless limit is a function of the gap between the "natural rate" of interest, determined by the supply of goods and opportunities for intertemporal substitution, and a time-varying parameter of the interest-rate rule indicating the tightness of monetary policy. Inflation can be stabilized completely, in principle, by adjusting the policy parameter so as to track variation in the natural rate. Under such a regime, instability of money demand has little effect upon equilibrium inflation, and need not be monitored by the central bank.

Capital Income Taxation and Risk-Taking in a Small Open Economy

Patrick K. Asea and Stephen J. Turnovsky

NBER Working Paper No. 6189
September 1997
JEL Nos. E6, E62
International Finance and Macroeconomics and Public Economics

How do capital income taxes affect household portfolio choice and growth? We approach this question in the context of a stochastic model of a small open economy in which taxes on income from domestic capital (equity) and foreign bonds affect household portfolio choice, welfare, and the growth rate of the economy. Our theoretical and numerical analysis demonstrates the important role of risk in determining the mean and variability of growth, as well as the conditions under which a higher tax rate can improve welfare. To shed more light on the complex theoretical interaction between taxes and risk-taking, we estimate a reduced-form multinomial probit model of household portfolio choice using the method of simulated moments. The empirical evidence is in stark contrast to the conventional wisdom: we find that higher taxes make it less likely that the household will hold risky assets.

Entry Decisions in the Generic Pharmaceutical Industry

Fiona M. Scott Morton

NBER Working Paper No. 6190
September 1997
JEL Nos. L65, L20, L21
Industrial Organization

I use data on all generic drug approvals granted from 1984–94 to examine whether heterogeneity among potential generic entrants can be used to predict which firms will choose to enter a particular market. My findings suggest that a firm's portfolio characteristics, namely its previous experience with a drug or therapy, reduce the cost of preparing an ANDA and increase the probability of entry. The experience of a subsidiary's *parent* generally is not significant in predicting entry of the subsidiary. Firms also prefer entering markets that are similar, in terms of revenue and sales to hospitals, to markets already in their portfolios. On both scientific and marketing dimensions, the evidence shows that firms specialize.

I explore several different ways of constructing the set of potential entrants and find that the results are not affected by methodological variation. Standard IO theory suggests that profits per entrant will decline with the number of entrants. Previous research has found that generic prices depend on the number of generic entrants. The results presented here show that the total number of entrants increases with the size of the market (revenue). These findings imply that generic firms face a negative competition externality which makes their expectations about who else might be planning to enter any given market important in the entry decision. The limited evidence on entrant beliefs supports this conjecture, as do several features of a regulatory upheaval when firms begin entering different markets than they had in the past.

Juvenile Crime and Punishment

Steven D. Levitt

NBER Working Paper No. 6191
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JEL No. K42
Law and Economics and
Public Economics

Over the last two decades the punitiveness of the juvenile justice system has declined substantially relative to that of the adult courts. During that same time period, juvenile violent crime rates have grown almost twice as quickly as adult crime rates. This paper examines the degree to which those two empirical observations are related. I find that changes in relative punishments can account for 60 percent of the differential growth rates in juvenile and adult violent crime between 1978 and 1993. Juvenile offenders appear to be at least as responsive to criminal sanctions as adults. Moreover, sharp changes in criminal involvement with the transition from the juvenile to the adult court suggest that deterrence, rather than simply incapacitation, plays an important role. There does not, however, appear to be a strong relationship between the punitiveness of the juvenile justice system that a cohort faces and the extent of criminal involvement for that cohort later in life.

Investment Tax Incentives, Prices, and the Supply of Capital Goods

Austan Goolsbee

NBER Working Paper No. 6192
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JEL No. E62
Public Economics

Using data on the prices of capital goods, I show that much of the benefit of investment tax incentives does not go to investing firms but rather goes to suppliers of capital through higher prices. The reduction in the cost of capital from a 10 percent investment tax credit increases equipment prices by 3.5 percent to 7 percent. This lasts several years and is largest for assets with large order backlogs, low import competition, or with a large fraction of buyers able to use investment subsidies. Capital goods workers' wages rise, too. Instrumental variables estimates of the short-run supply elasticity are around one and can explain the traditionally small estimates of investment demand elasticities. In absolute value, the demand elasticity implied here exceeds one.

