Editors' Summary

The Brookings Panel on Economic Activity held its seventy-third conference in Washington, D.C., on April 4 and 5, 2002. This issue of *Brookings Papers on Economic Activity* includes the papers and discussions presented at the conference. The first paper investigates the origins and features of the economic boom in Ireland during the 1990s, including the country's rapid employment growth and apparent productivity miracle. The second paper analyzes changes in male unemployment and labor force participation in the United States over the last four decades, and, focusing on the 1990s, shows that declining participation rates, especially for less-skilled men, clouded their otherwise improving labor market conditions. The third paper studies the interaction of firms' investments in information technology with their investments in intangible assets such as organizational structure, and the effect of these joint investments on firms' market value. A report in this issue assesses the recent U.S. recession and its ongoing recovery, reevaluates the current system for identifying recessions, and considers the outlook for corporate profits and equities markets. The issue concludes with a symposium on new international arrangements for distressed sovereign debtors. The first of the three symposium papers argues that the problem should be addressed by replacing official lending to developing countries with aid, forswearing multilateral bailouts of troubled debtors, and placing jurisdiction over private debt disputes in the national courts of the debtor. The second calls for broad forgiveness of the debts of the poorest and most heavily indebted countries in the context of efforts to achieve recently agreed-upon international development goals. The third symposium paper evaluates ideas for a new sovereign bankruptcy arrangement within the threefold broad objectives of bankruptcy arrangements in general, namely, preventing a destructive race to seize the debtor's assets, forestalling creditors from delaying restructuring, and allowing the debtor to make a fresh start.

IRELAND'S ECONOMIC PERFORMANCE IN THE 1990s has been described as a miracle, and for understandable reasons. Early in the decade Ireland ranked twenty-second among the world's nations in output per capita, but by the end of the decade it had risen to ninth. Between 1993 and 2000, annual GDP growth averaged 9.3 percent and employment growth averaged 4.8 percent. These gains contrasted sharply with the economic problems and lackluster performance of the preceding two decades, during which unemployment rose above 15 percent, the current account deficit grew to unsustainable levels, and government debt was rising so rapidly that many observers feared a fiscal crisis. In the first paper of this issue, Patrick Honohan and Brendan Walsh analyze the Irish experience and identify a number of developments that help in understanding the boom of the 1990s. In doing so they correct the impression that Ireland has achieved far more rapid productivity growth than conventional models would predict. They point out that, although the employment gains of the boom period have been remarkable, the recorded gains in output exaggerate what actually happened. Under their accounting of output, no productivity miracle has accompanied Ireland's employment gains.

Honohan and Walsh divide the recent decades of Irish economic performance into three episodes. The first, which established the initial conditions for the sea change in performance that followed, started in the mid-1970s, when a period of gradual growth was interrupted by the inflation and recessions triggered by the two oil price shocks. Fiscal and monetary policy turned aggressively expansionary in 1977, when a new government came to power in the midst of rising unemployment and growing labor unrest. When the government changed hands again in 1981, after the second oil price shock, annual inflation had reached 21 percent, unemployment had climbed to double digits, and the fiscal path appeared unsustainable, with the deficit at almost 15 percent of GDP. For the next several years, under a series of insecure coalition governments, public services and income support programs were maintained as unemployment continued to rise. Taxes were raised repeatedly, increasing government revenue to almost 40 percent of GDP, up from 28 percent at the start of the 1980s. Nonetheless, government debt continued to grow faster than GDP. The second episode started in 1987, when a new government was able to alter the aims of fiscal policy and win the cooperation of labor, and when improving external conditions helped launch an economic recovery. The third episode started in 1993, when the nascent recovery accelerated into a sustained boom. These last two episodes are the focus of the authors' analysis.

The new government that came to power in 1987 imposed new spending restraints, temporarily freezing public sector hiring and cutting government capital spending. No important changes were made to social welfare or employment protection programs, which already were not particularly generous by European standards. However, the new government did embark on a program of longer-run tax reduction, and it used the incentive of these tax cuts in negotiations with the labor unions over wage restraint and cooperation in avoiding work stoppages. The resulting agreements ushered in a period of labor peace and wage moderation, which contributed to the attractiveness of Ireland for business firms. The tax reductions sharply raised income tax thresholds, exempting increasing numbers of lower-paid workers from income taxes. Over 1985–2001 the marginal tax rate on income and payroll taxes combined for a worker with average earnings fell from 68 percent to 48 percent. The standard corporate tax rate was cut from 50 percent to 16 percent, and the capital gains tax rate was cut from 60 percent to 20 percent. Because these tax reductions were introduced over an extended period during which economic growth quickened and profits soared, the ratio of tax revenue to GDP remained approximately stable between the mid-1980s and 2000.

The authors credit these initiatives of the new government with creating important preconditions for the expansion that started in 1987 and the boom that eventually followed. They also credit the substantial expansion of structural grants from the European Community; these began in 1988 and allowed a resumption of public capital spending, which had been postponed in the initial fiscal tightening. But the authors reject the "expansionary fiscal contraction" model that some observers have offered: unlike in that model, Ireland's expansion after 1986 was not led by lower interest rates and rising investment. Rather it was led by exports and consumption, whose growth the authors attribute to rapid economic expansion among Ireland's trading partners, wage moderation, the devaluation of 1986, and labor peace, which cut days lost to industrial disputes after 1995 to 20 percent of the 1970–85 average. The transformation of the expansion into an outright boom was marked initially by a renewed surge in exports, aided by a further devaluation in early 1993, and by a surge in residential construction. Eventually an acceleration in consumer spending paralleled the rapid rise in disposable incomes. And, in the last years of the decade, business capital formation, especially outside of manufacturing, rose sharply.

