Editors' Summary

THE BROOKINGS PANEL on Economic Activity held its sixty-seventh conference in Washington, D.C., on March 25 and 26, 1999. This issue of *Brookings Papers* includes the papers, reports, and discussions presented at the conference. The first paper undertakes an eclectic analysis of trends and developments in the U.S. labor market, in search of clues to explain the current propitious coincidence of low unemployment and falling inflation. The second paper inquires whether, in the wake of recent currency crises in developing economies, economists and policymakers should reconsider their endorsement of capital account liberalization and concede, for some countries, a useful role to official restrictions on capital inflows. The first report examines a fundamental question raised by the recent crises, namely, what contribution foreign capital inflows make to developing economies. The second report provides some new perspectives on the supposedly anemic U.S. saving rate by considering several conceptual adjustments to official saving measures, including the effect of capital gains on household wealth. The concluding report asks whether, after decades of concern about inflation, a bout of deflation may now be in our future, and if so, whether it poses special problems for stabilization policy.

IN THE FIRST QUARTER OF 1999 the U.S. unemployment rate was down to 4.3 percent. This not only was the lowest rate in thirty years but was nearly 2 percentage points below consensus estimates from only a few years before of the NAIRU—the lowest unemployment rate consistent with stable inflation. Indeed, the unemployment rate has been below 5 percent since mid-1997, yet inflation, as measured by all broad price indices, has actually declined in each of the past two years. In the first paper of this issue, Lawrence Katz and Alan Krueger examine this remarkable performance of the U.S. economy and attempt to identify factors that explain it

and to determine whether the improvement is likely to be permanent. They begin by observing that favorable labor market developments are more likely to represent lasting structural changes that could permanently lower the sustainable unemployment rate, whereas developments outside the labor market, such as the favorable price shocks identified by Robert Gordon (*BPEA 2:1998*), are more likely to be transitory. Guided by this distinction, Katz and Krueger organize their analysis of labor market developments around four hypotheses that could help explain a contemporaneous decline in both unemployment and wage pressures: favorable demographic trends, the recent surge in the prison population, improved efficiency in matching workers with jobs, and greater anxiety on workers' part about job security.

Katz and Krueger start with an overview of unemployment, wage, and price developments over recent decades. They note that last year's 4.5 percent unemployment rate was below the low points for unemployment achieved in each of the last three business cycles: 0.8 percentage point below the 1989 rate, 1.3 percentage points below the 1979 rate, and 0.4 percentage point below the 1973 rate. However, unemployment in 1998 was still well above the 3.5 percent rate of 1969 when the Vietnam War was in full swing and inflation was rising. For women, the unemployment rate last year was the lowest since the Korean War. The authors also show that the composition of unemployment durations has shifted toward longer spells. Although spells of greater than twenty-six weeks have fallen by more than half since the 1992–94 period, they are still above their levels at previous business cycle peaks. At the same time, the short-term unemployment rate (that for spells of less than five weeks) fell to near an all-time low in 1998. Thus the average length of an ongoing spell remains higher than at the last two cyclical peaks. Meanwhile the "work experience unemployment rate"—the proportion of labor force participants who experienced any unemployment during the year, a measure that the authors believe is closely related to the prevalence of short spells of unemployment—has reached its lowest level since the Bureau of Labor Statistics (BLS) started the series in 1958. To the authors, all this evidence suggests that the key to understanding why unemployment is lower now than at the peak of previous business cycles lies in discovering those factors that have caused the decline in short-term joblessness.

The present expansion has been as notable for its low inflation rates as for its low unemployment, and even more notable for the combination of