The Predictive Validity of Subjective Probabilities of Survival

Michael D. Hurd and Kathleen McGarry

NBER Working Paper No. 6193
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JEL Nos. I12, J14, D84
Aging

Although expectations (or subjective probability distributions) play a prominent role in models of decisionmaking under uncertainty, we have very little data on them, and instead are forced to base our models on unverifiable assumptions. Macroeconomic models often assume rational expectations, and microeconomic models base estimation on observable population probabilities. An alternative to these assumptions is querying individuals directly about their subjective probabilities, and using the responses as measures of expectations. Prior research on subjective survival probabilities in the Health and Retirement Study has shown that reported probabilities aggregate closely with life table values and covary appropriately with known risk factors. This paper uses panel data to study the evolution of subjective survival probabilities and their ability to predict actual mortality. We find that respondents modify their survival probabilities appropriately based on new information. The onset of a new disease or the death of a parent between the waves is associated with a reduction in survival probabilities. The subjective survival probabilities also predict actual survival. Those who survived in our panel reported probabilities approximately 50 percent greater at baseline than those who died. Although more needs to be learned about properties of subjective probabilities, we conclude that they have considerable promise for estimating models of decisionmaking under uncertainty.

Adverse Selection in Durable Goods Markets

Igal Hendel and Alessandro Lizzeri

NBER Working Paper No. 6194
September 1997
JEL Nos. D82, L15
Industrial Organization

An undesirable feature of Akerlof-style models of adverse selection is that ownership of used cars is independent of preferences, and is therefore *ad hoc*. We present a dynamic model that incorporates the market for new goods. Consumers self-select into buying new or used goods, making ownership of used goods endogenous. We show that, in contrast with Akerlof and in agreement with reality, the used market never shuts down. The volume of trade can be quite substantial, even in cases with severe informational asymmetries. By incorporating the market for new goods, the model lends itself to a study of the effects of adverse selection on manufacturers' incentives. We find that manufacturers may gain from adverse selection. We also give an example in which the market allocation under adverse selection is socially optimal. An extension of the model to a world with many brands that differ in reliability leads to testable predictions of the effects of adverse selection. We show that unreliable car brands have steeper price declines and lower volumes of trade.

Immigration and the Quality of Jobs

Daniel S. Hamermesh

NBER Working Paper No. 6195
September 1997
JEL Nos. J61, J23
Labor Studies

One precondition for the absence of labor-market competition between immigrants and natives is that they differ in their willingness to accept work that involves different amenities. The implications of a model embodying this assumption are that immigrants will experience inferior workplace amenities than natives, and that the presence of immigrants will affect the amenities that natives enjoy. I examine these possibilities with three sets of household data: the merged May and June 1991 Current Population Surveys (CPS), which include information on the timing of work over the day by nativity; the June 1991 CPS merged with industry data on workplace injury rates and durations; and the Quality of American Life Surveys of 1971 and 1978, which provide workers' responses about their satisfaction with particular aspects of their jobs. I show that (observationally) similar immigrants and native whites enjoy very similar packages of amenities: the precondition for noncompetition between immigrants and natives does not exist. Also, a greater concentration of immigrants has no consistent effect on the amenities that natives enjoy. African-Americans, however, receive inferior workplace amenities to those of otherwise similar native whites and immigrants.