The remarkable rise in employment during the boom years reduced the unemployment rate below 4 percent in 2001. But this improvement is only a small part of the employment story. Between 1991 and 2001, nonagricultural employment rose by 667,000, or 31 percent of the 1991 working-age population. The healthy job market supported net inward migration of 110,000 over that period, compared with outmigration of 125,000 in the preceding five years. The total working-age population rose by 400,000. The authors turn to a sectoral breakdown to identify where the jobs were created. Between 1985 and 2000 the fastest-growing industry was building and construction, which accounted for 16 percent of the total employment gain, and the second-fastest-growing was high-technology manufacturing—electronics, pharmaceuticals, and medical instrumentation—which accounted for 13 percent of the gain. Market services, which ranges from financial and legal services to restaurants and hotels, was the third-fastest-growing sector and, because of its size, accounted for 54 percent of the total gain. The relatively modest employment contribution of high-technology manufacturing, which is dominated by foreign firms and where much foreign investment is concentrated, contrasts with the common observation that foreign investment has been the key to the Irish resurgence.

The contribution of foreign firms to the economy's measured output is markedly greater than their contribution to employment. Honohan and Walsh analyze why this is so and how it distorts the aggregate growth statistics for Ireland. They observe that Ireland has become almost an entrepôt economy in some of its manufacturing industries that are dominated by multinational corporations. In their most extreme example, the industry that produces pharmaceutical chemicals accounted for just over 0.3 percent of total employment in 1999, yet its value added amounted to 8½ percent of GDP, implying a net output per worker of $2½ million. Other industries with strikingly low labor shares include those dominated by the manufacture of soft drink concentrates and the reproduction of software. All these industries produce patented products whose value derives largely from research and development done by the parent firm and from inputs imported from the parent or its other affiliates. Ireland's low corporate profits tax encourages multinationals to set intrafirm transfer prices for these inputs in a way that greatly increases the profits recorded in Ireland, and thus the value added attributed to Ireland.

The authors show that such effects are large enough to meaningfully distort the aggregate data on output and, hence, on productivity. They estimate that GDP in 1999 would have been 15 percent lower than the official figure if the output of just four industries dominated by multinationals were valued in a manner consistent with the average labor productivity of corresponding industries in other European countries. Although this adjustment is very crude, alternative adjustments tell a similar story. Ireland's GNP, which omits the profits of foreign-owned firms operating in the country (but is also affected by variations in the net interest payments to foreigners on government debt), is well below its GDP and grew significantly less than GDP during the 1990s. And a measure of GDP adjusted to omit the profits of multinationals grew less than unadjusted GDP. When productivity growth is calculated using this last adjustment, the productivity miracle in Ireland's official statistics vanishes. For the period 1995–2000, when official GDP per worker rose at a 4.7 percent annual rate, adjusted GDP per worker rose at a 2.3 percent rate, not far from Ireland's long-term average, and not far from productivity growth rates experienced in other countries during this period.

Honohan and Walsh stress that Ireland's performance has been outstanding even after correcting away the productivity miracle in the official statistics. Even by their adjusted output measures, GDP per capita soared in the 1990s. It rose at a 4.7 percent annual rate over the decade as a whole and at a 6.3 percent annual rate during 1995–2000. In contrast, it had been essentially flat during 1980–85 and had risen at a 3.1 percent rate during the 1970s. By 2000 the level of adjusted GDP per capita had converged to the average in the European Union.

THE U.S. ECONOMIC EXPANSION of the 1990s brought with it a dramatic decline in unemployment. As the unemployment rate fell below 6 percent, many economists expected inflation to accelerate and recommended tightening monetary policy. Yet by the end of the decade unemployment had fallen to 4 percent with scarcely any sign of inflationary pressures. Economists who believe in the NAIRU were at first skeptical that any change had occurred in the relationship between labor market tightness and inflation, but by the end of the period many had substantially lowered their estimates of the NAIRU and were searching for structural changes in the labor market that might account for the change. Eleven years ago Chinhui Juhn, Kevin Murphy, and Robert Topel presented a Brookings Paper titled "Why Has the Natural Rate of Unemployment Increased over Time?" They documented the dramatic rise in unemployment and in nonparticipation in the labor force among prime-aged males between 1967 and 1989, and they concluded that structural factors had dramatically reduced the prospects for a return to low rates of joblessness in the near future. In the second paper of this issue, these same authors use their original framework to reexamine the labor market after the long expansion of the 1990s.

The authors use data for 1967 through 2000 obtained from the annual supplement to the March Current Population Survey. The supplement identifies certain personal and household characteristics of the respondents and provides information on their labor market outcomes during the previous year. For each individual these include the number of unemployment spells and the number of weeks spent employed, unemployed, or out of the labor force. The survey also includes questions about earnings and hours worked, which the authors use to calculate average hourly wages. As in their earlier paper, the authors confine their analysis to men with one to thirty years of potential labor market experience, to avoid the complex issues concerning women's labor force participation and the issues associated with early retirement and pensions. They avoid other measurement problems by excluding men who spent part of the year in school or in military service. The authors express rates of unemployment, nonemployment, and nonparticipation as fractions of this population and calculate them as the number of weeks a year spent in each of those three states divided by fifty-two and averaged over the population. They show that the trend and cycles of annual unemployment rates calculated from these data closely track those of the familiar unemployment rate based on the monthly household survey for the entire population, although the means of the two series differ over the period.

