Program Report

Development of the American Economy
Claudia Goldin

The NBER's Program on the Development of the American Economy (DAE) includes research on labor and population, industrial organization, financial and macroeconomic history, and political economy. Yet all of its members are engaged in the "objective quantitative analysis of the American economy," the stated mission of the NBER. The NBER was established 75 years ago to inform contemporary policy debate. Wesley C. Mitchell, the first president of the NBER, was an economic historian who appreciated the need to produce data and the difficulty in doing so. He also recognized that history was essential to the policy debates of his age, and for the same reason it is essential to those of ours: it is risky and foolish to base conclusions on potentially transient phenomena. The central task of the DAE program today is precisely that which led to the formation of the NBER: informing current policy debate through the use of historical data and analysis.

This summary highlights some of the work of a subgroup of DAE researchers who have been concerned mainly, although not exclusively, with labor and population issues. How economies and regions became integrated economically (and sometimes became disintegrated) is central to several projects that emphasize the role of factor flows, particularly flows of labor, but also of capital and commodities. Some of the work deals with distributional issues, such as the roles of education and technology in affecting the wage structure. Other papers focus on how human capital investments in education and health enhance labor productivity, change labor supply, and alter longevity and the quality of life. Still others seek the causes and labor market impact of institutional change, for example government provision of social insurance and the extension of publicly provided education.

Convergence and Market Integration

Jeffrey G. Williamson, jointly with Alan Taylor and other coauthors, is engaged in research on the impact of commodity and factor flows on convergence since 1850. Their work points to two golden ages of conver-
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gence among the current OECD countries—from 1850 to 1914, and from 1950 to 1995—as well as one period when it stopped, between 1914 and 1950. To deal explicitly with multifactor theories of convergence, Williamson has assembled annual time series of purchasing-power-parity (PPP) adjusted real wages for 17 Old World (European) and New World countries. Most Old World countries had far lower real wages than the New World countries did. For example, in the 1880s Sweden's real wages were 0.39, and Norway's were 0.44, of those in the New World. But just 25 years later, there was considerable catch-up, with Sweden's wage increasing to 0.56, and Norway's to 0.67, of the New World's.

Various papers in this project demonstrate that open-economy forces, often ignored in the growth literature, explain a large share of the convergence of PPP-adjusted real wages between 1850 and World War I. According to these studies, mass migrations within Europe, and between Europe and the New World, account for a large part of the convergence. And these migrations, which were the greatest in world history, in turn were slowed by the convergence in standards of living.

Commodity trade, as once suggested by Heckscher and Ohlin, was another major factor. World transportation costs plummeted in the late nineteenth century, and the ensuing commodity price convergence reinforced that from factor flows. Both fostered convergence in factor prices and labor productivity among various OECD nations. The next phase of this project explains why convergence stopped abruptly around 1914, not to resume again until 1990.

The integration of domestic labor markets is central to the work
of Robert A. Margo and Joshua L. Rosenbloom. Margo's work has explored the antebellum economy, whereas Rosenbloom's looks at the late nineteenth century. Margo has continued his longstanding work, assembling a new index of nominal and real wages at the regional level for skilled and unskilled workers from 1820 to 1860.4 He finds that there was considerable wage convergence within but not between regions; that differentials in wages between artisans and laborers did not widen over the period; and that the gap between farm and nonfarm wages was small.5 His most recent work on this project, an investigation of the price of urban housing, concludes that antebellum increases in the real wage have been overstated in the absence of a true cost-of-housing index.6

Rosenbloom's work, for the later period, reinforces Margo's and finds that there was substantial integration within regions, as well as among areas of the country outside the South, in the market for manufacturing workers. But he also finds that labor markets in the North and South continued to be largely separate, at least until 1920.7

In related work, Rosenbloom explores information flows for long-distance migrations, and finds that decentralized and informal modes of communication effectively mobilized large-scale movements of labor. It is all the more curious that integration between the North and the South was delayed so long. Rosenbloom points to mechanisms developed by northern employers to recruit European immigrants, and the absence of those mechanisms in recruiting southern labor until the 1920s.8

**Longevity and Labor Force Participation**

Dora L. Costa has written several papers on why retirement rates increased in the twentieth century. Using a unique natural experiment—the Union Army pension—Costa finds that increased wealth had a large positive effect on retirement (the elasticity of retirement with respect to the pension was 0.73). Thus, secularly rising income can explain a substantial part of increased retirement before the introduction of Social Security.9 Costa rules out the shift from agriculture as a major factor explaining increased retirement because farmers retired at the same rate as other workers did.10 She also rules out worsening health. For example, heart disease was almost three times as prevalent among older veterans in 1910 as around 1990. Further, in the past unhealthy people continued to work despite their poor health.11

Robert W. Fogel's recent Nobel address points out that the high rates of chronic disease observed among Union Army veterans imply that degenerative disorders are not simply part of the natural process of aging but also are caused by environmental conditions. Therefore, Fogel predicts, because the environmental conditions of early life have improved, lifespans will continue to increase.12 His Nobel address provides a fine summary of his research findings of the past 20 years.

Central to his work are the factors that increased longevity during the last two centuries. Prior to the mid-twentieth century, nutritional increases were paramount. And, in most countries, adequate nutrition has been a distributional problem, rather than one of aggregate shortfalls. Fogel's research draws on findings from economics, history, medicine, physiology, demography, and statistics, and his evidence covers centuries and continents. Although far-reaching in time, space, and methodology, his conclusions are pointed and highly relevant to current policy. His finding that chronic diseases are influenced by early environments informs economic debate regarding the future of Social Security and Medicare.

**Education**

Economists have long viewed education as the engine of twentieth-century growth. What has gone largely unappreciated is that 70 percent of the increase in years of schooling occurred at the secondary level. In a series of papers, I have tracked the rise of the American high school from 1900 to 1960, and created the first state-level dataset on secondary schooling.13 In the states outside the South, the average 18-year-old in 1910 stood only a 10 percent chance of having a high school diploma; by the mid-1930s, the median 18-year-old was a high school graduate.

I also have examined how productivity, state-level income, geographic mobility, and the wage structure were affected by the increase in education. Some of this research extends work I did jointly with Margo on the "great compression" of the wage structure in the 1940s.14 In joint work with Lawrence F. Katz, I find that increased secondary school education caused the premium to white-collar jobs to plummet between 1910 and 1930. In 1909 the average male office worker earned 50 percent more than the average production worker; by 1929 he earned only 12 per-
cent more. Increased education led to the decline of previously "non-competing" groups. We also find that "high-technology" manufacturing firms of the 1920s to 1940s hired disproportionately more high school graduates in blue-collar jobs than other firms did, suggesting that the rise of the high school fueled the increase in American manufacturing labor productivity in the mid-twentieth century.\textsuperscript{15}

My research on twentieth-century education also has explored how the increase in women's college attendance and graduation affected their demographic and labor force experiences. I find that 50 percent of women who graduated from college around 1905 never had children. But women college graduates 50 years later were marrying and having children at almost the same rate as noncollege women.\textsuperscript{16} Differences in the demographic experiences of college and noncollege women now have widened again. Thirty percent of women who received a bachelor of arts degree around 1970 have not yet borne a child.\textsuperscript{17}

### Social Insurance

Workers' compensation (WC) was the first social insurance program in the United States. Passed by almost all states between 1910 and 1930, WC was a major victory for progressives. In a series of papers, Price V. Fishback and Shawn E. Kantor have investigated why a winning coalition that supported state intervention was formed. Fishback and Kantor find that workers were constrained in their ability to purchase private accident insurance. They insured through other, second-best means before passage of WC.\textsuperscript{18} After passage of WC, the wages of nonunion workers decreased dollar for expected-benefit dollar, implying that workers effectively purchased their higher benefits. Therefore, firms did not pay higher wages for nonunion workers after passage of WC, and their general support for WC was not surprising. Union members experienced smaller wage declines than nonunion workers, and thus benefited the most.\textsuperscript{19} Still, risk-averse nonunion workers, firms, and union members all gained from the passage of WC. Although the passage of WC is easily explained, the form it took among the various states (for example, benefit levels, and state-provided insurance) was the result of complicated bargaining among economic factions.\textsuperscript{20}


\textsuperscript{24}J. L. Rosenbloom, "Was There a National Labor Market at the End of the Nineteenth Century? Intercity and Interegional Variation in Male Earnings in Manufacturing," NBER Historical Paper No. 61, October 1994.


\textsuperscript{29}R. W. Fogel, "Economic Growth, Pop-
Research Summaries

Rules for Monetary Policy

Bennett T. McCallum

In recent years, the economics profession's interest in rules for the conduct of monetary policy has dramatically increased. This has occurred as analysts and central bankers have sought to avoid the inflationary bias that is induced by "discretionary" policymaking (that is, period-by-period optimization), and have come to recognize that rule-based strategies can incorporate activist responses to changing conditions. Furthermore, both analysts and practitioners increasingly have viewed rules not as constraints imposed on central banks by external agencies, such as the U.S. Congress, but as orderly and time-consistent means of operating internally—for example, as explicit starting points for consideration of current policy options.¹

During this period, various researchers—including John B. Taylor, Allan H. Meltzer, Martin Feldstein and James H. Stock, Robert E. Hall and N. Gregory Mankiw, and John P. Judd and Brian Moyle—have proposed alternative monetary rules to be considered by central banks whose policies are not strictly limited by exchange rate commitments. My own work has emphasized variants of a rule that treats nominal GNP as the target variable and the monetary base as the instrument, with base growth rates set each quarter to keep the growth in nominal GNP close to a steady noninflationary path. (Here "noninflationary" might mean 1 or 2 percent per year; for this discussion, we will treat the target trend inflation rate as given.)

In terms of the nominal GNP (or GDP) target, some critics favor traditional monetary aggregates and others prefer direct targeting of the price level, or some other weighted average of price level and real output variables. I tend to favor GDP over the monetary aggregates, because keeping its growth close to the target value will result in inflation close to the desired rate on average, that is, over a decade or so. That might not be true for M1 or M2; the recent "stability" of M2 velocity may not hold in the future. In addition, GDP seems preferable to direct price level targets, even if inflation control is the main goal for the central bank for three reasons. First, because prices evidently react more slowly than output in response to monetary actions,⁵ cycling and instability are more likely with a price level (or inflation) target. Second, a smoothed path for nominal GDP is probably better suited to stabilizing output than is a smoothed path of the price level.⁴ We cannot be certain about this, because the profession has a very poor understanding of the short-run dynamic interactions between nominal and real variables, and of the magnitude and correlation of various types of shocks. But this poor understanding suggests, third, that it is more difficult to design a rule for achieving inflation targets than for GDP growth targets: the former requires an understanding of forces determining the split of nominal GDP growth into its inflation and real growth components.

Some economists, including Hall,⁵ would prefer a target that
gives more weight to output movements and less to inflation than does a GDP target, which weights them equally. But a counterargument is that choice of some "optimal" weights again relies on knowledge that the profession does not possess. To favor GDP targeting is not to claim that it is optimal, but that it would provide a simple scheme that is likely to work moderately well under a variety of conditions.

One practical objection is that GDP statistics are not produced often or quickly enough, and are revised significantly after their first release. But the essence of the approach is to use some comprehensive measure of nominal spending; it need not be GDP or GNP. Other measures surely could be developed on the basis of price and quantity data that are collected more often and more promptly.

Concerning the use of a monetary base instrument, most central banks actually use an interest rate instrument, and some analysts suggest that this is desirable. Indeed, the variability of short-term interest rates probably would be substantially greater with the base kept on a rule-specified path week by week, and banks thus would be forced to hold an increased volume of excess reserves. It is unclear, however, that the consequent social costs would be sizable.

In any event, in a recent paper I investigated the possibility of using an interest rate instrument—and smoothing its movements weekly—so as to keep monetary base values close to quarterly "intermediate target" levels, with these levels dictated by the monetary policy rule that I am discussing. Although only a preliminary investigation of the topic, the study attempts to account realistically and quantitatively for variations in shocks and responses of the U.S. economy. It suggests that the federal funds rate could be manipulated weekly to hit base targets designed to yield desirable quarterly GNP targets, with considerable smoothing of the funds rate on a weekly basis, and not too much more variability than now exists.

Then why not simply express the policy rule in terms of quarterly settings of an interest rate instrument? First, interest rates have (as is widely known) ambiguous meanings regarding the stance of monetary policy: the funds rate may be high either because of current tightness or because of past looseness of monetary policy. In practical terms, this implies a much more complicated policy feedback rule than one involving the monetary base. In my own simulation studies, for instance, I have not been able to find a simple interest rate rule that performs nearly as well as a base rule.