Restraining the Leviathan: Property Tax Limitation in Massachusetts

David M. Cutler, Douglas W. Elmendorf, and Richard J. Zeckhauser

NBER Working Paper No. 6196
September 1997
Public Economics

Proposition 2½, a ballot initiative approved by Massachusetts voters in 1980, sharply reduced local property taxes and restricted their future growth. We examine the effects of Proposition 2½ on municipal finances and assess voter satisfaction with these effects. We find that Proposition 2½ had a smaller impact on local revenues and spending than expected; amendments to the law and a strong economy combined to boost both property tax revenue and state aid above forecasted amounts. Proposition 2½ did reduce local revenues substantially during the recession of the early 1990s. There were two reasons for voter discontent with the pre-Proposition 2½ financing system: agency losses from inability to monitor government were perceived to be high, and individuals viewed government as inefficient because their own tax burden was high. Through override votes, voters approved substantial amount of taxes above the tax limits imposed by the Proposition.

Optimal Management of Indexed and Nominal Debt

Robert J. Barro

NBER Working Paper No. 6197
September 1997
JEL Nos. H6, E6
Economic Fluctuations and Growth, Monetary Economics, and Public Economics

I use a tax-smoothing objective to assess the optimal composition of public debt with respect to maturity and contingencies. This objective motivates the government to make its debt payouts contingent on the levels of public outlay and the tax base. If these contingencies are present, but asset prices of noncontingent indexed debt are stochastic, then full tax smoothing dictates an optimal maturity structure of the noncontingent debt. If the certainty-equivalent outlays are the same for each period, then the government should guarantee equal real payouts in each period: that is, the debt takes the form of indexed consols. This structure insulates the government's budget constraint from unpredictable variations in the market prices of indexed bonds of various maturities. If contingent debt is precluded, then the government may want to depart from a consol maturity structure to exploit covariances among public outlay, the tax base, and the term structure of real interest rates. However, if moral hazard is the reason for the preclusion of contingent debt, then this consideration also deters exploitation of these covariances and tends to return the optimal solution to the consol maturity structure. The issue of nominal bonds may allow the government to exploit the covariances among public outlay, the tax base, and the rate of inflation. But if moral hazard explains the absence of contingent debt, then the same reasoning tends to make nominal debt issue undesirable. The bottom line is that an optimal-tax approach to public debt favors bonds that are indexed and long term.

Schooling Quality in a Cross Section of Countries

Jong-Wha Lee and Robert J. Barro

NBER Working Paper No. 6198
September 1997
JEL Nos. I21, J24
Public Economics

We investigate the determinants of educational quality in a panel dataset that includes output and input measures for a broad number of countries. The results show that family inputs and school resources are related closely to school outcomes, as measured by internationally comparable test scores, repetition rates, and dropout rates. Family characteristics, such as income and education of parents, have strong effects on student performance. Our findings also indicate that more school resources—especially smaller class sizes, but probably also higher teacher salaries and greater school length—enhance educational outcomes.

Environmental Taxes and the Double-Dividend Hypothesis: Did You Really Expect Something for Nothing?

Don Fullerton and Gilbert E. Metcalf

NBER Working Paper No. 6199
September 1997
JEL Nos. H2, Q2
Public Economics

The "double-dividend hypothesis" suggests that increased taxes on polluting activities can provide two kinds of benefits: first, an improvement in the environment; second, an improvement in economic efficiency from the use of environmental tax revenues to reduce other taxes, such as income taxes, that distort labor supply and saving decisions. In this paper, we make four main points. First, the validity of the double-dividend hypothesis logically cannot be settled as a general matter. Second, the focus on revenue in this literature is misplaced. Three policies have equivalent impacts on the environment and on labor supply. One of those policies raises revenue from the environmental component of the reform; another loses revenue; and a third has no revenue associated with it. Next, what matters is the creation of privately-held scarcity rents. Policies that raise product prices through some restriction on behavior may create scarcity rents. Unless those rents are captured by the government, such policies are less efficient at ameliorating an environmental problem than policies that do not create rents. Finally, we distinguish between two types of command and control regulations on the basis of whether they create scarcity rents.