The authors' 1991 paper reported that the long-term trend in unemployment rates understated the growth in joblessness because labor force participation had declined. They now show that the rise in nonparticipation continued during the 1990s despite the shift from rising to declining unemployment. As a result, the nonemployment rate, which is the sum of the unemployment rate and the nonparticipation rate, ended the decade unchanged from the end of the 1980s, at 11 percent. Looking across the entire sample period, the unemployment rate ended the 1990s only 0.8 percentage point above its level in the extremely tight labor market of the late 1960s, but the nonemployment rate was nearly 5 percentage points higher.

To further examine the growth in nonemployment, the authors look at changes in its concentration and at reasons for joblessness. They show that, between the late 1960s and the late 1990s, the amount of joblessness accounted for by those working at least part of the year was little changed, whereas the amount accounted for by those who did not work at all rose from 1.8 percent to 6.1 percent of the population. The fraction of total joblessness experienced by those who did not work at all during the year had been rising steadily over this long period and accelerated during the last decade. The authors find that those reporting being ill or disabled accounted for 0.8 percentage point out of the 1.9-percentage-point rise in labor force nonparticipation since 1982–83, when this category began expanding noticeably. The ill or disabled were relatively even more important in accounting for full-year joblessness. The authors cite other researchers who have identified effects on participation rates stemming from legislative and administrative changes in disability benefit programs, and they note that eligibility standards for these programs were substantially liberalized in 1984.

The authors devise a model that allows them to estimate the flow rates into and out of unemployment (or nonemployment) that would have kept it constant at each year's observed level. Using these estimated flow parameters, they then calculate the steady-state values of average spells and durations of both unemployment and nonemployment for each year. They find that over their sample period the average duration of unemployment spells estimated in this way doubled, from 2.1 months to 4.2 months, while the entry rate into unemployment declined to 0.7 percent a month from 1.1 percent a month. Before the recession of 1991–92, cyclical fluctuations in unemployment and nonemployment were driven almost equally by changes in both the incidence and the duration of spells. But rising incidence played a minor role in that recession, whereas durations rose sharply, and the long decline in unemployment that followed was driven mainly by a reduced probability of becoming unemployed. The authors observe that, with fewer but longer spells, the distribution of unemployment across the population is much more concentrated today than in the past. Not surprisingly, they find that the average duration of nonemployment spells has also grown steadily, reaching 15.1 months, while the probability of becoming jobless has fallen below its level in the tight labor markets of the late 1960s.

Dividing their sample into percentile groups of the wage distribution, which they take as a proxy for skill groups, the authors show that the labor market experience across these groups has varied widely. Before 1989, both unemployment and nonparticipation rose the most in the lowest wage group. This trend was reversed during the 1990s: the lowest wage group saw unemployment fall the most and nonparticipation rise the least, although these reversals did not fully undo the changes of the two previous decades. For workers near the median of the wage distribution (percentiles 41 to 60), unemployment was up only slightly over the entire period, but nonparticipation rose 2.6 percentage points, and thus nonemployment rose 3 percentage points. Over the entire period nonparticipation and nonemployment rose for all percentile groups; this rise was greatest for the least-skilled workers and smaller for each successively higher skill group.

Women's labor force participation and wages have generally risen over the entire period from the 1960s to the present. Might the long-term declines in men's labor force participation and employment rates reflect a shift in their labor supply in response to the improved labor market opportunities of their wives? The authors examine this hypothesis and reject it. For their entire sample of men, they show that the long drift upward in nonparticipation and nonemployment is concentrated among men without a working wife. They also show that among less-skilled men (those in the 1st to the 40th percentile of the wage distribution), who experienced the largest increases in joblessness, the percentage with a working wife actually declined over time, as declining marriage rates more than offset rising women's participation. For these men, average real household income increased only slightly after the early 1970s, when the trend toward rising wage inequality for the less skilled started. In contrast, for men above the 60th wage percentile, whose participation rates were nearly stable, the share of households with working wives rose through the late 1980s and then leveled off, and their household incomes rose rapidly.

The authors' preferred explanation for the nonemployment patterns they describe relies on the movements of real wages and employment of different skill groups over their long sample period. Over this period, and most clearly from the early 1970s to the mid-1980s, the largest increases in nonemployment rates and the largest declines in real wages occurred among less-skilled men. As in their earlier paper, the authors interpret this as showing that declining rewards to work caused less-skilled workers to choose to work less. Their worsening relative wages and low relative employment rates are both the result of a shift in demand away from this group of workers. The authors estimate labor supply elasticities from cross-sectional data for the early 1970s and late 1980s and use them to predict the change in nonemployment during the 1990s for different wage percentile groups. These estimates show that the employment rates of less-skilled workers are more responsive to changes in wages than those of other workers. For this group of workers, whose real wages rose during the 1990s after nearly two decades of decline, the equations correctly predict a decline in nonemployment, although they substantially underestimate its size. The authors also observe that the recovery in employment for these workers preceded the recovery in their wages, which did not start until the middle of the decade. They judge that the estimated model works reasonably well over long periods but is less successful in predicting the short-run dynamics of the labor market.