the two simultaneously. By any broad measure, price inflation in 1998 reached its lowest level in decades. Katz and Krueger turn to conventional accelerationist Phillips curve equations to examine whether these developments signal a change in the economy's historical behavior and to find clues about the nature of any such change. For both aggregate wage and price Phillips curves fit to years starting in the early or mid-1970s, they find clear evidence of a downward shift in inflation at a given rate of unemployment in the last decade: a dummy variable for the years after 1988 is significant in all their regressions. Their analyses indicate that the downward shift is of at least 1.5 percentage points in price equations and about 1.0 percentage point in wage equations. Their regressions in which the shift is interacted with unemployment also show that the response of inflation to unemployment has declined during the past decade. However, when the estimation period is extended to begin in 1962, a decade before the first oil supply shock and the slowdown in productivity growth, the evidence for a shift in Phillips curves after 1988 is much weaker. This suggests that the recent period may have more in common with the years before the 1970s than with the intervening period. Robert Gordon and others have attributed roughly 0.2 percentage point of the decline in estimated NAIRUs to measurement changes in the consumer price index. However, Katz and Krueger observe that recent changes in statistical methods used by the BLS cut both ways in interpreting developments in this period. They cite studies showing that measurement changes in the Current Population Survey have raised the aggregate unemployment rate by an amount similar to the decline Gordon calculated.

Trends in compensation of different groups in the labor market have diverged substantially since the 1970s. Workers in the lowest decile of the wage distribution fared the worst during the 1980s: their real wages fell by 16 percent, in a decade when the real minimum wage fell by 31 percent. Real wages at the 90th percentile rose 4 percent during the 1980s and have risen a further 5 percent thus far in the 1990s. Grouping workers by educational attainment gives similar results, with average wages growing fastest for workers with a college education. In the last couple of years, however, as unemployment has continued to fall and the minimum wage has been increased, this divergence has narrowed. Real wages have risen across the wage distribution, and lower-wage workers have received proportionally the largest real wage gains. Using disaggregated Phillips curves, the authors find that lower-wage workers benefit disproportionately

from a tight overall labor market because their wage growth is especially responsive to overall unemployment. In addition, they benefit because their own unemployment falls more than does aggregate unemployment.

For further insights into the recent good performance of the economy, Katz and Krueger turn to the relation between job vacancies and unemployment known as the Beveridge curve. A Beveridge curve traces out the locus of unemployment and vacancy rates that would be experienced with given structural and behavioral characteristics in the labor market as the overall level of economic activity varies. Wage pressures are presumed to vary with movements along this curve. Labor market changes that cause an inward shift in the Beveridge curve, so that a given unemployment rate is accompanied by a lower vacancy rate, would indicate that labor markets are less tight at any unemployment rate than they were before the shift. Favorable inward shifts would be associated with improved efficiency in matching jobs and workers, increased search effort by the unemployed, demographic shifts that reduce the share of young workers (who experience relatively high job turnover), and possibly reductions in the pace of job reallocation. The authors note that structural or behavior changes in the response of wages and prices to the tightness of labor markets—wage restraint driven by dwindling union membership, increased worker insecurity, or increased international competition—would not be expected to shift the Beveridge curve.

To investigate how the Beveridge curve has shifted over the years, Katz and Krueger proxy vacancy rates by the Conference Board's help wanted index as adjusted by Katharine Abraham for trends in help wanted ads relative to directly measured vacancies. A scatter diagram of vacancy-unemployment points based on these data suggests a marked outward shift in the Beveridge curve in the 1970s and an even larger inward shift since the mid-1980s. The authors note that the recent shift is consistent with the declining relative importance in the work force of high-turnover young workers, with less intense job reallocation, and with more efficient job matching through the growth of the temporary help industry. They observe that the advent and growing importance of Internet job listings are likely to improve matching, but also likely to lower the help wanted index relative to true vacancies.

The authors explore the importance of changing demographics more fully by examining their effect on actual unemployment rates. The importance of changing demographics stems mainly from the large differences

in unemployment rates across age groups and the dramatic changes in the age composition of the work force as the baby-boomers have passed through it. The proportion of young workers in the work force—teenagers aged 16–19 and young adults aged 20–24—rose from 16.6 percent in 1960 to 24.5 percent in 1978 and then fell back to 15.8 percent in 1997. Over the entire period since 1960, the average unemployment rate was 17 percent for teenagers, 10 percent for young adults, and 4 percent for workers aged 35–54. The authors note that the much higher unemployment rates of young workers reflect greater employment instability, not longer spells of unemployment, so that the aging of the work force helps explain the relative decline in short spells of unemployment in the present expansion.