Capital Income Taxes and the Benefit of Price Stability

Martin Feldstein

NBER Working Paper No. 6200
September 1997
JEL Nos. E3, E5, E6, H2
Economic Fluctuations and Growth, Monetary Economics, and Public Economics

Going from low inflation to price stability involves a short-term loss (associated with the higher unemployment rate required to reduce the inflation) and results in a series of welfare gains in all future years. The primary source of these gains is the reduction in the distortions that result from the interaction of tax rules and inflation. This paper quantifies the gains associated with reducing the distortion in favor of current consumption rather than future consumption, and in favor of the consumption of owner-occupied housing. These tax effects are much larger than the effect on the demand for money that is generally emphasized in studies of the distorting effect of inflation. The seignorage gains are also small in comparison to other effects of the tax-inflation interaction. My estimates imply that the annual value of the net benefits of going from 2 percent inflation to price stability are about 1 percent of GDP. Discounting this growing stream of benefits at a real discount rate of 5 percent implies a net present value of roughly more than 30 percent of GDP. All estimates of the short-run cost of going from low inflation to price stability are less than this.

Monetary Policy Regimes and Economic Performance: The Historical Record

Michael D. Bordo and Anna J. Schwartz
NBER Working Paper No. 6201
September 1997
JEL Nos. E42, E52
Monetary Economics

Monetary policy regimes encompass the constraints or limits imposed by custom, institutions, and nature on the ability of the monetary authorities to influence the evolution of macroeconomic aggregates. This paper surveys the historical experience of both international and domestic (national) aspects of monetary regimes from the nineteenth century to the present. First we survey the experience of four broad international monetary regimes: the classical gold standard, 1880–1914; the interwar period, in which a short lived restoration of the gold standard prevailed; the postwar Bretton Woods international monetary system, 1946–71, indirectly linked to gold; the recent managed float period, 1971–95. Then we present in some detail the institutional arrangements and policy actions of the Federal Reserve in the United States as an important example of a domestic policy regime. The survey of the Federal Reserve subdivides the demarcated broad international policy regimes into a number of episodes.

One salient theme in our survey is that the convertibility rule or principle that dominated both domestic and international aspects of the monetary regime before World War I has since declined in its relevance. At the same time, policymakers within major nations placed more emphasis on stabilizing the real economy. Policy techniques and doctrine that developed under the pre-World War I convertible regime proved to be inadequate for dealing with domestic stabilization goals in the interwar period, setting the stage for the Great Depression. In the post-World War II era, the complete abandonment of the convertibility principle, and its replacement by the goal of full employment, combined with the legacy of inadequate policy tools and theory from the interwar period, set the stage for the Great Inflation of the 1970s. The lessons from that experience have convinced monetary authorities to reemphasize the goal of low inflation, as it were, committing themselves to rule-like behavior.

Chinese Rural Industrial Productivity and Urban Spillovers

Yusheng Peng, Lynne G. Zucker, and Michael R. Darby
NBER Working Paper No. 6202
September 1997
JEL No. O10
Productivity

Rural industry in China has grown three times faster than China's GDP, surpassing agriculture by 1987, and now nearing half of the total Chinese economy. We use a rich, new county-level dataset to explore this dramatic growth. We find that a Cobb-Douglas production function explains more than 80 percent of the variation across counties in rural industrial output per capita in 1991. Idiosyncratic regional or provincial fixed effects play only a small role. There is a very large effect on productivity that comes from being near cities—(a county that is one standard deviation above average in its proximity to population centers) has 30 to 35 percent higher productivity because of the transfer of embodied technology from urban residents. We find strong support for the hypothesis that saving out of past agricultural income has provided start-up capital for rural enterprises. However, higher land-labor ratios lead to greater allocation of labor and capital to agriculture than to industry. Induced inflows of migrants reduce the effect on industrial labor, though. Proximity to cities and more education increase both capital and labor in rural industry. Provincial fixed effects, possibly reflecting local commercial and migration policies, have substantial explanatory power—one third or more—for industrial labor and capital.