The authors conclude that their basic framework, in which labor supply responds to shifts in demand, continues to usefully predict labor market outcomes. They also conclude that wage developments, together with the expansion of disability payments, which improves the attractiveness of nonemployment, are the key to the observed movements in nonparticipation and joblessness. The authors point to the reversal during the last half of the 1990s of previous wage and employment trends for the least-skilled men as evidence that growth in inequality may have run its course. But they see the continuing decline in labor force participation among these men as an ongoing problem. Because an important proportion of these men have withdrawn from the labor market for what the authors determine to be demand-related reasons, their assessment of the labor market outlook for less-skilled men is "rather grim."

DURING THE 1980S, AS FIRMS INCREASINGLY introduced computers into their operations, the failure of productivity to grow faster was puzzling. A decade later productivity growth had finally quickened, and analysts today are trying to pin down what finally made the difference. In the technology-producing industries themselves, productivity had been rising all along, and at very rapid rates. But the technology sector was initially far too small to have a large effect on aggregate productivity, and even by the end of the 1990s it could account for only a modest portion of the faster growth in the aggregate. It was apparent that productivity was rising faster in the broader economy as well, and researchers have been trying to determine why. In the third paper of this issue, Erik Brynjolfsson, Lorin Hitt, and Shinkyu Yang present an empirical model that extends work they and others have pioneered in which the interaction of investments in information technology (IT) and intangible capital is the key to firms' productivity improvement. As they see it, early business applications of computers typically aimed to substitute computers for low-skilled labor. More recent applications have used IT to facilitate the redesign of firms' production and distribution systems, making IT investment complementary with investment in such organizational assets and greatly enhancing productivity in those firms that successfully combine the two.

The authors review recent research that explores the importance of organizational changes for increased productivity; this research includes case studies of conspicuously successful firms as well as econometric research that has documented the complementarity between IT and work organization. They note that organizational assets or their effects can be observed in more than one way. Some organizational changes can be observed directly or through surveys. The enhanced real returns provided by efficiently combining IT investments with organizational changes should be measurable as higher subsequent output than can be accounted for by conventional returns to capital and labor. And the expected future effect of such IT-driven combinations should be promptly reflected in the investing firm's market valuation. In the present paper, the authors focus mainly on this third type of evidence, attempting to estimate the effect of IT investment and investment in organizational changes on the market values of individual firms over the 1987–97 period.

The authors' basic model follows standard finance theory and recent research by Robert Hall in relating the market value of the firm to the capital goods it owns, where capital goods are broadly defined to include all assets of the firm, including accumulated intangible assets. The authors show that optimizing managers will invest in such a way that the market value of the firm, defined as the value of common and preferred stock plus total debt, will equal the sum of the values of its assets. In an estimating equation relating a firm's market value to its assets, if all assets are accounted for and there are no adjustment costs, the expected coefficient on each asset will be 1. Adjustment costs associated with adding assets will bias the coefficients on those assets upward. And, most important, if some assets are omitted from the equation, a coefficient greater than 1 will be expected on those assets that are positively correlated with the omitted assets. The authors use these propositions in interpreting their results.

Their overall data set is a panel of 1,216 firms for which they have annual market values of the firm and values of computer capital, other physical plant and equipment (PP&E), and other noncash balance sheet assets. Because not all firms are in the sample in each year of their eleven-year sample period, this data set contains 7,564 observations. In compiling the data, the authors omitted firms that principally produce computers or software, firms in the communications sector, and firms for which data are inconsistent from year to year. For 272 of their 1,216 firms they also have data on organizational practices, distilled from a series of surveys of large firms taken in late 1995 and early 1996. These provide 2,097 observations over the sample period. With these data, the authors construct a proxy for organizational assets for these 272 large firms that permits them to examine interactions with the firm's IT capital more explicitly.

The authors first report on a range of pooled regressions explaining the market value of a firm by the value of its assets. Because many firms with different sampling frequencies are pooled over eleven years, in these and their other regressions they include dummy variables for each year and for each industry represented in the sample. Ordinary least squares regressions give a coefficient of 1.5 on each dollar of installed PP&E other than computers, a coefficient of 12 on each dollar of computer assets, and a coefficient of 1 on other assets. These values indicate that computer assets, and to a lesser degree PP&E, are subject to adjustment costs or are correlated with assets that are omitted from the regressions. The authors suspect that adjustment costs explain the moderately high PP&E coefficient, but that correlation with omitted variables accounts for the extremely high coefficient on computers. Results with some alternative estimation techniques do not dislodge these basic results. Using a least absolute deviation regression, which minimizes the importance of outliers, reduces the PP&E coefficient but has little effect on the computer coefficient. When the equations are run on the same variables in difference form, with the difference taken over intervals ranging from one to ten years, the results are harder to interpret. For one- and two-year differences, the coefficient on computers becomes negative, which the authors believe reflects measurement problems, but for differences of four years or longer the coefficient becomes comparable to those in the regressions using levels of the variables. Year-by-year cross-sectional regressions also give large values for the computer coefficients.