The studies that I have conducted over several years have been designed in part to determine whether a simple and operational feedback rule, one that adjusts base growth settings in response to past long-term changes in velocity (reflecting institutional change) and recent GNP target misses, would keep GNP close to its target path when the system is buffeted by the type of shocks that have been experienced historically. The main difficulty in conducting appropriate simulations is in choosing the correct model of the economy. I presume that we cannot be confident about the correct model, and proceed by asking whether any rule under investigation yields reasonably good results in a variety of different models.

In my studies of the U.S. and Japanese economies, the type of rule I just described has performed quite well. Thus, in my 1988 study, I conducted simulations with two single-equation atheoretic specifications, six different vector autoregression systems, and three models that are intended to be structural (that is, policy invariant). These latter models are quite small in scale, but are designed to represent leading alternative theories of business cycle dynamics—specifically, the real business cycle theory of Kydland and Prescott; the monetary-misperceptions theory of Lucas and Barro; and a more Keynesian theory patterned on the Phillips-curve and price-adjustment relationships of the Fed's quarterly MPS model.

My results for the U.S. economy pertain to counterfactual simulations for 1954/1–85/4 in systems that include the policy rule and one of the models indicated above. In each case, the simulation begins with initial conditions that actually prevailed at the beginning of 1954, and continues with shocks fed into the system each quarter. A feedback policy parameter, measuring the strength of responses of base growth to the previous period's GNP target miss, varies from 0 to 0.5. I find that for policy parameter values ranging from 0.1 to more
than 0.25, performance is satisfactory in all models, and distinctly superior to performance with a parameter of zero. Higher parameter values give rise to the possibility of dynamic instability. With moderate values, the rule succeeds in generating paths of nominal GNP that are noninflationary and, in addition, somewhat smoother than those that have obtained historically.

My two 1990 papers report additional findings with this initial rule. In the first paper, I find that substitution of an explicit price level target, rather than nominal GNP, increases the likelihood of dynamic instability. Also, a few experiments with an interest rate instrument yielded unsatisfactory results.

In the second 1990 paper, I asked whether adherence to my rule for growth of the monetary base would have prevented the Great Depression of the 1930s. I conducted counterfactual simulations for 1923/1–41/4 with a small model of GNP determination, estimated with quarterly U.S. data for 1922–41. My results indicate that nominal GNP would have been kept reasonably close to a steady 3 percent growth path from 1923–41 if the rule had been in effect. In that case it seems highly unlikely that output and employment would have collapsed, as they in fact did.

One important feature of my research is that the rules I study are all operational, that is, based on instrument variables that a central bank could control accurately, and on information that is plausibly available. Furthermore, their design does not presume advance knowledge of average velocity growth rates, as do some rules studied in the literature.

The robustness of my findings was challenged at the Federal Reserve Board of Governors by G. D. Hess, D. H. Small, and F. Bratton. One of their valid arguments is that the set of models that I consider is too limited. A second argument is that, even with my own models, there has been a breakdown in performance since 1985. But in their work, as in my initial studies, the GNP target was constantly growing, thus calling for a return to a prespecified path after shocks had driven the system away from that path. I have come to believe over the years, however, that growth rate targets perhaps would be preferable, in which case past misses would be treated as bygone. If shocks hitting the economy are predominantly permanent or highly persistent, instead of being highly transitory, then it would be best to treat past misses of the target as bygones. But with GNP growth rate targets, there is in fact very little deterioration in performance in the years since 1985. (I report these results in the paper cited in endnote 6.)

Nevertheless, there are some reasons for favoring a target with growing levels that does not treat past misses as bygones. Consequently, I have also considered targets that are weighted averages of the two types just discussed. A weighted average target, with a weight of 80 percent for the growth rate path and 20 percent for the growing-levels value, yields results that are quite desirable. The root-mean-squared (RMS) target misses relative to the growth rate target path are virtually the same as when we aim for growth rate targets, and the RMS behavior relative to a growing-levels path is reasonably good. There is a distinct tendency for the simulated GNP values to return to the growing-levels path, rather than drifting away arbitrarily far (as is the case when pure growth rate targeting is pursued). Therefore, these weighted average targets seem quite attractive, and the satisfactory results for the post-1985 period obtain for them, as well as for the growth rate targets.

In conclusion, I acknowledge valuable contributions to this line of work that have been provided by Judd and Motley, and by Michael J. Duecker. Specifically, Judd and Motley have extended the analysis by conducting stochastic simulations, rather than simulations using historic residuals, and by carrying out additional experiments with an interest rate instrument. Duecker, by contrast, has investigated the performance of one of the rules I discussed here in simulations in which the model's parameters are subject to stochastic shocks.

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Footnotes:
3This is suggested by many time-series studies, including L. J. Christiano, M. Eichenbaum, and C. Evans, "The Ef-


An Overview of Monetary Policy

Christina D. Romer and David H. Romer

Two features unite much of our recent research. Most obviously, many of the papers deal in one way or another with monetary policy: we have examined both the effects of monetary policy and the mechanism by which monetary policy influences real output. We have also examined the historical record to discover the role of monetary policy in both starting and ending recessions in the United States.

The second, and perhaps more important unifying characteristic of our research is its methodology. Many of our papers augment standard statistical procedures with a scientific analysis of qualitative evidence. This method, which we have dubbed the "narrative approach," involves using government reports, periodicals, and other sources to glean information not reflected in economic statistics. While such qualitative evidence is frequently used by economists in their more casual analysis, a crucial feature of the narrative approach is its systematic use of this evidence.

The Effects of Monetary Policy

To a layman, the question "Does monetary policy matter?" probably seems absurd. Of course it matters—why else would it be front page news every time the Federal Reserve moves interest rates up or down? But to economists, the question is both serious and fundamentally important. Many of our hypotheses about how the economy works imply that changes in monetary policy, especially those that are widely recognized and anticipated, do not matter. Furthermore, the correlation between money and output is not enough to prove that monetary policy matters, because the direction of causation is ambiguous: high growth of the money supply may cause rapid output growth, or rapid output growth may cause banks to lend more, and hence cause increases in the money supply.

Over the last few decades economists have used various statistical techniques to try to skirt the issue of causation, but with only limited success. For this reason, in "Does Monetary Policy Matter?" we turned to the narrative approach pioneered by Milton Friedman and Anna J. Schwartz in their monumental NBER study, A Monetary History of the United States.1 Friedman and Schwartz's insight was to use additional evidence from the historical record to separate the
changes in the money supply that occur endogenously when output rises or falls from those that occur because of policy actions, or more frequently in their prewar period of analysis, policy mistakes.

Our application of Friedman and Schwartz's insight to the postwar era took the following systematic form. Using both the Record of Policy Actions and the Minutes of the Federal Open Market Committee of the Federal Reserve, we looked throughout the postwar era for episodes when monetary policymakers changed their tastes or expectations about inflation. In particular, we identified six episodes between 1947 and 1987 when monetary policymakers decided that the current level rate of inflation was too high, and they were willing to accept output losses to bring it down.

Having identified these six episodes, we then looked at the behavior of industrial production and unemployment in the months following these decisions. We found that real output most definitely declined following these policy changes, even when we controlled for the usual cyclical dynamics of output. Indeed, we estimated that a monetary policy shock leads to a decline in industrial production (relative to its usual behavior) of 4 percent after 12 months, 9 percent after 24 months, and 12 percent at its peak effect, which occurs after 33 months.

In a more recent paper, we find that this conclusion is strengthened by the passage of time.2 In December 1988 the Federal Reserve again decided to lower the rate of inflation despite the likely negative effect on real output. When this additional observation is included in our original regressions, the results essentially are unchanged. We also find that our conclusions are robust to careful treatment of oil price shocks. No amount of fiddling with supply shock variables or our basic specification alters the conclusion that monetary policy clearly matters.

The Transmission Mechanism

Our finding that monetary policy has large effects on output naturally led to the question of how monetary shocks are transmitted to the rest of the economy. Since the work of Keynes, it generally has been presumed that interest rates are the key component of this transmission mechanism. A cut in reserves by the Federal Reserve forces a reduction in demand deposits, and this leads to a rise in interest rates to equilibrate money supply and money demand. The rise in interest rates then chokes off interest-sensitive spending, such as investment and purchases of consumer durables.

In recent years economists have augmented this "interest rate channel" of the transmission mechanism with a "credit channel."3 In its simplest formulation, the credit channel view suggests that a decline in reserves causes a particular decline in bank credit because bank liabilities are subject to reserve requirements, while liabilities of other lenders are not. Since small firms typically can borrow only from banks, this particular impact on bank credit makes it very costly or difficult for small firms to borrow, and hence affects their behavior above and beyond the general impact of monetary policy on interest rates.

In "New Evidence on the Monetary Transmission Mechanism" we provide both theoretical and empirical evidence against this simple bank credit channel of the transmission mechanism. At a theoretical level, we show that a reduction in reserves forces a reduction in bank loans only if banks have no ways to raise funds that are not subject to reserve requirements. However, for much of the postwar era U.S. banks have been able to issue certificates of deposit (CDs), which are subject to no reserve requirements, or to only very small ones. Thus, there is a strong reason to be skeptical of the bank credit channel.

Our empirical evidence reinforces this skepticism. One test that we perform compares the correlations between output and both money and bank loans in the quarters directly following monetary shocks with those correlations in more ordinary periods. We argue that the correlation with output will be higher for a key transmitting variable around monetary shocks than at other times, because the usual noise in the relationship will be swamped by the monetary shock. We find that the money-output relationship is indeed much stronger around monetary policy shocks, whereas the lending-output relationship does not vary inside and outside our critical episodes. Because more detailed regressions confirm this simple test, we conclude that the conventional interest rate channel is the key component of the transmission mechanism.

Jeffrey A. Miron, Christina D. Romer, and David N. Weil use historical evidence to evaluate the relative merits of the interest rate and bank credit channels of the transmission mechanism.5 They show first that the changes in financial institutions that have occurred over time imply that the relative strength of the bank credit channel should have declined between the prewar and postwar eras. For example, be-
cause nearly all bank liabilities were subject to substantial reserve requirements before 1914, while CDs have no reserve requirement today, one would expect the bank credit channel to be stronger before World War I than after World War II.

They then look at various indicators of the strength of the two channels of monetary transmission. One indicator that they consider is the spread between the bank loan interest rate and the commercial paper rate. The fact that this spread rises around recent monetary policy shocks has been used to argue that the bank credit channel is important in the postwar period. Looking at the spread around monetary shocks in the past, however, reveals little systematic relationship, and certainly no evidence of the predicted decline in the bank credit channel over time. From this, the three authors conclude either that measures such as the spread are poor indicators of the bank credit channel, or that the bank credit channel has been weak throughout the twentieth century.

We provide an alternative explanation for the apparent disproportionate impact of monetary policy on bank loans in the postwar era. We find that, for much of the postwar era, the Federal Reserve has augmented conventional monetary tightening with actions specifically aimed at curtailing bank loans. An obvious example of one of these "credit actions" occurred in late 1979 and early 1980 when the Federal Reserve accompanied its monetary tightening with special reserve requirements and formal credit controls. A more subtle example of a credit action occurred in 1969 when the Federal Reserve prohibited loan repurchase agreements, and placed new reserve requirements on the Eurodollars that banks were using to raise loanable funds.

When we include the dates of credit actions in regressions of the spread, or the composition of external finance between bank loans and commercial paper (the mix), on the dates of monetary contractions, we find that credit actions greatly reduce the measured impact of monetary contractions. From this we conclude that much of the apparent credit channel of monetary transmission is really the effect of explicit credit actions. The seeming absence of a bank credit channel in recent years is caused by the fact that the Federal Reserve has stopped using credit actions.

The fact that controlling for credit actions does not eliminate all evidence of a credit channel is consistent with recent research on lending to small firms. Mark Gertler and Simon Gilchrist show that loans to small firms from all sources decline following monetary contractions. They suggest that this is because small firms become less creditworthy when interest rates are high and output is low. Our results are certainly not at odds with their finding that there is a "balance sheet channel" to the transmission mechanism.

The Policy Record

In "What Ends Recessions?" our focus changes from how and why monetary policy matters to how well policymakers actually have used policy in the postwar era. In particular, we examine the contributions of monetary and fiscal policies to the recoveries from the eight recessions in the United States between 1950 and 1993.

The first step in our analysis is to establish the policy record for the postwar era. We use the change in the real federal funds rate as our measure of discretionary monetary policy, the change in the ratio of the high-employment surplus to trend GDP as our measure of discretionary fiscal policy, and the ratio of the difference between the actual surplus and the high-employment surplus to trend GDP as our measure of automatic fiscal stabilizers. We find that monetary policy typically switches toward aggressive expansion very soon after the peak in economic activity. Averaged over the eight postwar recessions, the real federal funds rate falls just slightly over 2 percentage points between the peak and one quarter after the trough. In contrast, the ratio of the high-employment surplus to trend GDP hardly changes at all until the quarter after the trough, and even then shifts only slightly toward expansion. Finally, the ratio of the automatic surplus to trend GDP moves a moderate amount toward expansion roughly concurrent with recessions.