Vertical Multinationals and Host-Country Characteristics

Kevin H. Zhang and James R. Markusen
NBER Working Paper No. 6203
September 1997
JEL Nos. F12, F23, O10
International Trade and Investment

The literature on multinationals and developing countries has examined the causality that runs from direct investment to changes in country characteristics (wages, productivity, skills, and the like) and the opposite direction of causality, from existing country characteristics to inward direct investment. This paper contributes to the latter line of research, inquiring into what country characteristics, particularly market size and labor-force composition, attract inward investment. This approach is motivated by the observation that the poorest countries attract a far smaller share of world direct investment than their share of income. Small markets receive less investment per capita than larger ones. We develop a model that generates both stylized facts in equilibrium, suggesting the existence of a development trap for small, skilled-labor-scarce countries.

Stronger Protection or Technological Revolution: What is Behind the Recent Surge in Patenting?

Samuel Kortum and Josh Lerner

NBER Working Paper No. 6204
September 1997
JEL Nos. O30, O32, O34
Productivity

We investigate the cause of an unprecedented surge in U.S. patenting over the past decade. Conventional wisdom points to the establishment of the Court of Appeals of the Federal Circuit by Congress in 1982. We examine whether this institutional change, which has benefitted patentholders, explains the burst in U.S. patenting. Using both international and domestic data on patent applications and awards, we conclude that the evidence is not favorable to the conventional view. Instead, it appears that the jump in patenting reflects an increase in U.S. innovation spurred by changes in the management of research.

Foreign Direct Investment and Employment: Home Country Experience in the United States and Sweden

Magnus Blomström, Gunnar Fors, and Robert E. Lipsey

NBER Working Paper No. 6205
October 1997
JEL Nos. F23, J23
International Trade and Investment

We compare the relationship between foreign affiliate production and parent employment in U.S. manufacturing multinationals to that in Swedish firms. U.S. multinationals appear to have allocated some of their more labor intensive operations, selling in world markets to affiliates in developing countries, reducing the labor intensity in their home production. Swedish multinationals produce relatively little in developing countries; most of that has been for sale within host countries with import-substituting trade regimes. The great majority of Swedish affiliate production is in high-income countries, the United States and Europe, and is associated with more employment, particularly blue-collar employment, in the parent companies. The small Swedish-owned production that does take place in developing countries also is associated with more white-collar employment at home. The effects on white-collar employment within the Swedish firms have grown smaller and weaker over time.

Trends in the Well-Being of American Women, 1970–1995

Francine D. Blau

NBER Working Paper No. 6206
October 1997
JEL Nos. J16, J31
Labor Studies

This paper examines the trends in the well-being of American women over the last 25 years, a time of significant changes in the relative economic status of women and in the labor market as a whole. I consider a broad range of indicators to capture changes in women's well-being in the family as well as in the labor market. For virtually all age and education groups, there is substantial evidence of rising gender equality in the labor market, notably in labor force participation, wages, and occupational distributions. There is also broad evidence of greater gender parity within married couple families, as the time doing housework of husbands has increased relative to that of wives, and the relative wages of wives rose when compared to their husbands' wages. However, parallel to the recent evidence of the declining labor market position of lower skilled men, there has been a similar deterioration in the economic status of less educated women, especially of high school dropouts. Their labor force participation rates and wages have risen at a much slower pace than those of more highly educated women, while their incidence of being single heads of households has increased much more rapidly. These findings for less educated women serve to underscore the widening gap between more and less skilled Americans of both sexes, as well as to emphasize its broad dimensions.

Where is the Market Going? Uncertain Facts and Novel Theories

John H. Cochrane

NBER Working Paper No. 6207
October 1997
JEL Nos. G12, E3
Asset Pricing and Economic Fluctuations and Growth

Will the stock market provide high returns in the future as it has in the past? The average U.S. stock return in the postwar period has been about 8 percent above Treasury bill rates. But that average is measured poorly: the standard confidence interval extends from 3 percent to 13 percent. Furthermore, expected returns are low at times like the present, with high prices. Therefore, the statistical evidence suggests a period of low average returns, followed by a slow reversion to a poorly measured long-term average.