To further explore their hypothesis that these large coefficients represent a correlation of computer assets with changing organizational assets in firms, the authors construct a composite index for the presence of organizational assets, *ORG,* from several measures of organizational structure obtained from the mid-1990s surveys described above. These measures fall within four broad categories: structural decentralization of decisionmaking, individual decentralization, team incentives, and skill acquisition. In pooled regressions similar to their first set, but with the smaller sample of 272 firms for which they have data to construct *ORG,* the authors show that, when *ORG* is interacted with each of the asset variables and the interaction variables are added to the regressions along with the asset variables, only the interaction with computer assets is large and statistically significant, and the coefficient on computer assets alone remains well above 1. The authors interpret these results as suggesting that firms with large investments in computers have disproportionately large amounts of intangible organizational assets and that the interaction of the two is the main factor accounting for the high coefficient estimates on computers in their market value regressions. To support their market value results, they also regress firms' output on their previous inputs of capital and labor, along with their computer assets, *ORG,* and the interaction of the two. The coefficients on these last three variables are positive for outputs ranging from zero to three years following the corresponding inputs, a result the authors interpret as indicating the positive contribution of these variables to multifactor productivity.

Although all the results are consistent with the authors' hypotheses about how computers interact with changes in firms' organization to enhance market values and future productivity, some participants at the conference, whose remarks appear in the comments and general discussion following the paper, stressed that econometric difficulties left the interpretation of the results uncertain. Nonetheless, the authors believe they have identified the presence of some firms that have harnessed computer technology to refine their business organization in a way that creates special value. Although they regard their present attempts as only a start at identifying the specific organizational practices and technologies that make for greater efficiency, they believe they have established the importance of those practices and technologies for the acceleration in productivity that has occurred.

A GREAT DEAL HAS CHANGED on the U.S. economic scene in the past two years. The historic collapse of the NASDAQ bubble and substantial decline of the broader stock market were the most conspicuous event. The economy itself moved from a rapid expansion to a mild recession. And corporate profits as reported by Standard & Poor's (S&P), which had boomed during most of the 1990s, weakened disproportionately after the end of the decade. In a report in this issue, William Nordhaus provides a provocative discussion of these developments and of what they portend for the economic expansion and the stock market going forward.

The Business Cycle Dating Committee of the National Bureau of Economic Research (NBER) is the official arbiter of when recessions in the United States start and end. Nordhaus argues that the committee should provide a much richer classification of recessions than it now does, one that would reflect the severity of downturns as well as their presence. He compares movements in four broad measures of economic loss—declines in real GDP, declines in nonfarm employment, increases in unemployment, and positive output gaps—both to see how the periods of weakness they identify compare with the ten postwar recessions identified by the NBER and to show how much recessions vary in severity. Periods when the two-quarter average of real GDP has declined coincide with every postwar recession identified by the NBER and show no false positives. However, the recent recession, which Nordhaus assumes had its trough in the fourth quarter of 2001, barely qualifies as a recession by this measure. Periods when the two-quarter average of private nonfarm employment declines also match every postwar recession; by this measure the latest episode appears more clearly as a downturn but is tied with the 1970 recession for the mildest of the ten. Periods of four-quarter increases in the unemployment rate also match all recessions but produce several small false positives compared with NBER dating. By this measure the last two recessions have been the mildest. Finally, the output gap, which Nordhaus calculates as the percentage difference between actual and potential GDP (the latter as estimated by the Congressional Budget Office, or CBO), is the least correlated of the four with NBER recession timing. It provides a measure of cumulative economic loss, but its accuracy depends on how accurately potential output is estimated. Nordhaus observes that, by the CBO's estimate, the economy remained near its potential at the trough of the last recession.

To go beyond simple recession dating, which does not distinguish between the last, very mild recession and a much deeper contraction like that in 1982 or even 1933, Nordhaus proposes classifying downturns according to a scale like that used for hurricanes, with categories ranging from I (a pause in economic growth) to V (a depression). He then offers the following tentative rankings of specific historical episodes based on the size and duration of declines in output and employment, gaps in output, and increases in unemployment. The depression of the 1930s is a full-blown category V. The first nine postwar NBER recessions range from category II, a mild downturn, to category IV, a deep and prolonged recession. And their number declines to eight, because he counts the 1980–82 period as a single downturn. Nordhaus classifies the 2001 recession and the soft quarters in 1963 and 1967, two episodes that the NBER did not identify as recessions, as category I events.

Several comprehensive measures of corporate profits are available for the U.S. economy: S&P operating profits and reported profits, both on an after-tax basis, and profits in the National Income and Product Accounts (NIPA), which are available both before and after taxes and with and without adjustments for capital consumption and inventory valuation. All these measures display much the same broad pattern from 1990 to the present, rising during the long expansion and declining sharply when the expansion faltered. However, they depart importantly from each other both in the magnitude and in the timing of these swings. Nordhaus discusses the differences in coverage, definitions, and data sources among the series but observes that these differences do not readily account for the recent discrepancies. After-tax NIPA profits peaked in 1997, whereas both operating and reported S&P profits climbed sharply for three more years. The subsequent decline in reported S&P profits was especially severe. Nordhaus discusses a variety of accounting irregularities—what he calls "Not Generally Accepted Accounting Principles"—that have been reported in the press for individual firms. These include swapping capital assets and capitalizing the outflow while recognizing the inflow currently, booking pension fund returns as current income, and recording sales of products still in research. And he reasons that such accounting contaminated the aggregate S&P earnings series, helping account both for their rise and for their subsequent decline.

Nordhaus obtains a more realistic estimate of recent S&P earnings by regressing the logarithm of historical S&P reported earnings on the logarithm of historical unadjusted NIPA earnings, a cyclical variable, and a constant. He then uses predicted values from this equation in an attempt to correct reported recent S&P earnings for accounting tricks and the cycle. And he projects these corrected earnings for the period 2001:4 through 2002:4 by assuming that GDP grows 0.5 percentage point faster than potential. By this procedure he estimates that S&P earnings in 2001 were depressed by 30 percent for cyclical and accounting reasons, and that earnings in 2002:4 will be 55 percent higher than their uncorrected level in 2001:4.