Since no statistical indicator can provide a perfect measure of the stance of policy, we check the behavior of our policy measures against both the Federal Reserve Board's Record of Policy Actions and the Economic Report of the President. We find that the declines in interest rates correspond closely to deliberate actions taken by the Federal Reserve to counteract the recessions. The modest falls in the high-employment surplus also correspond to deliberate antirecessionary actions, albeit limited ones, on the part of Congress and the president.

In a more speculative part of the paper, we combine our measures of policy actions with estimates of the effect of policy to derive estimates of the contribution of various...
policies to real growth in the years following troughs. The results of this analysis for one reasonable set of policy multipliers shows that, on average, monetary policy actions taken after the peak in economic activity contribute 1.6 percentage points to real GDP growth in the first year of recoveries, while discretionary fiscal policy actions contribute only 0.3 percentage points. Automatic stabilizers contribute a small to moderate amount (0.6 percentage points). Based on these historical results, we conclude that monetary policy is a fast and effective tool for ending recessions.

In a paper that is similar in spirit to "What Ends Recessions?" Christina Romer analyzes the recovery from the Great Depression in detail. In many ways this recovery was spectacular: between 1933 and 1937, real GDP increased at an annual rate of over 8 percent per year; between 1939 and 1942, real GDP grew at an annual rate of over 10 percent per year. Despite these rapid growth rates, there has been little analysis of their cause. Most scholars attribute the recovery from the Great Depression to either the fiscal expansion of the New Deal and World War II, or to the economy's natural self-correction mechanism.

"What Ended the Great Depression?" reminds readers that in addition to fiscal expansion, the mid- and late 1930s were also years of great monetary expansion: M1 increased by an average annual rate of nearly 10 percent between 1933 and 1937, and at an even higher rate between 1939 and 1942. The early monetary expansion was engineered largely by President Roosevelt, who devalued the dollar in 1933–4 and monetized the resulting gold inflows. The later monetary expansions were also the result of monetized gold inflows,

this time caused by capital flight from war-nervous Europe.

Using policy multipliers derived from two crucial interwar episodes (1921 and 1938), the paper shows that the monetary expansion of the mid- and late 1930s explains most of the rapid growth of output during the recovery from the Great Depression. Indeed, the contribution of monetary developments is so large that there is little remaining growth to attribute to self-correction. Perhaps more surprising, the estimates imply that fiscal expansion, both during the New Deal and even during the late 1930s and early 1940s contributed little to the recovery. The explanation for this finding is that federal fiscal policy was actually not very expansionary during these periods; only in 1942 did the ratio of the high-employment surplus to trend GDP fall substantially. Thus, to the extent that World War II generated the recovery from the Great Depression, it was initially through its effect on the money supply, rather than through its effect on government spending.

The paper goes on to show that there is an obvious mechanism by which the monetary expansion increased real output: estimates of the real interest rate fell precipitously concurrent with the monetary expansion. Furthermore, interest-sensitive spending on investment and consumer durables led the recovery and appear to have responded strongly to the real interest rate declines throughout the recovery period. Thus, the experience of the 1930s confirms both the crucial role of monetary developments in ending recessions and the preeminence of the interest rate channel of monetary transmission.


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Contrarian Investment

Andrei Shleifer and Robert W. Vishny

For over 30 years, the efficient markets hypothesis (EMH) has remained the central proposition of financial economics. The EMH states that, as an empirical matter, prices at which securities trade in liquid financial markets are equal to their fundamental values, given by the expected present values of the cash flows accruing to these securities. In other words, the stock market prices securities at their fair values. Although the EMH flies in the face of the conventional wisdom that astute analysts can beat the market, it has withstood many empirical challenges for decades, becoming a textbook wisdom for most economists. In particular, the implication of EMH that investment strategies based on public information, including those practiced by mutual funds, cannot beat the market, has survived hundreds of tests.

In recent years, a new set of challenges to the EMH has appeared, based on some very old ideas about contrarian investment. These ideas, dating back to Graham and Dodd, state that investing in value stocks—defined as stocks with low prices relative to some measures of their current fundamentals, such as earnings or dividends—is more attractive than investing in growth stocks, those with high prices relative to measures of fundamentals. Although several papers in the 1980s supported the superior returns from contrarian investment strategies based only on publicly available information, the most celebrated study came from the University of Chicago, the cradle of the EMH.

In 1992, Eugene F. Fama and Kenneth R. French reported that, between 1963 and 1990, stocks of companies with high ratios of book values of assets to market price earned higher returns than stocks of companies with low book-to-market (BM) ratios. They found that the spread in returns between portfolios of stocks with high (top 10 percent) and low (bottom 10 percent) BM ratios was on the order of 10 percent per year. Despite finding this enormous benefit to investing in high BM stocks, Fama and French did not interpret the evidence as contradicting the EMH. Rather, they argued that the high BM stocks in some special ways might be riskier than the low BM stocks. According to them, this difference in risks, as measured by the difference in BM ratios, explains the difference in average returns.

These empirical findings have stimulated a great deal of further work, including our research with Josef Lakonishok and Rafael La Porta. With Lakonishok, we have looked at a variety of contrarian strategies from 1968 to 1990, and found that there is nothing special about BM as a way to identify value and growth stocks. Many other ratios of price to a measure of fundamentals, such as the price-to-cash-flow ratio, and the price-to-earnings ratio, are also good predictors of returns, generating superior performance of nearly 10 percent per year for value relative to growth stocks. Moreover, all of these ratios reflect the fact that the value stocks tend to be those of companies with poor past performance, whereas the growth stocks are those of firms with good past performance. Thus we confirmed the contrarian wisdom that investing in value stocks—however measured—on average has produced superior returns for investors.

We then went on to propose an interpretation of this evidence that is not consistent with the EMH. We argued that value stocks are out of favor with investors, who extrapolate poor past performance too far into the future. Similarly, the excellent past performance of growth stocks is extrapolated too far into the future by investors. Contrary to such extreme expectations of investors, future performance of value and growth stocks is not nearly as different as it was in the past. In fact, we presented some evidence showing that the earnings performance of value stocks tends to improve, and of growth stocks tends to deteriorate; this is consistent with the view that the market overreacts to past performance and misprices these securities. Thus we attributed the superior performance of contrarian investment strategies not to risk, but to inaccurate expectations of market participants, and the resulting inefficient pricing. In addition, we found no evidence that value stocks are especially risky; these stocks do especially well relative to growth stocks when the market goes down, as well as in recessions.

The empirical evidence bearing on the question of why contrarian investment strategies pay off continues to pour in. La Porta directly tested the idea that inaccurate expectations, rather than risk, explain the evidence. By looking at analysts' forecasts of long-term earnings growth of different stocks, he divided firms into those with ex-
tremely bullish forecasts and those with extremely bearish forecasts. La Porta found that firms with bearish forecasts earn higher future returns than firms with bullish forecasts. Analysts subsequently revise downward their growth forecasts for firms they are bullish about, and revise upward their growth forecasts for firms they are bearish on. Not surprisingly, stocks with bullish forecasts tend to be the growth stocks (using the earlier definitions), and stocks with bearish forecasts tend to be the value stocks. La Porta thus provides direct evidence that extreme—and unjustified—pessimism among some investors can explain the current underpricing, and therefore the superior future returns, of value stocks.

With La Porta and Lakonishok, we propose yet another test of the alternative explanations of the returns to contrarian investment. Specifically, if the EMH interpretation of the evidence is correct, and the market on average does not make mistakes about value and growth stocks, then the market should not be surprised, on average, when these companies announce their earnings. In contrast, if the market overreacts to the past performance of value and growth stocks, then it should be disappointed by the earnings of glamour stocks when they are announced, and pleasantly surprised by the earnings of value stocks. A look at the earnings announcements of different companies then perhaps can distinguish the two interpretations. The evidence is not favorable to the EMH: the average return of glamour stocks when their earnings are announced is negative, and that of value stocks is positive. This event study evidence thus favors the extrapolation hypothesis over the EMH.

Of course, this is not the end of the story, and much remains to be done before the dust settles. Although some studies have confirmed the superior performance of value stocks in the United States prior to the Fama-French period, and others found similar results in other countries, doubts about data snooping continue to linger. Many questions remain unanswered on exactly how investor expectations are being formed, and what information causes investors to revise their expectations. Nor is it entirely clear why more investors have not shifted into value strategies, although it is possible that a typical institutional investor does not have a long enough horizon to wait for value to pay off with a high probability. All this research, we hope, will shed new light on the validity of the EMH.

But it can do more than that as well. For example, this research has begun to illustrate the many anomalies concerning the poor performance of professional money managers, who tend not only to fail to beat the market, but actually underperform it, on average, by a significant amount. We conjecture that one possible reason for the poor performance of institutional investors is their preference for holding growth stocks in their portfolios, stemming from the need to impress their investors with a good-looking portfolio. Of course, holding growth stocks can cost dearly in returns. In some of our ongoing research, as well as that by others, indeed we are finding that some of the poor performance of professional investors can be tied to their overexposure to the growth stocks. In this way, our research may illuminate the process by which the pension wealth is managed, as well as the controversies about the EMH.

Historical Economics: U.S. State and Local Government

Richard Sylla, John J. Wallis, and John B. Legler

As Americans reconsider the relative sizes and roles of federal, state, and local government in the federal system, there is renewed interest in how the system functioned and changed in past decades. Twentieth-century trends are well documented. At the start of the century, governments at all levels absorbed and disposed of about one-tenth of gross product; now, near the end of the century, the proportion is about one-third.

Government not only grew relative to the economy; it also became more centralized. The federal share of all governmental revenues and expenditures was approximately one-third when the century began; now it is about two-thirds. The state share of the state and local “fisc” (revenues and expenditures) was about one-seventh in 1902; now it is about one-half.¹

One implication of these trends is that local government, the largest fiscal component (about 60 percent) of the federal system in terms of revenue at the start of the century, is now the smallest—although intergovernmental transfers raise local government to rough parity with state government in terms of expenditures. The reduction in the relative fiscal role of local government was especially rapid in the New Deal years after 1932. Contrary to widespread impressions, government’s growth rate did not accelerate in the 1930s; the significant change in that era was a shift of government spending from the local to the federal level.²

What about the decades before the twentieth century? Was government in the aggregate increasing its share of the U.S. economic pie? Were centralizing trends already in place? And, in what ways did fiscal and other activities of federal, state, and local governments interact with each other and with the private sector?

Initial approaches to these questions reveal several problems. For example, there was virtually no comprehensive quantitative record of state and local fiscal activity for the first century or more of U.S. history. Further, although the data on revenues, expenditures, and debts needed to construct such a record exist in the voluminous reports of state, county, and municipal authorities, it would be a major task to retrieve, codify, and compile them. Fortunately, each of us independently was interested in the questions, and so we formed a partnership to tackle the job. We have made considerable progress in retrieving and processing the data.³ Our ultimate goal is to present and analyze a comprehensive quantitative record of U.S. fiscal federalism from 1790 to the present. This research summary reports on some of our findings to date.

**Government’s Economic Share**

Since our work is still in progress, we can only speculate in an informed way on the trends in government’s share of gross product and fiscal centralization. Federal revenues and expenditures increased as a proportion of gross product over the course of the nineteenth century, but not much. The federal share was in the 1–2 percent range from 1790 to 1860, rising to more than 3 percent by the beginning of this century.⁴ Our findings for several large states (New York, New Jersey, Ohio, and North Carolina), for which our state and local fiscal data for the early decades of U.S. history are most complete, indicate a wide range of variation. Before the Civil War, state and local government in New York raised and spent on a per capita basis well in excess of per capita federal revenues or expenditures. But in North Carolina, at the other extreme, state and local per capita fiscal activity averaged only 30 to 40 percent of federal levels.⁵ In New Jersey and Ohio, per capita state and local revenues and expenditures roughly equaled the per capita federal budget at several ante-bellum dates.

Projecting (very tentatively) on the basis of such partial returns, we think our estimates for the early decades will indicate an overall state and local fiscal share roughly comparable to the federal government’s share of the economy. If that turns out to be the case, then there are implications for the issue of how government’s aggregate share of the economy changed over time. Government’s share increased over the nineteenth century, just as it has in the twentieth. It probably doubled or tripled, from 3–5 percent in the 1790s to 10 percent in 1902.

**Fiscal Concentration**

Another tentative implication is that, unlike in this century, there was no long-term trend toward fiscal concentration in the nineteenth century. Indeed, it is likely that in
the nineteenth century, local government was the fastest growing, and by 1902 the largest fiscal component, of the federal system.