Katz and Krueger show the effect of changing demographics on unemployment by calculating what the unemployment rate would have been if the age composition of the work force had not changed over the last several decades. By this calculation, demographic changes reduced unemployment by 0.6 to 0.7 percentage point between 1979 and raised it a similar amount between 1960 and 1979. However, between 1989 and the present, demographic changes account for only 0.2 percentage point of the 0.8-percentage-point change actually experienced. While acknowledging that there is considerable disagreement over the magnitude of the decline in the NAIRU, the authors note that these results suggest that demographics may account for about a third of its decline during this decade. The authors also note that Robert Shimer finds larger demographic effects than their own, and larger impacts on the NAIRU, using a model that assumes that unemployment of young workers rises when their relative numbers rise, as it actually did, but that prime-age workers' unemployment is unaffected. Katz and Krueger do not adjust unemployment for the changing educational attainment of the work force, arguing that the primary expected effect of increased education is on productivity.

Katz and Krueger identify the rising proportion of working-age men who are incarcerated as an additional demographic change that has had a noticeable effect on unemployment. The proportion of the adult population that is in prison or jail rose from 2 in 1,000 in 1970 to 9 in 1,000 in 1998. Roughly 90 percent of the incarcerated are men, and their numbers are equivalent to 2.3 percent of the male work force. Because incarcerated individuals are not counted in the work force, and because a large fraction were unemployed before their arrest, their growing number has a small but noticeable downward effect on the unemployment rate. The

authors calculate that the increase between 1985 and 1998 in the incarcerated population has reduced the total unemployment rate by between 0.1 and 0.3 percentage point, depending on which potential participation rate one assumes for these individuals. The effect on unemployment rates for subgroups of less educated and minority men is substantially larger. And the authors warn that their calculation of effects on unemployment does not address the possible lasting negative effects of incarceration on the labor market prospects of these persons.

The authors' analysis of other developments in the labor market leaves them skeptical about how much government reemployment services have contributed to the improvement in labor markets. The Worker Profile and Reemployment Services (WPRS) program, which provides employment assistance to unemployed workers identified as likely to have difficulty finding a job, was phased in by all states in the mid-1990s. Although earlier studies of job assistance programs found them cost-effective to the government, Katz and Krueger's analysis suggests that these studies may have been biased, because they traced the effects over years when the economy was expanding. Their own analysis, which uses state-level data for 1994–98 and controls for year and state effects, concludes that the aggregate effects of the program on employment are small.

Katz and Krueger find that substantially larger effects on unemployment are likely from the growth of temporary help services, whose share of total employment, although still small, has doubled from 1.1 percent to 2.2 percent since 1989. Temporary help accounts for 8.2 percent of employment growth in the current expansion. The authors cite recent analysis by David Autor indicating that temporary help agencies play an important role in screening and training employees. From this and other evidence, they infer that such agencies may have reached a discernible level of importance to the overall labor market, helping to lower hiring costs, reduce labor market bottlenecks, improve employment matching, and put downward pressure on wage setting. They support this judgment with "a preliminary and highly speculative" analysis of cross-state experience. Using data on the proportion of temporary help in total employment by state, and controlling for state and year fixed effects, they find significant evidence that a greater presence of temporary help agencies in a state held down the growth of composition-adjusted wages there. They also note that the growing importance of temporary help has coincided with the inward shift of the Beveridge curve discussed earlier.

Katz and Krueger look for evidence on the hypothesis that greater worker insecurity has contributed to wage stability and permitted lower unemployment. Declining union strength is often invoked in support of this view, because unions brought security and bargaining power to workers, both in unionized firms and elsewhere through the threat of unionization. The authors report on the sharp decline in the importance of unions in the workplace, where only 10 percent of private sector workers are now unionized, and on the recent record lows in strike activities, and they judge that these developments could be one factor in current wage moderation. When they try to evaluate the worker insecurity hypothesis directly, however, they find little evidence for it today. There has been a slight decline in job tenure and a slight increase in displacement rates in this decade. However, workers' self-reported job insecurity, which rose slightly in the mid-1990s, is now back at past levels for business cycle peaks. And surveys of financial security show families at their most secure since 1965.