Turning to prospects for the stock market, Nordhaus presents a model that relates prospective stock returns to current earnings-price ratios and safe real bond yields. Under strong assumptions about the expected returns to tangible and intangible assets, the earnings-price ratio, corrected for temporary cyclical swings in earnings, provides an estimate of expected real returns on equities. And the difference between that expected return and the safe real bond yield, which he calls the equity spread, should reflect the systematic risk of equities. Nordhaus shows that even his corrected S&P earnings measure currently produces an equity spread that is very near zero. Because he sees the prospects for economic expansion as limited by the fact that the economy was near its potential at the end of 2001, he judges the chances for a major change in the spread to be limited as well. Slow growth would keep profits from rising sharply, and if growth should quicken relative to potential, it would invite higher interest rates. With this economic outlook, and with stocks still overvalued relative to their long history, Nordhaus is not optimistic about the outlook for equities.

THE FREQUENT SOVEREIGN DEBT CRISES that have plagued international capital markets, and the controversy that has often attended their resolution, have led to ongoing research and debate about how the international financial system and its institutions might be improved. That debate centers on such issues as the efficiency with which capital is allocated, the economic and political instability that crises bring, and the fairness of the outcomes for both creditors and debtors. Recently, both John Taylor of the U.S. Treasury and Anne Krueger of the International Monetary Fund

(IMF) have offered proposals for reform that have reinvigorated this debate and rekindled interest in formalizing bankruptcy procedures for sovereign debt. In at least one of its versions, Krueger's proposal would make provisions for countries to file for bankruptcy and would give the IMF a central role in granting countries permission to file, in supervising their performance, and in assessing their progress on reforms, as well as continue the IMF's existing role in providing new loans to countries in distress. Taylor's proposal, in contrast, takes a contractual approach to the problem, avoiding formal bankruptcy proceedings altogether. His proposal relies on changing the form of sovereign debt contracts so as to define the rights of all creditors and debtors in the event of a default. And, to further the inclusion of such provisions in future sovereign debt contracts, Taylor proposes that the IMF require their incorporation by any country under an IMF rescue program, or that it reward countries that incorporate the provisions voluntarily by reducing the interest rate on their borrowings from the IMF. In the next three papers in this issue, presented as part of a symposium on international bankruptcy arrangements at the Brookings Panel meeting, Jeremy Bulow, Jeffrey Sachs, and Michelle White address both the broad issue of reforming the present system and the particular proposals offered by Taylor and Krueger. Three shorter discussion papers, by Nouriel Roubini, Hal Scott, and Edwin Truman, reflect on these symposium papers and provide additional analysis.

In the first of the three symposium papers, Jeremy Bulow briefly addresses the recent proposals for international bankruptcy arrangements before turning to his own, more sweeping recommendations for change. Bulow finds Taylor's proposal that all new sovereign debt contracts contain collective action clauses a modest step in the right direction. It recognizes that sovereign debt is now widely held by a variety of market participants rather than by a few major banks, and it would reduce the costs and complications of bankruptcy that arise in such an environment. And, by requiring such clauses in all new sovereign debt, it would eliminate the adverse selection that would result if individual countries imposed such provisions on their own initiative: such a move might signal a greater likelihood of future default, thus raising borrowing costs for those countries. However, Bulow also points to what he sees as a weakness of Taylor's proposal: because a single sovereign may have many different issues and types of debt outstanding at a given time, the holders of one issue or type could hold out even if other holders agreed on a workout plan. He notes that Krueger's proposal avoids this weakness by subjecting all debt to the same procedure, which the IMF or some other international body would initiate. Under this plan, a temporary stay of payments to all creditors would provide time to restructure all debt in a manner agreeable to a supermajority of creditors. However, the plan still leaves room for substantive disagreements among different classes of creditors, and this would invite lengthy negotiations. It would also leave much sovereign debt under the jurisdiction of first world legal structures, which means that a country's foreign debt would not be handled together with domestic claims. Bulow also notes that both the Taylor and the Krueger plans would leave the international financial institutions (IFIs), as well as first world courts, in the middle of any debt negotiations. Because debt negotiations by their nature involve transferring resources from debtors to first world creditors, he reasons that these institutions, which are effectively controlled by first world countries, should be as removed from these negotiations as possible.

Bulow observes that the presence of the IFIs, which are in effect sovereign creditors with a role and status that differ from those of private creditors, complicates the sovereign debt market. He illustrates this complexity by considering how the presence of the IFIs influences the market for private lending to governments and what this implies for the seniority of different forms of debt—such an assessment of seniority is the conventional way of thinking about who loses the most in a debt restructuring. Knowing that IFIs exist as a probable source of bailout funds, private lenders and sovereign borrowers may engage in more and larger debt transactions with each other than is economically efficient. That outcome is consistent with IFI loans being effectively junior to private loans in this environment, whatever their legal designation. Yet to date hardly any debt to the IMF or the World Bank has ultimately defaulted, whereas private creditors have often restructured at a loss. This ambiguity about true seniority arises from the uncertain and ad hoc response of the IFIs to recurring crises.