We have asked why local government increased its fiscal share of all government, as well as its share of the whole economy. Our answer involves urbanization, in particular the growth of cities. In 1850, only 15 percent of Americans lived in urban as opposed to rural places; by 1900 it was 40 percent. The population share of larger cities (25,000 or more people) grew even faster, from 9 percent in 1850 to 26 percent in 1900. Our fiscal data indicate that urban governments raised and spent more per capita in the late nineteenth century than either federal or state governments, and that larger cities spent more per capita than smaller ones. The combination of rapid urban population growth and higher per capita public spending in cities increased the size of local government until it accounted for some 60 percent of all government spending at the start of this century. But this was a late nineteenth-century occurrence, and there are reasons to doubt earlier conjectures that local government before the beginning of this century was always the largest fiscal component in the U.S. federal system.

Banks and State Finances

Some interesting findings of our project relate to the intimate fiscal relationships that developed in the early decades between state governments and the banks they chartered. The Constitution took away the rights of states to engage in "currency finance," that is, funding state expenditures with fiat paper money issues. But the states could and did charter banks that issued paper banknotes backed by specie. Given rapid growth in credit demand and early restrictive practices in granting charters, bank charters had considerable value. Realizing this, the states raised public revenues from banks by investing in them, taxing them, or both. By the 1820s, every one of the original states received some portion of its revenue from banks. In several cases, that proportion was substantial. Massachusetts was the leader; the Bay State often derived half or more of its ordinary operating revenues between 1820 and 1860 from a tax on the capital stock of the state's chartered banks. Reliance on bank revenues allowed the states to minimize traditional property taxation, which was unpopular at the state level, although property taxes were the mainstays of local revenue systems.

The importance of the bank-state revenue nexus led us to ask whether the methods of raising bank revenues—either investments in banks or taxation—affected the behavior of the states in chartering and regulating their banks. If a state's fiscal interest in its banks was an investment interest, with revenues from dividends, interest, and capital gains, then the state could have had an incentive to restrict bank entry by limiting the number of bank charters granted and restricting banking competition. On the other hand, if the state's fiscal interest took the form of a tax on inputs (such as bank capital) or results (such as bank assets or earnings), then the state had an interest in expanding the size of its chartered banking sector.

We found that our distinction of two quite different types of fiscal interest was indeed relevant. States that taxed bank inputs and outputs encouraged rapid banking development; states that invested in banks restricted banking development. Still other states did both, at different times. For example, in the early decades when New York had investments in banks and the Democrats, led by Martin Van Buren, "sold" bank charters, the state restricted bank chartering. When the Democrats were defeated in the 1830s, partly because of their rigid political control of bank chartering, New York introduced liberal chartering under so-called Free Banking. The Empire State's banking system then grew rapidly. Moreover, the states with large investment interests in their chartered banks were in the forefront of passing legislation to restrict unchartered "private" banking, which competed with state-chartered banks.

One interesting implication of these early government-business relationships involves the way we view business taxation. Most economists and business people today would argue that taxation of a business activity tends to put a damper on its development. But our "fiscal interest" concept suggests that governments, through regulation, may act to promote, not restrict, the private business activities that they tax.

Debt Crises and Revenue Structures

During the 1820s and 1830s, large-scale internal improvement programs—canals, railroads, banks—were undertaken by many states, usually by means of debt finance. The states borrowed with the expectation that the projects would pay for themselves through operating revenues. If they would not, it was better to borrow most of the funds initially and then spread the higher taxes required to service the
debts over future years (tax smoothing). During the depression of 1839–43, however, nine states defaulted on their debts. Four of these states ultimately repudiated a portion of the debt. Four additional states narrowly avoided default.

Earlier historians saw this debt-default experience of the states as initial carelessness, followed by political cowardice and financial immorality. In recent work, we relate the experience to less judgmental economic and political considerations, namely, the revenue structure of state finances.1 By revenue structure, we mean the mix of investment income, indirect taxes (excises and other business taxes), and direct taxes (mostly property and poll taxes at the time). The written records of the era point to a pecking order of the political costliness of these revenue sources, with investment income as the least costly and direct taxes the costliest form of revenue.

The property tax at the state and federal (not local) levels was very unpopular. If it had to be imposed at all, as in the late 1790s when the federal government was concerned with French and British threats, and during the War of 1812 when state governments helped finance defense, it was dispensed with quickly thereafter by the federal government and a number of state governments. In the state debt crises of the early 1840s, two older states, Pennsylvania and Maryland, had investment and business-tax revenues, but chose to default on their debts rather than impose unpopular direct taxes on property. After their defaults, they reluctantly imposed property taxes, though. The other seven defaulting states were newer, frontier states with limited revenues from investments and limited opportunities for taxing banks and other businesses. Of necessity, these states relied mostly on property taxes for state revenue. Per capita property tax collections were often higher there than in the older states, even though per capita incomes were lower. When their improvement investments failed to pay off, the only option for these newer states in a political sense was to default. Had they raised their already high property taxes to higher levels, they would (as they recognized) lose settlers to other states.

The state debt defaults of the 1840s indicate both a widespread antipathy toward property taxes at the state level and the related importance of revenue structure in determining propensities to default on debt. In the aftermath of the crises, many states imposed constitutional limitations on the incidence of debt. Modern-day debt crises, it seems, have economic and political characteristics similar to those of American states a century and a half ago.


3Preliminary annual data series on revenues and expenditures for the 48 states, covering the years up to 1917, are available through ICPSR. Data for the twentieth century covering state and local governments for some, but not all, years in which a Census of Governments was taken, as well as data for some 100 cities at decade intervals for 1820–80, are also at ICPSR. Data on local governments in 1880 and 1890 are nearly complete and will be released through ICPSR.


NBER Profile: Ben S. Bernanke

Ben S. Bernanke, co-organizer of the NBER's annual Conference on Macroeconomics, is a research associate of the NBER and the Class of 1926 Professor of Economics and Public Affairs at Princeton University. Bernanke received his B.A. in Economics from Harvard University and his Ph.D. from MIT.

He began his career at the Stanford University Graduate School of Business in 1979, moving to Princeton University in 1985. He has been a visiting professor at MIT (twice), and at New York University.

Bernanke also has served as a visiting scholar at the Federal Reserve Banks of Philadelphia, Boston, and New York, and as an advisor to the Federal Reserve Bank of New York. He has authored more than 40 publications in macroeconomics, macroeconomic history, and finance.

Ben's wife of 17 years, Anna, teaches Spanish and Italian. They have two children: Joel, 12, and Alyssa, 8. The Bernakes reside in Montgomery Township, NJ, where Ben is an elected member of the School Board.

NBER Profile: John B. Legler

John B. Legler, who has been an NBER research associate since 1988, is a professor of banking and finance in the Terry College of Business at the University of Georgia. He received his B.A. from Allegheny College and his M.S. and Ph.D. from Purdue University.

Legler began his teaching career as an assistant professor of economics at Washington University in 1966, and moved to the University of Georgia in 1971 as an associate professor of banking and finance and head of the public finance section of the Institute of Government.

His research interests are economic history and state and local public finance.

Legler is a frequent expert witness on behalf of federal and state government agencies in utility rate cases before regulatory agencies. In 1993 he was appointed by Governor Miller of Georgia to the Joint Study Commission on Revenue Structure.

Legler's wife, Libby, is a retail specialist with a major food company. They enjoy vacations at their place on Pensacola Beach overlooking the Gulf of Mexico.
NBER Profile: Julio J. Rotemberg

Julio J. Rotemberg, co-organizer of the NBER's annual Conference on Macroeconomics, is a research associate of the NBER and a professor of economics at MIT's Sloan School of Management. Born in Buenos Aires, he received his B.A. in economics from the University of California, Berkeley, and his Ph.D. from Princeton University.

Rotemberg has taught at the Sloan School since 1980, becoming an associate professor in 1984 and a full professor in 1989. This academic year, he is a visiting professor at the Harvard Business School.

Most of Rotemberg's research is concerned with the sources of economic fluctuations, in particular the effects of monetary policy, fiscal policy, and changing oil prices. He also has written on other topics in macroeconomics, and has done research in industrial organization and international economics.

Rotemberg is married to Analisa Lattes, a physicist with a doctorate from MIT who designs semiconductors for Analog Devices. They have two children: Veronica, 10, and Martin, 8, who are avid soccer players. Rotemberg loves to ski, and often commutes to work by bicycle from his home in Newton.

NBER Profile: Andrei Shleifer

Andrei Shleifer is a professor of economics at Harvard University and editor of the Quarterly Journal of Economics. An NBER research associate in the Programs in Corporate Finance, Asset Pricing, Public Economics, and Economic Fluctuations, he has been affiliated with the Bureau since 1986.

Shleifer was educated at Harvard and MIT, and previously taught at Princeton and the University of Chicago. In 1989, Shleifer received the Presidential Young Investigator Award in Economics. He is widely published in the areas of financial economics, economic growth, and the problems of transition from socialism. He also currently serves as a senior foreign advisor to the Russian privatization effort.

Shleifer's wife, Nancy Zimmerman, runs a hedge fund in Cambridge. They have a 15-month-old son, Sam.
NBER Profile: Richard Sylla

Richard Sylla is a research associate in the NBER's Program on the Development of the American Economy, and the Henry Kaufman Professor of the History of Financial Institutions and Markets, and professor of economics, at New York University's Stern School of Business. He has been at NYU since 1990.

Sylla received his undergraduate and Ph.D. degrees in economics at Harvard University. Prior to moving to New York, he was a professor of economics and business at North Carolina State University in Raleigh. From 1978 to 1984, he also served as editor of the Journal of Economic History.

Sylla's research interests range broadly across the histories of public and private finance, including money and banking. He views private and public finance as much more related and integrated in history than they are in current academic specialization.

Sylla's wife, Edith, is a professor of history at North Carolina State, specializing in the history of science. This year she is a fellow at MIT's Dibner Center for the history of science. They have two daughters: Anne, a management consultant, and Peggy, a senior at Emory University. None of them shares Sylla's passions for golf and his Labrador retriever, Buddy, but occasionally they accompany him on forays into the New York cultural and dining scenes.

NBER Profile: John J. Wallis

John Wallis received his Ph.D. from the University of Washington in 1981. After a two-year post-doctoral research fellowship at the Center for the Study of Economy and the State at the University of Chicago, he joined the Economics Department at the University of Maryland in 1983. He became a faculty research fellow at the NBER in 1985 and a research associate in 1989.

Wallis's research has focused on political economy and public finance. He has studied the New Deal, particularly the impact of New Deal relief programs on the relationships between national, state, and local governments, as well as on private labor markets.

He also has worked with Richard Sylla and John B. LeGler to produce a data series on state and local government revenues, expenditures, and debt from 1790 to 1980, and to investigate the importance of revenue sources for long-term government policies in regulation and investment. Further, with Douglass North, Wallis has looked at the quantitative importance of transaction costs, and their relationship to institutional change.

Wallis lives with his two sons, Dexter and Daniel. He is commissioner and a coach in the town soccer league. In addition to an avocational interest in cooking, Wallis plays golf, tennis, and basketball.
Conferences

Health Care in Japan and the United States

The NBER and the Japan Center for Economic Research (JER) jointly sponsored a conference on "The Economics of Health Care" on December 9 and 10. The program was organized by Alan M. Garber, director of the NBER's Program on Research on Health Care, and Naoki Ikekami, JER and Hitotsubashi University. The agenda was:

Naoki Ikekami, Keio University, "Overview of the Japanese Medical System"
Jonathan Gruber, NBER and MIT, and Maria Owings, National Center for Health Statistics, "Physician Financial Incentives and the Diffusion of Cesarian Section Delivery" (NBER Working Paper No. 4939)
Discussant:
Reiko Suzuki, JER
Makoto Kawamura, JER, and Seiisitu Ogura, "Major Surgeries and Economic Incentives—Case of Cesarian Section Deliveries in Japan"
Discussant:

Jonathan Gruber, Mark B. McClellan and David A. Wise, NBER and Harvard University, "Where the Money Goes: Medical Expenditures in a Large Corporation"
Discussant:
Seiisitu Ogura
Richard Suzman, National Institute on Aging, and Kenji Shuto, Japan Ministry of Health and Welfare, Panel Discussion on Policy-Oriented Research Using Microdata on Aging and Health
Naoki Ikekami, Hiroki Kawai, JER, and Seiisitu Ogura, "Economic Incentives and Prescription Drugs for Outpatients"
Discussant:
David Cutler, NBER and Harvard University
Seiisitu Ogura, and Akiko Oishi, JER, "Hospital Regulators and the Long-Term Care of the Aged in Japan"
Discussant:
Thomas E. McCardy, NBER and Stanford University
Hiroyuki Chuma, Hitotsubashi University, and Takeshi Yamada, and Fumiaki Yasukawa, Health Care Science Institute, "The Demand for Long Term Care of the Aged in Japan"
Discussant:
Alan M. Garber
Alan M. Garber and Thomas E. McCardy, "Growth in Expenditures for Hospital Care for the Elderly: Cohort and Time Effects"
Discussant:
Hiroyuki Chuma
Tetsuo Fukawa, Institute of Public Health, Kenji Shuto, and Reiko Suzuki, "On the Nature and the Costs of Terminal Medical Care in Japan"
Discussant:
Mark B. McClellan
David Cutler, "Does the United States Spend Too Much on Medical Care?"
Discussant:
Hiroki Kawai

Ikekami discussed several aspects of the Japanese health care system, including the three major types of insurance plans; and the differing roles of public and private medical institutions. Throughout Japan's health care system, a fee-for-service schedule determines the price of every item of service and medication used. The health plans for employees at large firms and for public sector employees receive no government subsidy; the "Government Managed Health Insurance" for employees in small companies receives a subsidy of about 14 percent; and "Community Health Insurance" that is provided by municipalities to self-employed workers and retirees receives the largest government subsidy.