I turn to a detailed survey of economic theory to see if models that summarize a vast amount of other information shed light on stock returns. Standard models predict nothing like the historical equity premium. After a decade of effort, a range of drastic modifications to the standard model can account for the historical equity premium. It remains to be seen whether the drastic modifications and a high equity premium, or the standard model and a low equity premium, will triumph in the end. Therefore, economic theory gives one reason to fear that average excess returns will not go back to 8 percent after the period of low returns signaled by today's high prices.

I conclude with a warning that low average returns do not imply that one should change one's portfolio. Someone has to hold the market portfolio; one should only deviate from that norm if one is different from everyone else.

NBER Historical Papers

Business Activity and the Boston Stock Market, 1835–1869

Jeremy Atack and Peter L. Rousseau

NBER Historical Paper No. 103
August 1997
JEL Nos. N21, N11, N61, G1
Development of the American Economy

This paper examines the performance of the Boston stock market, the nation's premier market for industrials, between 1835 and 1869. We develop new indexes of price performance, dividend yields, and total holding period returns for bank stocks and industrial equities, using annual data from Martin [1871]. Using these new series and a set of vector autoregression models, we conclude that disturbances in the banking sector, as manifested by declines in total stockholder returns, led to increases in short-term lending rates which in turn led to declines in the price performance of traded manufacturing firms. There is no evidence of feedback from manufacturing returns to bank stock prices via lending rates. These findings are consistent with a key role for banks in 19th century business fluctuations.

NBER Technical Papers

Measuring Predictability: Theory and Macroeconomic Applications

Francis X. Diebold and Lutz Kilian

NBER Technical Working Paper 213
August 1997
Economic Fluctuations and Growth

We propose a measure of predictability based on the ratio of the expected loss of a short-run forecast to the expected loss of a long-run forecast. This predictability measure can be tailored to the forecast horizons of interest, and it allows for general loss functions, univariate or multivariate information sets, and stationary or nonstationary data. We propose a simple estimator, and we suggest resampling methods for inference. We then provide several macroeconomic applications. First, based on fitted parametric models, we assess the predictability of a variety of macroeconomic series. Second, we analyze the internal propagation mechanism of a standard dynamic macroeconomic model by comparing predictability of model inputs and model outputs. Third, we use predictability as a metric for assessing the similarity of data simulated from the model and actual data. Finally, we sketch several promising directions for future research.

Moment Estimation with Attrition

John M. Abowd, Bruno Crépon, and Francis Kramarz

NBER Technical Working Paper No. 214
August 1997
JEL Nos. C13, C33, D21
Labor Studies

We present a method that accommodates missing data in longitudinal datasets of the type usually encountered in economic and social applications. The technique uses various extensions of "missing at random" assumptions that we customize for dynamic models. Our method, applicable to longitudinal data on persons or firms, is implemented using the Generalized Method of Moments with reweighting that appropriately corrects for the attrition bias caused by the missing data. We apply the method to the estimation of dynamic labor demand models. The results demonstrate that the correction is extremely important.

Evaluating Density Forecasts

Francis X. Diebold, Todd A. Gunther, and Anthony S. Tay

NBER Technical Working Paper No. 215
October 1997
JEL No. C5
Economic Fluctuations and Growth

We propose methods for evaluating density forecasts. We focus primarily on methods that are applicable regardless of the particular user's loss function. We illustrate the methods with a detailed simulation example, and then we present an application to density forecasting of daily stock market returns. We discuss extensions for improving suboptimal density forecasts, multi-step-ahead density forecast evaluation, multivariate density forecast evaluation, monitoring for structural change and its relationship to density forecasting, and density forecast evaluation with known loss function.

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