Bulow's own policy recommendations follow on those that he and Kenneth Rogoff have previously offered. They would cut through the existing ambiguities by fundamentally changing the international financial regime as it interacts with developing nations. Bulow proposes replacing all IFI loans with aid, leaving lending to the private sector, and shifting all litigation and enforcement of loans to debtor-country courts. Because official loans to developing countries today are a bundle of loans and subsidies, Bulow reasons that unbundling them offers the advantage of permitting a more rational and equitable allocation of aid. In this connection, a specific benefit of aid grants is that they can be directed to nongovernmental organizations as well as to governments and thus better targeted to particular projects and goals. Allowing the IFIs to escape from debt renegotiations would be a further benefit of moving from loans to aid. Bulow also notes that both the IMF and the World Bank manage to keep their true finances out of the budgets of the United States and the other governments that support them, and that more transparent accounting for aid would lead to its more efficient deployment and possibly to its enlargement. In an accounting sense, since its inception in 1944 the World Bank has only "cost" the United States $2 billion, which is the capital it has paid in. In total, the Bank's paid-in capital is less than $12 billion, but it has a subscribed capital of $190 billion and $115 billion in loans outstanding. In effect, the U.S. government implicitly guarantees about $30 billion in developing country debt. The IMF's accounting is even murkier. The United States' quota with the IMF has no impact on the U.S. budget, because it is offset by a credit in the form of reserves held with the IMF. Yet the amount of IMF lending is widely reported during times of crisis. Bulow believes that more transparent accounting might actually lead to larger amounts of ongoing aid, because U.S. taxpayers presently overestimate the extent of foreign aid their government provides.

Bulow favors moving jurisdiction over sovereign debt to the debtor's courts on grounds that directly challenge an important justification for present arrangements, namely, that making debts enforceable in the creditors' countries encourages lending by first world creditors. Stressing the moral hazard argument, Bulow maintains that this results in excessive and inefficient lending. The favorable effects he sees from moving jurisdiction include the incentives it would provide for countries to invest in sound projects with a high likelihood of success, and the disincentives it would provide to lending to corrupt governments that would fail to use the proceeds productively. He also sees this change as leveling the playing field between foreign and domestic debt and between debt and equity investments. Although he concedes that his proposal might make international capital markets resemble those in the 1950–75 period, when almost all private inflows to developing nations were in the form of direct and equity portfolio investment, he reasons that the growth rates of developing countries provide little evidence that the earlier period produced worse results.

Bulow also sees broader advantages to taking the IMF and the World Bank out of the bailout business. In developing countries, the staffs of these organizations are widely seen as working for the rich creditor countries, and consequently their recommendations and the conditions on lending they impose are viewed with suspicion. If the IFIs themselves were not creditors, he reasons, their professional staffs would more likely be viewed as honest brokers whose information and advice are sought by all sides. Bulow suggests that shifting the IFIs' expertise into making project grants would improve the effectiveness of the aid component of their present loan operations. And he reasons that losing the ability to impose macroeconomic adjustment plans, which now accompany loan programs, would not be costly, because in the reformed environment countries would themselves want to pursue macroeconomic policies that attract capital.

Jeffrey Sachs focuses on the particular problems that confront the most heavily indebted poor countries. He observes that foreign debt problems have never been handled through a system of well-established rules. During the age of imperialism and right up to the Great Depression, creditors often resorted to force or the threat of force in their dealings with debtor countries. Since World War II, debt crises have been worked out in negotiations between debtor nations and creditors, often with the engagement of international institutions such as the IMF in which creditor interests predominate. Sachs argues that, as the result of such ad hoc negotiations, debtor countries have often been locked into long-term instability and profound poverty, effectively losing their sovereignty to the IMF and the World Bank. Meanwhile the bailouts of private lenders by IFIs have raised the moral hazard of indiscriminate future lending in the expectation of future bailouts.

To illustrate the problem confronting poor countries, Sachs outlines a model of the poverty traps into which such countries can fall as the result of an excessive foreign debt burden. The model's central point is that positive growth requires positive saving, and that the difference between foreign aid and foreign debt service costs is critical to whether poor countries can achieve positive saving. Sachs shows that, after the mid-1970s, a number of the poorest countries were squeezed between declining real aid per capita and rising debt burdens. Although their official bilateral debt has been repeatedly restructured through deliberations in the Paris Club (whose members include the principal creditor governments), relief was never systematically related to the needs of these poor debtors; indeed, until 1988, the present value of their debt was not reduced at all. Using a three-way classification of fifty-nine debtor nations that underwent Paris Club restructuring during 1975–96, Sachs finds that only nine have been "cured" of their unsustainable debt burdens, and only one of those, Equatorial Guinea, which discovered massive offshore oil reserves, was among the poorest countries in the group at the outset. Thirty-nine countries, including all of those initially among the poorest, remain in "chronic crisis" today. These countries achieved a median per capita annual growth rate of only 0.3 percent during the 1990s. The remaining twelve countries are "in remission": they are current on their debt service and have seen recent improvement in their economic and financial conditions but continue to have IMF programs in place.