Gruber and Owings explore two factors that may have influenced the dramatic growth in cesarean delivery rates in the United States. One is the trend toward fewer births, since obstetricians may wish to make up some of the lost income from that trend by performing more cesarean deliveries. Using geographical variation in birth rates, the authors find that a 10 percent decline in the birth rate is associated with an increase in
the C-section delivery rate of about 1 percent. There is no evidence that the second factor, malpractice reforms, has affected the rate of cesarean deliveries.

Kawamura and Ogura analyze the variation in cesarean delivery rates across hospitals in Japan. Cesarean deliveries there are more common in larger medical institutions, and in publicly owned medical institutions. However, since higher-risk deliveries more commonly are conducted in larger, publicly owned facilities in Japan, the differences in C-section rates across hospitals are attributed partially to these differences in risk factors associated with pregnancy.

McClellan and Wise explore the composition of medical expenditures among employees and dependents at a large Fortune 500 company. Comparing the firm's two health insurance plans, the authors note a tendency to substitute inpatient care for less-intensive outpatient care among employees participating in the plan with first-dollar medical coverage. They find that substance abuse and mental health problems account for quite a large portion of the medical claims in this firm, particularly among men between ages 18 and 44. They also find that high-medical-cost individuals in one year also tend to be high-cost individuals in subsequent years.

Suzman discussed a number of government-funded data sources in the United States that have proved extremely valuable for aging and health research. He focused particularly on the initiation and development of two new surveys: the Health and Retirement Survey, and the Survey of Asset and Health Dynamics Among the Oldest Old. Shuto discussed some of the medical data available for research in Japan.

Ikegami, Kawai, and Ogura consider the determinants of prescription drug use in Japan, focusing on the rapid growth in pharmaceutical costs in the Japanese health care system. Because of the margin between the government-set reimbursement rate for prescription drugs and their wholesale cost, health care providers in Japan earn profits from patients who require medications. The authors suggest that these economic incentives induce more drug prescriptions in Japan, and that the cost of these drugs is a dominant factor in the level and growth of total health care costs in Japan.

Ogura and Oishi examine the economic incentives associated with long-term care in Japan, and how medical institutions have responded to recent reimbursement reforms. They suggest, for example, that institutions reimbursed on a fixed fee-per-patient basis have an incentive to use fewer medications and injections than institutions reimbursed on a fee-for-service basis. They also explore the effects of reimbursement policy on the composition of long-term care patients (the extent of their disabilities), and on how long they stay in different types of medical institutions.

Chuma, Yamada, and Yasukawa consider the determinants of living arrangements among the disabled elderly in Japan, particularly the choice between living at home and living in some form of medical institution. They find that income is a particularly strong factor in choosing home care, rather than institutional care.

Garber and Macurdy find that Medicare expenditures have increased at about the same rate among younger and older patients, men and women, and among black and white patients. Moreover, the rate of increase in expenditures for those who spend the most on health care is about the same as the rate of increase for those who spend the least on health care. This suggests that the dramatic growth in the costs of the Medicare program is not isolated among specific groups, but is occurring across the board.

Fukawa, Shuto, and Suzuki sharply contrast the amount of medical care expenditures near the end of life in Japan versus the United States. The differences in costs appear closely related to differences in the frequency of intensive medical treatments. The authors also find that end-of-life medical expenditures are lower among older patients and among those with more functional limitations, suggesting two possible forms of rationing in the provision of medical services.

Cutler compares aggregate medical care spending across OECD countries since 1960. He finds that the income-adjusted growth in medical expenditures in the United States was comparable to that of other countries in the 1960s and 1970s, but was growing much more rapidly than others in the 1980s. Only in the past 15 years has the United States diverged significantly from other developed countries in health care spending. Despite these variations, though, Cutler suggests that higher levels of spending (for a given level of income) appear to have little effect in extending life expectancy.

Also attending this conference, and assisting with the preparation of this article, was Richard Woodbury, NBER. An NBER conference volume of these proceedings will be published by the University of Chicago Press. Its availability will be announced in a future issue of the NBER Reporter.
Economies in Transition

The NBER, Centre for Economic Policy Research (CEPR), and Tokyo Center for Economic Research jointly sponsored a conference on "Economies in Transition" in Tokyo on January 6 and 7. Kiminori Matsuyama of the NBER and Northwestern University, Peter John of the CEPR, and Kazuo Ueda of the University of Tokyo, organized this program.

Masahiko Aoki, Stanford University, "Controlling Insider Control!"
Discussant: Erik Berglöf, Université Libre de Bruxelles

Wendy Carlin, CEPR and Wissenschaftszentrum Berlin; and

Colin Mayer, CEPR and Oxford University, "Structure and Ownership of East German Enterprises"
Discussant: Sadao Nagaoka, Seikei University

Erik Berglöf and Gérard Roland, Université Libre de Bruxelles, "Banking and Soft Budget Constraints in Financial Transition"
Discussant: Mitsuhiro Fukao, Bank of Japan

Discussant: Shinichi Fukuda, Hitotsubashi University

Dani Rodrik, NBER and Columbia University, "The Dynamics of Political Support for Reform in Economies in Transition"
Discussant: Kiminori Matsuyama

Jeffrey D. Sachs, NBER and Harvard University, "Reforms in Eastern Europe and the Former Soviet Union in Light of the East Asian Experiences"
Discussant: Dani Rodrik

Kazuo Ueda and Tetsuji Okazaki, University of Tokyo, "The Performance of Development Banks: The Case of RFB and JDB"
Discussant: Akiyoshi Horiiuchi, University of Tokyo

Aoki summarizes his work as follows: so far, the reform process in transitional economies has focused mainly on the introduction of sound macroeconomic policies and the institutionalization of monitoring devices for the securities market. However, there is another important dimension of reform: the reform of the classical–hierarchical structure within formerly state-owned enterprises. For that purpose, the simultaneous development of banking institutions may be necessary. Sound banking institutions may facilitate the formation of loan consortiums that can provide a complementary, second-best monitoring device for the development of the internal organization.

Carlin and Mayer investigate the process by which East German enterprises have been privatized, and their resulting ownership and structure. The authors record higher levels of share and asset transfers than in other countries. In contrast, official insolvency has been modest, and stock market flotations largely unobserved. East German enterprises are now smaller in employment terms than their West German counterparts. Concentration of ownership is high, even by West German standards. This has been crucial to East German enterprises gaining access to finance, markets, and managerial skills.

Berglöf and Roland show how the existence of sunk costs may give rise to soft budget constraints when the government cannot commit to no-bailout policies. They also demonstrate that decentralizing credit allocation to banks that do not screen or monitor projects does not alleviate the problem. However, through appropriate tax policies, the government can increase the profitability of new lending relative to refinancing, and thus can harden budget constraints. In general, injecting additional capital into passive banks is not desirable, but if recapitalization can be earmarked for investments in screening activities, then budget constraints may be hardened. By screening projects, banks can improve the relative profitability of new lending.

In economic theory the standard practice is to assume that all the activities of potential economic value are already known to the policy-maker, or to the designer of an economic system. However, Matsuyama introduces to the theory biases in favor of market socialism, by overemphasizing the allocative distortions across the existing activities, and by underemphasizing the stifling effect of market socialism on innovation. More generally, he shows that by ignoring the fundamentally difficult problem of selecting a relatively small number of activities out of all the possibilities, this approach inadvertently contributes to creating an illusion about our ability to design and control resource allocation.
One of the least-expected developments in the economies in transition is the popularity of former Communist parties. Rodrik considers an economy with two sectors: a high-productivity private sector, which initially employs a small share of the economy's work force; and a low-productivity state sector, where at the outset the majority of the population is employed. In the early stages of the transition, the private sector expands less quickly than the state sector contracts. As a result, unemployment rises. The government then subsidizes the state sector, which slows down the transition. A private sector worker always prefers the lowest possible subsidy to the state sector. The same is true for an unemployed worker, because the subsidy only reduces the number of new jobs created without reducing the number of jobseekers. But state sector workers are ambiguous about reform, and their preferences change over time. In particular, even if state sector workers initially prefer shock therapy, they always will want to slow the reforms down later, because the probability of finding a higher-paying job in the private sector declines as the transition unfolds.

Sachs argues that the differences in economic performance between Eastern Europe and the Former Soviet Union (EEFSU) and East Asia are mainly the result of differences in economic structure and initial conditions, rather than of differences in economic policymaking. The more rapid growth of East Asia's transition economies reflects the fact that they began the reform process as highly agricultural and rural economies, with underdeveloped industrial sectors. The EEFSU economies, on the other hand, were heavily industrialized economies, with most of the population in urban areas. For this reason, East Asia's brand of gradualism was not applicable in the EEFSU context.

Ueda and Okazaki analyze the performance of the Reconstruction Finance Bank (RFB) in order to shed light on the role of development banks in fostering economic growth. They use individual firm-level data on sales, profits, and loans from RFB, and find that initially RFB was making loans to firms with below-average performance. They argue that this was partly a result of political interventions into the loan policy of RFB. In fact, they also find evidence of improvements in the performance of RFB after its loan policy became more independent. They then compare these results with the existing literature on the Japan Development Bank, which succeeded RFB.

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**Tax Policy Analysis**

As part of a multiyear research project, a group of NBER tax economists and other tax experts gathered on January 20–21 to discuss and analyze new research on tax policy. Organized by Bureau President Martin Feldstein, also of Harvard University, and James M. Poterba, director of the NBER's Program in Public Economics, also of MIT, this meeting focused on the effect that tax rules have on the behavior of households and firms. The program was:

**Martin Feldstein, and Daniel R. Feenberg, NBER, "The Taxation of Two-Earner Families"**

Discusser:
Harvey S. Rosen, NBER and Princeton University

**Gilbert E. Metcalf, NBER and Tufts University, "Labor Supply and Welfare Effects of Value-Added Taxes"**

Discusser:
Gary Burless, Brookings Institution


Discusser:
James J. Heckman, NBER and University of Chicago

**Robert A. Moffitt, NBER and Brown University; and Robert Triest, NBER and University of California, Irvine, "The Intertemporal Covariance Structure of Deductions and Income in the Federal Income Tax"**

Discussant:
Jonathan S. Skinner, NBER and University of Virginia

**James Alm, University of Colorado at Boulder**

**Brian Erard, Carleton University; and Jonathan Feinstein, NBER and Yale University, "The Relationship Between State and Federal Tax Audits"**

Discussant:
James Wetzler, formerly Revenue Commissioner, State of New York

**William M. Gentry, NBER and Duke University; and Allison Hagy, Pomona College, "The Distributional and Behavioral Effects of the Tax Treatment of Child Care Expenses"**

Discussant:
Brigitte C. Madrian, NBER and Harvard University
Feldstein and Feenberg modify the NBER's TAXSIM model to study the effects of alternative tax rules on the labor force participation and working hours of married women. They then calculate the resulting changes in revenue and in the deadweight loss of the tax system. Their analysis shows that the revenue loss generally is substantially less than the "static" (no change in labor supply) estimates suggest. A variety of alternatives to the current method can reduce the deadweight loss of the existing tax system substantially. For example, reinstating a modified form of the 10 percent deduction for the "secondary earner's" wage and salary income can reduce the deadweight loss by about 70 cents for every dollar of lost revenue.

Metcalf analyzes the effect on labor supply and economic welfare of a shift from an income to a consumption tax. He argues first that whether labor supply increases or decreases will depend, among other things, on how responsive current leisure is with respect to the price of future consumption. Under plausible assumptions, the response of the labor supply is likely to be small. Then he considers whether, if a narrow-based value-added tax (VAT) is implemented, the reduction in distortions over time might be more than offset by distortions among commodities. He finds that the reduction in economic welfare caused by excluding some consumption from a VAT base is more than offset by the gains from not taxing capital income.