Looking ahead, the authors are optimistic that the main factors that have reduced unemployment and contributed to price stability will persist well into the next decade. But they believe further progress in reducing unemployment will require new approaches to improving the employment prospects of less skilled and disadvantaged workers, many of whom currently suffer long spells of unemployment even in today's buoyant labor market. Katz and Krueger also warn that the current good performance of the economy may in part be due to favorable shocks, such as the strong dollar and weak oil prices, that will not persist and may even be reversed in coming years.

IN APRIL 1997, almost on the eve of the Asian currency crises, the Interim Committee of the International Monetary Fund (IMF) proposed amending the Fund's Articles of Agreement to make currency convertibility for capital transactions a fundamental objective. In the wake of the crisis, many analysts assigned at least part of the blame to excessive capital liberalization, and some countries responded to the crisis by reimposing controls on international capital movements or tightening existing ones. Policymakers and economists worldwide are analyzing the events of the past few years for the lessons they provide for individual countries and for the international financial system. In the second paper of this issue, Richard Cooper provides an informed history of global experience with

regulation of capital movements and analyzes the advantages and drawbacks of alternative regimes for today's economies.

Cooper stresses the many forms and degrees of intensity that restrictions on capital movements can take. *Capital account convertibility* means that residents and nonresidents of a country can exchange its currency for foreign currency when buying or selling assets. But convertibility does not rule out a range of *capital restrictions,* such as multiple exchange rates or other actions designed to influence capital transactions through price penalties or other means. *Capital controls* can refer just to those measures that directly restrict the quantity of foreign exchange made available for capital transactions, although in common usage it often describes any restriction with a substantial effect.

What we would today call capital controls have undoubtedly existed for a very long time. Cooper provides a rich and detailed history of controls in their modern form. He traces their origins to World War I and, in peacetime, to the financial crisis of 1931, when first Nazi Germany and then other nations in Europe and Latin America adopted exchange controls in order to husband declining reserves and avoid depreciation of their currencies. From that beginning, capital controls soon became the rule rather than the exception and remained so for a very long time. They became firmly entrenched when they were maintained by most nations during World War II and through the subsequent recovery. During the postwar reconstruction, liberalization of the global economic system proceeded along the lines laid out at Bretton Woods in 1944 and implemented through the newly created IMF and World Bank. Reforms concentrated on trade and current accounts, so that well into the 1960s the only advanced industrial nations operating without capital controls were Canada, Switzerland, and the United States. Germany gave up controls late in that decade, Britain did so a decade later, and France and Italy only completely freed capital movements a decade after that. Although nations in most other regions have dropped or lessened capital restrictions over the postwar period just as the nations of Europe did, Latin America has gone from being the most open region to capital flows in 1960 to the most closed today.

In response to the general freeing of economies from capital restrictions, the volume of capital movements across borders has grown dramatically. Cooper reports that, between the early 1970s and the early 1990s, annual net flows of foreign direct investment increased tenfold into indus-

trial countries and twentyfold into developing countries. Portfolio investment grew even more rapidly. During the same period the value of world merchandise exports rose by only a factor of seven. As the recent crises have reminded us, this great expansion of capital flows that has accompanied the lifting of restrictions can both provide benefits and increase costs and risks. And the current debate about the causes of the crisis and where to go from here requires an understanding of both.

Most economists presume that freedom of capital movements is highly desirable for promoting the efficient international allocation of resources. They therefore tend to disfavor any form of restrictions on those flows. Cooper does not accept this easy verdict, but instead provides a critical discussion of the arguments for and against capital mobility given the imperfect development of many countries' financial sectors and the realities of world capital markets.

Cooper provides a long list of arguments that have been advanced for and against liberalization of capital movements. Arguments for them include the following: A free society should permit its people to place their assets wherever they choose. Capital movements can optimize the use of the world's resources. Restrictions on capital movements are bound to be ineffective in our modern world and thus will invite corruption and disrespect for law if attempted. And free capital movements discipline governments. Arguments for restricting capital flows include the following: Under fixed exchange rates, free capital movements limit the usefulness of countercyclical monetary policy. Capital restrictions may be needed to prevent currency flight from causing financial instability. They may be needed to permit countries to impose the kinds of taxes they prefer. And governments may find restrictions useful if they care about shaping the industrial structure of their economies or if they want some control over the value of their currency.