Sachs' proposals for reforming the debt relief process for poor countries are informed by what he sees as the two distinct motivations of bankruptcy law in general. The first is to avoid a creditor "grab race" that could undermine the value of the assets of an insolvent debtor, to the detriment of both debtor and creditors. The second is to provide a fresh start to insolvent debtors. Sachs notes that U.S. bankruptcy law deals with both these problems, although corporations can ultimately be forced into liquidation, whereas municipalities and individuals are assured of a fresh start by the protection of important assets and of future income. In the context of sovereign debt, collective action to avoid the creditor grab race is the most pressing issue for middle-income debtor countries, whereas for poor countries the need for a fresh start is even more important. Sachs argues that past programs for dealing with the debt of heavily indebted poor countries have been based on changing criteria, which have not been tailored to the situations of individual countries and have ignored their need for a fresh start.

To replace the ad hoc methods of the past, Sachs suggests a program with five specific elements aimed at granting a fresh start based on each country's specific needs and at providing incentives for the debtor countries to meet certain well-defined goals. For this purpose he uses the Millennium Development Goals (MDGs) that were endorsed by all members of the United Nations in September 2000. First, debt restructuring should be consistent with a framework in which the debtor countries can achieve the MDGs. Second, in exchange for debt relief, each heavily indebted poor country should be required to prepare medium-term plans for achieving health, education, and infrastructure targets specified by the MDGs. Third, the key U.N. agencies and the IFIs should support countries in formulating these plans and include them in their own country strategy plans. Fourth, an independent review panel, chosen by but not representing either debtors or creditors, should make recommendations on the scale of debt cancellation and increased foreign assistance for each country, based on its individual circumstances. Fifth, the United Nations and the IFIs should publish yearly updates on each country's progress toward the MDGs. Sachs predicts that the assessments that would result from such a program would call for a complete cancellation of debt for most heavily indebted poor countries and an increase in the foreign assistance provided to them. Although the program would be merely advisory, he is hopeful that its transparency and objectivity would highlight the inadequacy of the creditor-dominated approach of the past and call attention to the need for vastly larger resource transfers from the rich countries to the poor.

IN THE THIRD PAPER OF THE SYMPOSIUM, Michelle White examines proposals for a sovereign bankruptcy procedure, using as a framework several broad goals that any procedure for restructuring of distressed foreign debt should aim to achieve. These goals include a quick and orderly restructuring, because delay hurts both a debtor country's economy and creditors generally; rules that deal with the collective action problem by preventing individual lawsuits against the debtor and compelling rogue creditors to accept a restructuring plan; and arrangements that allow the debtor to obtain new loans as soon as possible following a default. With these goals in mind, White examines how experience with U.S. bankruptcy law can guide the design of a sovereign bankruptcy plan. She also considers whether alternative proposals for reform, such as those recently offered by Taylor and Krueger, are preferable to a reform that creates an international court to oversee sovereign bankruptcy.

White reviews three relevant sections of the U.S. bankruptcy code: Chapter 7, which deals with bankruptcy liquidation for corporations and individuals; Chapter 11, which deals with corporate reorganization; and Chapter 9, which deals with municipal bankruptcy. She reasons that a sovereign bankruptcy arrangement that paralleled Chapter 7's treatment of individual debt would provide a useful backstop if a restructuring plan could not be agreed to. Like individual bankruptcy liquidation, which exempts certain of the debtor's assets and any postbankruptcy earnings, such an arrangement would exempt assets covered by sovereign immunity (including assets held within the debtor country and diplomatic assets abroad), discharge debts not covered by liquidation of nonexempt commercial assets, and exempt any future revenue from seizure by creditors. White next discusses several aspects of corporate reorganization under Chapter 11 and calls special attention to the features that help the corporation survive. She observes that such features involve an important trade-off. Because Chapter 11 allows them to retain control and equity remains intact, managers have an incentive to reorganize the firm under Chapter 11 rather than engage in activities that may be destructive to the firm in an attempt to avoid bankruptcy. But managers also have an incentive to file for reorganization in order to reduce debt burdens even if the company is in fact solvent and could pay off its debtors in full. She suggests that a parallel trade-off applies to sovereign default. During the East Asian crisis, officials in several countries went to great lengths to avoid running out of foreign exchange, in the process causing deep recessions; thus there may have been too few defaults in that episode. But theory also suggests that countries may borrow too much and then default if the penalties for doing so are not severe enough. Finally, turning to Chapter 9, White notes that although the sovereign status of municipalities gives this chapter relevance for international debts, there have been too few municipal defaults in the United States to provide useful lessons of how it works in practice.

White then reviews recent experience with sovereign debt crises and the role that international institutions have played. She observes that the growing importance of foreign bonds with their widely fragmented ownership has made debt restructuring increasingly difficult and has put increased pressure on the IMF to bail out countries in financial distress, which, in turn, has led to the recent IMF and Treasury proposals for reforming the process. White discusses in detail how these and related proposals could be expected to affect the sovereign debt market and to what extent they address the goals that a good debt restructuring mechanism should aim for. She concludes that contractual approaches like the Treasury's, which rely on collective action clauses, are unlikely to reach the desired goals. It is difficult to prevent creditors from circumventing their restrictions and from interfering with debtors' ability to obtain new private loans. She finds the IMF proposal more promising. She notes that it adopts many features of Chapter 9 and Chapter 11, and that it addresses the collective action problem and the need for debtors to maintain access to new loans. However, the

IMF plan does not address the difficult and central question of creating an international court to adjudicate bankruptcy procedures; this would require legal changes by a large number of countries. Without such a court, White reasons, the proposal would be difficult to implement. She also warns that, although a successful sovereign bankruptcy procedure would reduce the high costs of default to sovereign debtors and their citizens, it might so change present arrangements as to "dry up the sovereign bond market completely."