The Economic Recovery Tax Act of 1981 (ERTA81) reduced marginal tax rates across the board by 23 percent within each tax bracket. In addition, ERTA81 introduced a tax deduction of 10 percent of the secondary earner's income up to $30,000. Using data from the Current Population Survey from 1981 and 1985, before and after the change in tax rates, Eissa finds that a 1 percent increase in the net-of-tax share of income (that is, one minus the marginal tax rate) led to an increase of 0.5 to 0.7 percent in the labor force participation of married women. The same increase in the net-of-tax wage rate causes hours of work to rise by only 0.2 to 0.3 percent.

Moffit and Triest use panel data on individual income tax records from 1982–8 to study the short-term relationship between deductions and income, and how that relationship changed after the Tax Reform Act of 1986 (TRA86). They find that the most flexible and discretionary types of income and deductions are strongly negatively correlated, while there is a weak positive correlation between the least flexible types of income and deductions.

Alm, Erard, and Feinstein present the results of two projects on the relationship between state and federal tax audits. The first is a detailed analysis of audit selection decisions and assessments for Oregon. The results suggest that the IRS and state tax authorities could increase assessments significantly by improving their information sharing. The state of Oregon also could increase assessments by shifting resources from independent to piggyback audits. The second project is a survey of state tax administrators that provides information about state tax audit programs.

Gentry and Hagy find that a broad cross-section of Americans benefit from tax relief for child care. However, that tax relief does not reach the bottom 10 percent of the income distribution, because it is available only to those who work a certain number of hours, and as an offset to taxes owed. Above the bottom quintile of the income distribution, though, tax relief for child care is progressive: tax relief benefits divided by income decline steadily as income rises. When potential income is used to measure ability to pay, tax relief for child care is even more progressive.

Gruber and Poterba study the current tax subsidy to employer-provided health insurance and various alternatives. They argue that previous analyses have overstated the tax subsidy to health insurance by neglecting: 1) aftertax employee
payments for employer-provided insurance, and 2) the tax subsidy for extreme medical expenses, which discourages the purchase of insurance. Even after considering these factors, though, the authors find that the net tax subsidy to employer-provided insurance is substantial, reducing the price of this insurance by about 30 percent.

According to Slemrod, the relative income gains of the affluent after TRA86 are overstated in certain analyses, but are large nevertheless. Factors such as technological change and globalization that affect income inequality can explain much of the increased high-income concentration until 1985, but cannot adequately explain the spurt after TRA86. TRA86 was probably a principal cause of the large increase in the reported personal income of the affluent. A close look at the sources of the post-1986 increases in income for the rich suggests that much of it may reflect income shifting—for example, from the corporate tax base to the individual tax base—and not income creation resulting from additional labor supply, for example.

The precipitous decline in tax sheltered investments after the Tax Reform Act of 1986 (TRA) is widely attributed to the passive loss rules. These rules disallowed losses from activities in which the taxpayer did not participate materially as a current deduction against all sources of income except for other passive activities. Samwick shows that the role of the passive loss limitations was secondary to that of other reforms enacted by TRA; most importantly, the repeal of the investment tax credit and the long-term capital gain exclusion. These other reforms not only lowered aftertax rates of return on tax sheltered investments but also eliminated the positive correlation between the investor’s marginal tax rate and the investment’s aftertax rate of return. As a result, after TRA, high-income taxpayers ceased to be the natural clientele for legitimate tax shelters. The passive loss rules were more effective in curtailing the use of “abusive” tax shelters; however, a more narrowly focused restriction on seller financing of tax sheltered investments could have accomplished the same goal with much less scope for discouraging productive economic investments.

These papers and their discussion will be published by the University of Chicago Press. The availability of the volume will be announced in a future issue of the NBER Reporter.

Property–Casualty Insurance

The NBER held a conference on property-casualty insurance at its Cambridge offices on February 10 and 11. David F. Bradford, director of this project, an NBER research associate, and a professor at Princeton University, organized the program.

J. David Cummins, University of Pennsylvania; Allen N. Berger, Board of Governors of the Federal Reserve System; and Mary A. Weiss, Temple University, “The Coexistence of Multiple Distribution Systems for Financial Services: The Case of Property–Liability Insurance”

Discussant: Dwight Jaffee, University of California, Berkeley

Dwight Jaffee, and Thomas Russell, Santa Clara University, “The Causes and Consequences of Rate Regulation in the Auto Insurance Industry”

Discussant: Patricia Danzon, University of Pennsylvania.

Anne Gron, Northwestern University, and Deborah J. Lucas, NBER and Northwestern University, “External Financing and Insurance Cycles”

Discussant: William M. Gentry, NBER and Duke University

Sharon Tennyson and Susan J. Suponcic, University of Pennsylvania, “Rate Regulation and the Industrial Organization of Automobile Insurance”

Discussant: W. Kip Viscusi, Duke University

Patricia Born, American Medical Association; W. Kip Viscusi; William M. Gentry; and Richard J. Zeckhauser, NBER and Harvard University, “Organizational Form and Insurance Company Performance: Stocks Versus Mutuals”

Discussant: Scott Harrington, University of South Carolina


Discussant: Deborah J. Lucas

James Bohn and Brian J. Hall, Harvard University, “Property and Casualty Solvency Funds as a Tax and Social Insurance System”

Discussant: Louis Kaplow, NBER and Harvard University

Property–liability insurance is distributed through both independent agents, who represent several insurers, and exclusive (direct writing) agents, who represent only one insurer. Cummins, Berger, and Weiss find that the independent agency system is less cost efficient than the direct writing system. However, the difference in efficiency in terms of profit between the two is at most one-fourth as large as the difference in efficiency in terms of cost, and is not statistically significant. This supports the “product quality hypothesis”: that most of the higher costs of independent agency insurers are associated with higher quality output that is rewarded with additional revenues.

Jaffe and Russell find that the decision to purchase auto insurance is very sensitive to changes in price. This means that regulation of insurance premiums may cause the percentage of uninsured motorists to decline. However, an alternative strategy for lowering the percentage of uninsured motorists is the “Pay at the Pump” initiative, which is likely to be forthcoming soon as a California referendum proposition. With pay at the pump, insurance premiums are collected primarily as a fee included in gasoline purchases. Since gasoline is needed to drive, pay at the pump eliminates all uninsured motorists.

Gron and Lucas explore the possibility that periods of high prices and constrained supply in the property–casualty insurance industry are the result of temporary shortages of capital. To determine this, they look for cuts in dividends and repurchases (reflecting “cash” shortages), and for issues of equity (also reflecting a need to raise “cash”). Further, by examining the response of the market price to security issues, they look for evidence that the costs of raising external capital are unusually high relative to other industries. They find some changes in the expected payout policy and an increased volume of debt and equity issues following periods of low capacity. However, the total amount of capital obtained by security issues or reduced payouts appears small relative to the observed drops in net worth. This suggests that insurers rely primarily on future retained earnings to rebuild their capital position. The market price reaction to equity issues appears to be considerably less negative than for industrial insurers, but similar to that for banks and utilities.

Tennyson and Suponiec analyze the effects of rate regulation on the organization of state automobile insurance markets. Economic reasoning suggests that regulation that restricts the profitability of insurance companies will affect the strategic decisions of insurers both operating in the state and considering entering it. The paper focuses on how differences across insurers in size, production costs, and technology will lead to differences in responses to regulation. Annual data for 1987–92 reveal that more stringent regulation results in fewer firms operating in the market, and in lower market shares for low-cost national producers.

Born, Viscusi, Gentry, and Zeckhauser examine the coexistence and performance of stock and mutual companies in the property–casualty insurance industry. Stock companies are similar to corporations in other industries with shareholders that provide capital. In contrast, mutual companies are owned by their customers. Mutual firms write over one-quarter of total premiums in the industry. These different organizational forms give managers different incentives. For example, to best serve their shareholders, managers of stock companies may withdraw quickly from unprofitable lines of business or locations. In contrast, mutuals may respond relatively slowly out of loyalty to their customers.

One of the most important components of the balance sheet of a property–casualty insurance company is the “loss reserve.” More precisely termed the “unpaid losses account,” the loss reserve expresses the amount the company expects to pay out in the future to cover indemnity payments that will come due on policies already written, and the costs—“loss adjustment expenses” (for example, litigation expenses)—of dealing with the associated claims. If the loss reserve were determined solely on the basis of pure insurance accounting theory, the reserve would reflect only those factors that affect the size, frequency, and pattern of future claim payments and loss adjustment expenses. Such factors include changes in patterns of actual claim payments, changes in inflation rates, weather patterns, technological developments, and, most significant in the context of liability insurance, trends in tort doctrine and jury awards that affect the size and frequency of liability judgments. In practice, loss reserves are influenced by other considerations as well, such as how the reported reserves will affect the likelihood of regulatory scrutiny, the perceptions of investors, and the firm’s income tax liability. Bradford and Logue develop the theory needed to measure the discretionary element in reported loss reserves, and present initial empirical results.

Bohn and Hall estimate the costs to the guarantee funds of resolving the insolvencies of property
and casualty insurance companies. They find that resolution costs are remarkably high on average—about 98 cents per dollar of a company’s pre-insolvency assets. Further, the resolution costs are higher for small firms, poorly capitalized firms, firms writing significant premiums in long-tail lines, and firms that fail because of disasters. Insolvencies typically are resolved quickly: approximately half of all payments to the fund for a given insolvency occur within two years, and two-thirds within three years. The time-path of these costs varies significantly by firm, although firms with significant fractions of premiums in workmen’s compensation, for example, take much longer to resolve.

Also attending this conference were: Richard Derrig, Auto Insurers Bureau; Martin Feldstein and Kenneth A. Froot, both of NBER and Harvard University; Sean Mooney, Insurance Information Institute; Jim Moor, ITT Hartford Insurance Group; Stewart C. Myers, NBER and MIT; and Wayne W. Sorenson, State Farm Insurance Companies.

**Tenth Annual Macroeconomics Conference**

Over 60 academics, government economists, and journalists attended the NBER’s Tenth Annual Conference on Macroeconomics in Cambridge on March 10–11. The new conference chairman, Ben S. Bernanke of the NBER and Princeton University, and Julio J. Rotemberg of the NBER, MIT, and Harvard University, organized the following program:


**Discussants:**
- Kevin M. Murphy, NBER and University of Chicago, and
- Richard Rogerson, NBER and University of Minnesota

**Craig Burnside**, University of Pittsburgh; **Martin S. Eichenbaum**, NBER and Northwestern University; and **Sergio T. Rebelo**, NBER and University of Rochester, “Capital Utilization and Returns to Scale”

**Discussants:**
- Susanto Basu, NBER and University of Michigan, and
- Robert E. Hall, NBER and Stanford University


**Discussants:**
- Peter Garber, Brown University, and
- Greg Duffee, Federal Reserve Board

**Sergio T. Rebelo**, and **Carlos Vegh**, International Monetary Fund, “Exchange-Rate-Based Stabilizations: Theory and Evidence”

**Discussants:**
- Marianne Baxter, NBER and University of Virginia, and
- Jeffrey D. Sachs, NBER and Harvard University

**Stephen G. Cecchetti**, NBER and Boston College, “Inflation Indicators and Inflation Policy”

**Discussants:**
- Donald Kohn, Federal Reserve Board, and
- Mark W. Watson, NBER and Northwestern University

**Symposium on Central Bank Independence**

**Carl Walsh**, University of California, Santa Cruz, “Recent Central Bank Reforms and the Role of Price Stability as the Sole Objective of Monetary Policy”


**Stanley Fischer**, International Monetary Fund, “The Unending Quest for Monetary Salvation”

**Discussants:**
- Alberto F. Alesina, NBER and Harvard University

Throughout the 1970s and 1980s, wage differentials widened in the United States but not in Europe, where marginal groups in the labor force experienced increasing and persistent unemployment instead. Bertola and Ichino argue that both phenomena may be explained by more pronounced volatility in the processes that affect labor demand. If workers bear the costs of labor reallocation, as in the United States, then a higher option value for work in currently depressed regions, occupations, or sectors is consistent with wider wage differentials in equilibrium. Under centralized wagesetting and job security legislation, as in Europe, the higher likelihood of negative shocks in the near future de-
creases labor demand by firms that are hiring.

Burnside, Eichenbaum, and Rebelo study the role of rates of capital utilization that vary over time in explaining procyclical labor productivity. Using a measure of capital services based on electricity consumption, they find that the phenomenon of near (or actual) short-run increasing returns to labor is an artifact of the failure to accurately measure rates of capital utilization. They also find that capital services are a significant factor in aggregate and industry-level production technologies. There may be constant returns to scale in production, and the residuals in their estimated production functions may represent technology shocks. Finally, the authors find that correcting for cyclical variations in capital services affects the statistical properties of estimated aggregate technology shocks quite a bit.