Cooper rejects arguments that deny, a priori, a role for government and accepts that governments' objectives for the economy are their legitimate concern and that capital restrictions cannot be ruled out as a way of achieving them. He thus turns his attention to the remaining, economic arguments against restrictions: Is the free movement of capital needed to optimize the allocation of resources? Does the free movement of capital discipline macroeconomic policies? And can capital restrictions be effective in today's world?

Cooper discusses three important circumstances in which free capital movements would not improve the allocation of capital. One is when trade is not fully open. If a developing country with abundant labor protects its capital-intensive industries, such as steel and automobiles, additional foreign investment can misallocate capital and even reduce national income. Another arises from capital taxation. If capital income is not taxed uniformly across countries, open capital markets can misallocate investment, directing capital to where it pays the least tax rather than to where it will be put to best use, and can encourage tax evasion. A third source of misallocation derives from the fact that not all capital flows are driven by well-informed judgments about where the returns to capital are highest. Some are governed by herdlike behavior on the part of investors and speculators. The presence of such an element in capital flows distorts allocation and can even destabilize exchange rates and financial systems, as happened in 1997. A well-established financial system, with prudential rules and effective oversight of financial institutions, minimizes the risks of destabilization. However, Cooper notes paradoxically that, if they are not coordinated internationally, the prudential rules that reduce risk for a country can also drive capital away from it to competitors with laxer rules.

Cooper's discussion of these issues does not create a presumption that the efficient allocation of capital requires controls. Indeed, he recognizes that controls on capital movements can themselves distort allocation, and he cites South Korea as an economy in which the inability to export capital was one factor contributing to overinvestment in low-return domestic industries. However, he does emphasize that the case for free capital flows on allocational grounds must be established rather than assumed, and the case will not be the same for all countries or all times.

Whether openness to capital flows provides a useful discipline on domestic policymakers is a question of political economy on which relevant evidence is not easy to come by. Cooper observes that the architects of the single currency for Europe adopted fiscal rules because they did not want to rely on markets to discipline governments. He also cites work by Woochan Kim that shows that capital openness is associated with smaller fiscal deficits or larger surpluses. But he adds that such an effect may not always be desirable: many circumstances call not for larger but for smaller surpluses or even deficits.

Turning to the effectiveness of controls, Cooper provides both an analysis based on exchange rate premiums and an extensive discussion of coun-

try experiences with a variety of restrictions on capital flows. A black or gray market will often emerge in a currency whose markets are controlled, and a premium in excess of transactions costs in this market indicates that the controls are effective. Cooper finds that, in 1988, the currencies of ninety-one countries traded in black or gray markets at premiums of more than 5 percent over official exchange rates. He compares these premiums with an index created by Dennis Quinn that attempts to scale the degree of capital restrictions by country, both in 1973 and in 1988. He finds some negative correlation, with greater liberality associated with lower premiums, although the relation is driven mainly by a relatively few observations.

Cooper's discussion of individual cases both illustrates the variety of restrictions that have been employed and lends further evidence that restrictions have been effective. As his historical discussion makes clear, for an extended period starting in the 1930s controls were widespread even among the advanced nations, and their effectiveness was apparent. He therefore turns to more recent experiences for evidence on how controls have fared in modern times. Among several countries that maintained segregated markets for overseas portfolio investment, including Belgium, Britain, South Africa, and Sweden, he finds significant and persistent exchange rate premiums in most, suggesting that segregation was effective over long periods. He reports that the "exchange equalization tax" imposed on short-term capital flows by the United States from 1963 to 1969 is believed to have pushed outflows toward longer maturities but to have had no discernible effect on total flows. Effects of this slight attempt at restriction were themselves slight. France, during the 1980s when it still maintained capital controls, experienced periods lasting several months during which short-term interest rates were substantially higher in the eurofranc market than in Paris, indicating substantial effectiveness over those intervals. Cooper also discusses the use of capital restrictions by Korea, Malaysia, and Thailand during the latest crisis but concludes it is too early to assess their usefulness.