In the last 10 to 15 years financial derivative securities have become an important, and controversial, product for commercial banks. The controversy concerns whether the size, complexity, and risks associated with these securities, the difficulties with accurately reporting timely information concerning the value of firms' derivative positions, and the concentration of activity in a small number of firms, has substantially increased the risk of collapse of the world banking system. Gorton and Rosen estimate the market values and interest rate sensitivities of interest rate swap positions of U.S. commercial banks to assess whether swap contracts have increased the systemic risk in the U.S. banking system. They find that the banking system as a whole faces little net interest rate risk from swap portfolios.

Rebelo and Vegh review the evidence on exchange-rate-based stabilizations in light of the different theories that try to explain what happens to the macroeconomy after the adoption of a fixed exchange rate. In particular, they attempt to disentangle the role played by three different factors: 1) the fact that the policy often is perceived as temporary; 2) the fact that important improvements in fiscal policy, both now and in the future, tend to accompany the peg; and 3) the existence of nominal herent in forecasting and controlling inflation might lead one to focus on the growth of nominal income rather than price level targeting.

Walsh suggests that the worldwide wave of reforms in central banking represents an attempt to develop institutional solutions for the inflation bias that can arise under discretionary monetary policy. One alternative to mandated objectives or targeting requirements is incentive contracts: they base the central bank's rewards (or penalties) solely on the realized rate of inflation. New Zealand has well-defined procedures for setting short-run inflation targets involving both the central bank and the government. It also has a system of accountability that requires any government override to be made public, and enables the central bank governor to be dismissed if targets are missed. In Europe, the emphasis has been on political independence; less attention has been given to ensuring that the correct incentives to address the short-run trade-offs are established, or on ensuring accountability.

Posen seeks to explain the pattern of central bank independence that existed prior to its becoming fashionable. He argues that the financial sector is politically capable of protecting central banks from the cost of their countinflationary policies. He also argues that central bank independence—and inflation—varied across countries between 1950 and 1989 according to national differences in effective financial opposition to inflation. His analysis has two major policy implications: first, moves to central bank independence in countries

"Three countries—Canada, New Zealand, and the United Kingdom—have been implementing inflation targeting in the last few years, and their inflation performances have been very impressive."
where appropriate political support does not exist may not reduce inflation over the long term; second, financial deregulation will affect inflation levels in previously unrecognized ways.

Fischer notes that within the context of an independent but accountable central bank, the inflation targeting approach is a significant new entry in the unending quest for monetary salvation. Three countries—Canada, New Zealand, and the United Kingdom—have been implementing inflation targeting in the last few years, and their inflation performances have been very impressive. Further, monetary policy cannot ensure good macroeconomic performance unless fiscal policy operates in a reasonable way. By providing a visible nominal anchor, the pegging of the exchange rate also can play an important role in reducing inflation and inflationary expectations. This is particularly true for an economy seeking to stabilize from a situation of extreme disorder, and one in which central bank credibility is low. To be effective, such a strategy must start from an appropriately valued rate, and be accompanied by strong fundamentals (especially on the fiscal front), and the willingness of the government to change the rate when needed.

These papers and their discussions will be published in October by the MIT Press as *NBER Macroeconomics Annual, Volume 10*.

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### Bureau News

#### Anne Krueger to Head AEA

When NBER Research Associate Victor R. Fuchs passes the gavel at the end of his term as president of the AEA, it will be to another NBER Research Associate: Anne O. Krueger. Krueger, like Fuchs a professor of economics at Stanford University, is president-elect this year, and will be president of the organization in 1996.

Currently a member of the NBER’s Programs in International Trade and Investment and International Finance and Macroeconomics, Krueger has been affiliated with the Bureau since 1969. Before joining the Stanford faculty in 1994, she taught at Duke University from 1987–93, and at the University of Minnesota from 1959–82. Between 1982 and 1986, Krueger served as Vice President, Economics and Research, at the World Bank.

Krueger’s research, particularly on trade issues, has been published extensively in journals and books. Her most recent NBER book, edited jointly with Takatoshi Ito, was published in 1994.

#### Card to Receive Clark Medal

The 1995 John Bates Clark Award of the American Economic Association will be given to David Card of Princeton University. Card, who has been a research associate in the NBER’s Program in Labor Studies since 1982, is known for his work on the minimum wage and on labor earnings, among other topics.

The Clark Medal is awarded every other year to the economist under the age of 40 who is judged to have made the most significant contribution to economics. Past recipients of the John Bates Clark Award who have been associated with the NBER are: Milton Friedman, 1951; Zvi Griliches, 1965; Gary S. Becker, 1967; Daniel McFadden, 1975; Martin Feldstein, 1977; Joseph E. Stiglitz, 1979; A. Michael Spence, 1981; James J. Heckman, 1983; Jerry A. Hausman, 1985; Sanford J. Grossman, 1987; Paul R. Krugman, 1991; and Lawrence H. Summers, 1993.

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### Behavioral Finance Program Meeting

Members and guests of the NBER’s project on behavioral finance met in Cambridge on February 3. Robert J. Shiller of the NBER and Yale University, and Richard H. Thaler of the NBER and MIT, planned this program: Rafael La Porta, Harvard University,

**Josef Lakonishok**, University of Illinois,

**Andrei Shleifer**, NBER and Harvard University, and

**Robert W. Vishny**, NBER and University of Chicago, "Good News for Value Stocks: Further Evidence on Market Efficiency" Discussant:
La Porta, Lakonishok, Shleifer, and Vishny examine the market's reaction to earnings announcements in order to assess the role of errors in earnings expectations in explaining the superior performance of value stocks (that is, stocks with high yield ratios). They find that earnings surprises are systematically positive for value stocks and negative for glamour stocks (stocks with low yield ratios). Differences in returns after an earnings announcement explain approximately 25–30 percent of the differences in annual return between value and glamour stocks in the first two to three years after formation of a portfolio, and 15–20 percent of differences in the return over years four and five. The long half-life of positive surprises in relative earnings for a fixed portfolio of value and glamour stocks is consistent with the highly persistent nature of the difference in returns between value and glamour portfolios.

Daniel and Titman find that stock characteristics, rather than the covariance structure of returns, determine average historical (and perhaps expected) returns. As Fama and French (1992) have noted, market capitalization and book-to-market ratios are important determinants of observed average returns. This paper shows that, after controlling for these characteristics, covariances with the book-to-market and size-based factor portfolios described in Fama and French (1993) have no effect on average stock returns. Also, the Fama and French (1993) interpretation of the high minus low book-to-market (HML) portfolio as a proxy for a distress factor does not describe the data accurately. The data can be described more accurately by a relatively stable factor structure, with the HML portfolio loading on different factors at different times. These results indicate that one should be able to form portfolios with very high returns and very low risk.

Dreman and Berry show how positive and negative news affect "best" and "worst" stocks. They find that favorable surprises send prices for the "worst" stocks significantly higher, while the "best" stocks continue to underperform the market after a smaller positive initial reaction. Unfavorable surprises result in an initial negative reaction among the "worst" stocks, followed by above-market performance; the return on the "best" stocks is consistently well below market. Both positive and negative surprises have little net effect on the 60 percent of stocks grouped in the middle quintiles.

Ausubel reexamines the credit card market over a longer time period than earlier studies, and with new sources of data. He finds that the stark interest-rate stickiness is fading significantly by the mid-1990s, but there is still no substantial erosion in the extranormal profits earned by credit card issuers. Moreover, the evidence suggests that consumers systematically continue to underestimate the extent of their borrowing on credit cards into the 1990s.

Shefrin and Statman develop a behavioral theory of the construction of investment portfolios, and explore its implications for the design and pricing of securities. Behavioral portfolios resemble layered pyramids: at the bottom of the pyramid is the downside protection layer, and the upside potential layer is at the top. The design of financial products generally reflects the awareness of designers for the way investors will construct their portfolios. Putting too much weight on the goal of downside protection is consistent with the existence of the equity premium puzzle and the "options smile."
Stulz and Kang use data on foreign stock ownership in Japan from 1975 to 1991 to examine the determinants of the home bias in portfolio holdings. They show that foreign investors put too much weight on: shares of firms in manufacturing industries; large firms; firms with good accounting performance; firms with low unsystematic risk; and firms with low leverage. Consequently, when investors hold foreign shares, they do not hold the market portfolio of foreign countries. However, foreign investors do not perform significantly worse than if they had held the Japanese market portfolio, Stulz and Kang find. After controlling for firm size, there is no evidence that foreign ownership explains the cross-sectional variation in expected returns.

Also attending this meeting were: Paul Asquith, Olivier J. Blanchard, and Jeremy C. Stein, all of NBER and MIT; John Y. Campbell, Martin Feldstein, Kenneth A. Froot, and Michael C. Jensen, all of NBER and Harvard University; Geoffrey Carliner, NBER; and Loren Ross, Russell Sage Foundation.

**Economic Fluctuations Research Meeting**

The winter meeting of the NBER’s Program on Economic Fluctuations was held on February 17. Laurence M. Ball of the NBER and Johns Hopkins University, and Lawrence J. Christiano of the NBER and Northwestern University, organized this program:

**Steven J. Davis**, NBER and University of Chicago;
**Prakash Loungani**, Federal Reserve Board; and
**Ramamohan Mahidhara**, AMOCO Corporation, “Regional Unemployment Cycles”

Discussant:
Valerie A. Ramey, NBER and University of California, San Diego

**Per Kruell**, University of Rochester, and


Discussant:
V. V. Chari, University of Minnesota

**Truman Bewley**, Yale University, “A Field Study on Downward Wage Rigidity”

Discussant:
David H. Romer, NBER and University of California, Berkeley

**Guy Debelli**, Reserve Bank of Australia, and
**Owen Lamont**, Princeton University, “Relative Price Variability and Inflation: Evidence from U.S. Cities”

Discussant:
Mariano Tommasi, Harvard University

**Peter Rupert**, Federal Reserve Bank of Cleveland;
**Richard Rogerson**, NBER and University of Minnesota; and

Discussant:
Lars P. Hansen, NBER and University of Chicago

**Monika Merz**, Rice University, “Heterogeneous Job-Matches and the Cyclical Behavior of Labor Turnover”

Discussant:
Robert E. Hall, NBER and Stanford University

Davis, Loungani, and Mahidhara analyze how regional unemployment rates and employment-to-population ratios respond to aggregate, as well as to region-specific, shocks to labor demand. They use state-level data on military prime contract awards (including contracts awarded by NASA), and data on Department of Defense military and civilian personnel, to estimate the changes in regional unemployment and employment associated with variations in defense spending. Their rough estimates are that a reduction of $1 billion in a state’s military prime contract awards is associated with a peak increase in the number of people unemployed of 4000, and a peak decline in regional employment of 20,000 people; the difference between the two numbers is accounted for largely by migration out of the state, rather than by changes in regional labor force participation rates.

Kruell and Rios-Rull study how the frequency of elections and the lag between policy decision and policy implementation influence equilibrium tax rates, economic growth, and welfare. They find that constitutional change may lead to large, long-run effects on economic performance. In particu-
lar, the more frequently taxes are voted on, and the shorter the policy implementation lag, the higher taxes are in equilibrium, and the lower growth and welfare are. Also, the more progressive the tax code is, the weaker are the distortions implied by the political transfer system. However, the quantitative effects from changing the progressivity of the tax code are much smaller than those resulting from changing the timing of elections.

Bewley interviewed 334 business people, labor leaders, unemployment counselors, and management consultants to learn why wages and salaries do not decrease during recessions in response to increased unemployment. He learned that employers resist cutting the pay of existing employees largely out of fear that the shock of a reduced living standard, and the insult implied by lower pay, would hurt morale. Employers do not reduce the pay rates of new hires because they would resent being treated less favorably than existing employees. Bewley also finds that the unemployed usually are rejected as overqualified if they apply for jobs paying a good deal less than what they earned before they were unemployed. Employers fear that they will be discontent, be a threat to their supervisors, or that they will leave as soon as they find better work.

Debelle and Lamont test whether the positive correlation between inflation and the variability of intermarket prices over time is present in a cross-section of U.S. cities. They find that cities with higher than average inflation also have higher than average dispersion of relative prices. This result holds for different periods of time, different classes of goods, and (surprisingly) across different time horizons. These results suggest that at least part of the relationship between inflation and relative price variability cannot be explained by monetary factors.

Dynamic general equilibrium models that include explicit household production sectors provide a useful framework within which to analyze a variety of macroeconomic issues. However, some implications of these models depend critically on parameters, including the elasticity of substitution between market and home consumption goods, about which there is little information in the literature. Rupert, Rogerson, and Wright estimate these parameters for single males, single females, and married couples. They find that including home production, at least for single females and married couples, will make a significant difference in applied general equilibrium theory.

Flows into and out of unemployment occur simultaneously over the business cycle, and move closely together. Inflows lead outflows by one quarter (three months), and movements in both are countercyclical. In this paper, Merz introduces job matches that depend on labor productivity, so that firms' hiring and firing decisions are specific to them, and not completely dependent on economic changes. When firms can lay off temporarily, recall, or hire new workers in reaction to productivity shocks, Merz shows, then the flows into and out of unemployment have cyclical characteristics (matching the actual data).

## Impulse and Propagation Mechanisms

As part of the Program Meeting on Economic Fluctuations held a day earlier, a small group of NBER economists and their guests met on February 18 for a workshop on "Impulse and Propagation Mechanisms." Lawrence J. Christiano and Martin S. Eichenbaum, both of the NBER and Northwestern University, organized this program:

**Susanto Basu**, NBER and University of Michigan, and

**John Fernald**, Federal Reserve

Board, "Aggregate Productivity and the Productivity of Aggregates"

Discussant:

Michael Horvath, Stanford University

**Mark Bils**, NBER and University of Rochester, and

**Peter Klenow**, University of Chicago, "Uncovering Curvature—Tests of Competing Business Cycle Models"

Discussant:

Andreas Hornstein, University of Western Ontario

**Craig Burnside**, University of Pittsburgh;

**Martin S. Eichenbaum**, and

**Sergio T. Rebelo**, NBER and University of Rochester, "Capital Utilization and Returns to Scale" (See "Tenth Annual Conference on Macroeconomics" in the "Conferences" section earlier in this issue.)

Discussant:

Matthew D. Shapiro, NBER and University of Michigan

**Per Krusell**, University of Rochester, and

**Jose-Victor Rios-Rull**, University of Michigan
Basu and Fernald decompose the aggregate Solow residual into several terms, each of which has an economic interpretation. They apply this decomposition to U.S. data by studying the aggregation from two- to one-digit manufacturing industries, and find that the compositional terms are significantly procyclical. Controlling for these terms reduces the evidence for increasing returns and productive externalities, and lowers the correlation between output growth and technology change by almost one-half.

Consumer theory tells us that luxuries and durables should be more cyclical than necessities and nondurables. Bils and Kleinow calibrate luxuriousness and durability for 57 consumer goods to quantify just how much more cyclical. They find that: 1) productivity is more procyclical for luxuries and durables; 2) relative prices are acyclical; and 3) relative quantities are steeply dampened. In short, the data contradict each of the popular business cycle models on at least one dimension.

Equipment capital is more complementary with skilled than with unskilled labor. Given the dramatic decline in the relative price of equipment, and the accompanying increase in its stock, this relative complementarity implies a downward pressure on the relative wage of unskilled workers. Krusell and Rios-Rull confirm the relative complementarity hypothesis, and find that both the trend and the within-period movements of the skill premium are quite well matched. They also obtain some interesting residual estimates for the average growth rates of the quality (human-capital content) of both skilled and unskilled labor.

Fisher and Hornstein study the aggregate implications of optimal inventory policies in a dynamic general equilibrium model by embedding a retail sector into a stochastic growth model with search and matching. They find that: 1) the model is capable of replicating salient features of the business cycle; 2) the model reconciles evidence that orders are more volatile than sales, and that sales and inventory investment are correlated positively for many firms, industries, and in the aggregate; and 3) inventory policies do little to propagate productivity shocks, but have a significant impact on the propagation of shocks to the real interest rate.

Rather than appeal to exogenous shocks as driving forces, Horvath views business cycles as the outcome of an economic law, similar in spirit to the biological law of natural selection. The Solow residual and its cyclical characteristic are the aggregate manifestation of this economic law. He views the economy as a continuum of firms with different levels of productivity. Through experience in producing a homogeneous good, some firms deduce that they are bad, or unproductive, and exit the industry. Other firms are reaffirmed as good, or productive, and remain in the industry. Knowing a firm’s productivity generates an aggregate level of productivity behavior close to what is observed in the United States.

Program Meeting on Industrial Organization

Severin Borenstein, NBER and University of California, Berkeley, organized the February 24 and 25 program meeting on industrial organization. The following papers were discussed:

Timothy F. Bresnahan, NBER and Stanford University; Manuel Trajtenberg, NBER and Tel Aviv University; and Scott Stern, Stanford University, "The Sources of Transitory Market Power for Innovations: Personal Computers"

Discussant: Tom Gilligan, University of Southern California
Markets for differentiated products often exhibit some form of segmentation or clustering, according to a small number of "principles of differentiation" (that is, features of the product that consumers value). Bresnahan, Trajanberg, and Stern study clustering according to two such principles: whether the product is associated with a strong brand name (B), and whether the product is at the cutting edge of the technology frontier (F). They show that both B and F are sources of clustering in the personal computer market in 1987–8, in the sense of diminishing the cross-elasticities between products in different clusters. F seems more important than B in that respect; on the other hand, B definitely was more important than F in shifting out demand. These results suggest that whereas having a brand name strongly increased demand (relative to being a "clone"), being at the technological frontier provided more isolation from competition.

Williams tests the proposition that the demand for franchise opportunities depends upon the demand for managerial inputs and risksharing that this cooperative form of ownership provides. He finds that entrepreneurs derive substantial gains from trade: franchisees would have significantly lower profits as independent owners. This is primarily because of unobservable differences between entrepreneurs who choose franchising and those who do not. Because of these unobservable differences, franchisors face an adverse selection problem that may explain certain terms of the franchise contract, such as screening of potential franchisees and "at will" termination provisions.

Joskow, Rose, and Wolfram explore the effect of regulatory and political constraints on the level of CEO compensation for 87 state-regulated electric utilities during 1987–90. Their results suggest that political pressures may constrain top executive pay levels in this industry. First, CEOs of firms operating in regulatory environments characterized by investment banks as relatively "pro-consumer" receive lower compensation than do CEOs of firms in environments ranked as more friendly to investors. Second, CEO pay is lower for utilities with relatively high or rising rates, or a higher proportion of industrial customers. Finally, attributes of the commission appointment and tenure rules affect CEO compensation in ways consistent with the political constraint hypothesis.

Ellison, Cockburn, Griliches, and Hausman model the demand for four cephalosporins, and compute price elasticities between branded and generic versions of the four drugs. The purchase of pharmaceutical products occurs in
stages; in particular, there are the prescribing and the dispensing stages. The authors find fairly high elasticities between generic substitutes, but low elasticities between therapeutic substitutes.

Competition may contribute to economic efficiency in many ways other than bringing prices closer to marginal costs. For example, more competitive markets allocate larger market shares to more efficient firms. Farrell argues that the market-share effect may be more important than the deadweight-loss effect, especially in oligopolies that are not exceptionally concentrated.

By generating mall traffic, anchor stores attract customers, indirectly increasing the sales of other mall stores, thus creating external economies. Mall developers internalize these externalities by giving anchor stores subsidies, and by charging rent premiums to other mall tenants. Pashigian and Gould estimate these externalities by comparing the rents per square foot paid by anchors versus other mall tenants in larger, superregional malls with those paid in smaller regional shopping malls. Anchors pay a lower rent per square foot in superregional malls than in regional malls, even though their sales per square foot are the same in each. Sales and rent per square foot of other mall stores are higher in superregional malls than in regional malls. Thus, greater externalities exist in superregional than in regional malls.

At the turn of the century, British shipping firms operated in cartels that held and defended monopoly positions in various international shipping routes. Morton constructs a dataset consisting of all cases in which an entrant attempted to break into a cartel and a price war ensued. She finds that entrants lacking experience, financial resources, size, or with poor trade conditions, are preyed upon more than strong entrants. This supports those theoretical models that predict that the effectiveness, and therefore incidence, of predation depends upon the characteristics of the individual entrant. Additionally, she finds that weaknesses of an entrant unrelated to market shocks, demand, or supply affect the probability of predation. This contradicts the assertions of the “Chicago School” that predation is simply a period of low prices and is not motivated by predatory intent.

Chevalier and Ellison examine the conflict between mutual fund investors and mutual fund companies. Investors would like fund managers to maximize the fund’s risk-adjusted returns. However, because mutual fund companies received a fixed percentage of the assets under management as compensation, they would like to maximize the inflow of investments into the fund. The authors show that the flow of assets into mutual funds is related to the fund’s past performance, but that this relationship is not linear. In the data analyzed in this study, mutual funds alter their portfolio riskiness between September and December in a manner consistent with these risk incentives.

Also attending were: Shane Greenstein, Garth Saloner, and Andrea Shepard, NBER and Stanford University; Rebecca Henderson, NBER and MIT; and Francine LaFontaine and Valerie Y. Suslow, NBER and University of Michigan.

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Development of the American Economy

Members and guests of the NBER’s Program on Development of the American Economy met at the Bureau’s Cambridge office on February 25. Their agenda, organized by Program Director Claudia Goldin, also of Harvard University, was:

Robert A. Margo, NBER and Vanderbilt University, “The Price of Housing in New York City, 1830–60” (NBER Historical Paper No. 63).

Joshua L. Rosenbloom, NBER and University of Kansas, “Was There a National Labor Market at the End of the Nineteenth Century? Intercity and Interregional Variation in Male Earnings in Manufacturing” (NBER Historical Paper No. 61).

Price V. Fishback and Shawn E. Kantor, NBER and University of Arizona, “A Prelude to the Welfare State: Compulsory State Insurance and Workers’ Compensation in Minnesota, Ohio; and Washington, 1911–19” (NBER Historical Paper No. 64).


Stanley L. Engerman, NBER and University of Rochester; and Kenneth I. Sokoloff, NBER and University of California, Los Angeles, “Factor Endowments, Institutions, and Differential Paths of Growth Among New World Economies” (NBER Historical Paper No. 66).
Margo presents new archival evidence on the rental price of housing in the New York City metropolitan area during 1850 to 1860: newspaper advertisements are detailed enough to allow for the construction of price indexes that control for some housing characteristics, as well as for location within the metropolitan area. Margo finds that size was a significant determinant of rental price, as was location in the metropolitan area. He also finds that the price of housing increased relative to a general index of wholesale prices over the period.

Rosenbloom extends previous research on labor market integration to all male manufacturing workers in 114 cities from 1879 to 1919. He uses average earnings adjusted for differences in living costs, and finds that a well-integrated market for manufacturing labor existed in the North as early as 1879. The earnings data also suggest the emergence of a unified labor market in the South at this time. However, large and persistent North–South differentials indicate that, despite the integration of regional labor markets after the Civil War, a unified national labor market had not yet developed.

Fishback and Kantor trace the political–economic history of the success of compulsory state insurance in Minnesota, Ohio, and Washington from 1910–20. State insurance gained broad support in these states because a coalition of progressive legislators took control of their respective legislatures, bringing with them the idea that government had the unique ability to correct market imperfections. The authors argue that the government's dramatic expansion after the 1932 federal election was not unprecedented. In fact, the ideological roots of New Deal activism were planted during the debates over compulsory state insurance and workers' compensation in the 1910s.

Calomiris and Mason use individual bank data to address the question of whether solvent Chicago banks failed during the June 1932 panic because of confusion by depositors. They divide Chicago banks into three groups: panic failures, failures outside the panic window, and survivors. They then compare the characteristics of the three groups, and conclude that banks that failed during the panic were similar to others that failed, and different from the survivors. The special attributes of failing banks were distinguishable at least six months before the panic, and were reflected at least that far in advance in stock prices, failure probabilities, debt composition, and interest rates. During the panic, failures reflected relative weakness in the face of common asset value shock, rather than contagion. However, cooperation among solvent Chicago banks was a key factor in avoiding unwarranted bank failures.

Engerman and Sokoloff highlight the relevance of substantial differences in the degree of inequality in wealth, human capital, and political power in accounting for the variation in records of growth of Canada and the United States versus other New World economies. They suggest that the roots of these disparities in inequality lay in differences in the initial factor endowments of the respective colonies, particularly their suitability for the cultivation of sugar and other crops with economies of production in the use of slaves, and the presence of large concentrations of Native Americans. Their greater equality in wealth, human capital, and political power may have predisposed the United States and Canada toward earlier realization of sustained economic growth, the authors conclude.

### Derivative Securities and Risk Management

Members of the NBER's Asset Pricing Program and their guests met at the Bureau's Cambridge office on March 3 to discuss "derivative securities and risk management." Program Director John Y. Campbell, also of Harvard University, and Kenneth S. Rogoff, NBER and Princeton University, organized this program.

**Paul Kupiec** and **James O'Brien**, Federal Reserve Board, "A Precommitment Approach to Capital Requirements for Market Risk"

**Discussants:**
- Franklin Allen, University of Pennsylvania, and
- Victor Ng, International Monetary Fund

**Gregory Duffee**, Federal Reserve Board, "On Measuring Credit Risks of Derivative Instruments"

**Discussants:**
- Fischer Black, Goldman Sachs, and
- Jeremy C. Stein, NBER and MIT

**Sanjiv R. Das**, Harvard University, and

**Peter Tufano**, NBER and...