Cooper discusses at some length Chile's widely cited policy of, in effect, taxing short-term capital flows. The policy is implemented by requiring non-interest-bearing reserves to be held against short-term bank liabilities to foreigners. Since the policy was introduced in 1991, Chile has varied the level of the required reserve between 30 percent and zero, with the dual objectives of holding down inflation and maintaining a competi-

tive real exchange rate. The authorities have tightened the initial bank regulations in response to attempts at evasion and have added restrictions to discourage quick round trips on direct and portfolio investments from abroad. How effective the controls have been in achieving their ultimate objectives is controversial. Cooper reports that the Chilean peso appreciated by 30 percent while the restrictions were in effect and that net capital inflows grew through most of the decade. However, it does appear that the restrictions lengthened the maturity of Chilean foreign liabilities, which presumably helped protect Chile from financial crises that emerged elsewhere and kept short-term interest rates well above those prevailing in world markets.

Having established that capital restrictions can be useful under many circumstances, Cooper concludes with a look at the choices confronting developing countries. He argues that small, open economies are vulnerable to speculative capital flows that can drastically change the exchange rate and the price level, distorting trade flows and destabilizing the economy. In Cooper's view this makes free capital movements and floating exchange rates incompatible for all countries except those that enjoy well-developed financial markets. He argues further that conventional fixed exchange rate regimes are also vulnerable and so also incompatible with free capital movements for many countries. He therefore concludes that unless a country is prepared to tie its currency irrevocably to some leading foreign currency, it may need to maintain some restrictions on capital movements.

THE CURRENCY CRISES that erupted in several developing countries beginning in the summer of 1997 reopened old questions about the costs and benefits of capital flows. The crises' rapid spread from Thailand to other developing countries exposed the vulnerability of these economies to massive capital outflows and exchange rate instability. This potential for instability and the costs it brings have been the subject of intense study since the crises began. In the first of three reports in this issue, Barry Bosworth and Susan Collins examine the other side of the ledger: what impact capital flows have on developing economies as measured by their effects on consumption, investment, and the current account.

Both economists and policymakers have long viewed gaining access to international capital markets as an important step in economic development. Bosworth and Collins review the ways in which developing economies stand to benefit from such access. These capital-poor

economies can profitably use foreign funds to augment domestic saving and increase domestic investment. They may also benefit from the transfer of managerial and technical know-how that accompanies foreign direct investment (FDI) and from the development of domestic financial markets that foreign bank lending and portfolio investment may promote. Some observers even argue that open capital markets discipline domestic policymaking, through the implied threat of capital flight. So widely accepted is the presumptive case for such benefits that, even in the aftermath of the recent crises, most proposals for reform have focused not on reining in capital flows but on reducing the risks of financial instability so that flows can continue unabated. Yet as the authors note, there has been little empirical evaluation of the direct economic consequences of capital inflows, and they set out to provide some.

Bosworth and Collins use data from countries' balance of payments accounts, gathered mainly by the International Monetary Fund (IMF), and from their national income and product accounts. They distinguish three types of capital flows—FDI, portfolio investment, and other financial flows (primarily bank loans)—and provide a consistent framework for relating capital inflows to other components of the balance of payments, including the current account, capital outflows, and reserve accumulation. They assemble panel data for a near-exhaustive list of fifty-eight developing economies for each of the years from 1978 through 1995, the most recent year for which complete data are available. Although this limits their analysis to the years before the crest in the surge of lending that preceded the 1997–98 crises, the data display substantial variation over time. Hong Kong, Panama, and Singapore are excluded because their role as financial centers makes it impossible to measure their capital inflows properly. They also analyze a subset of eighteen emerging market economies with relatively advanced financial systems that accounted for 90 percent of total financial flows to developing countries during 1990–95.

One of the presumptive benefits of capital inflows to developing, capital-scarce economies is that they finance inflows of the real resources needed to increase investment, and thereby growth, and to smooth fluctuations in consumption when adverse shocks occur. These resource inflows would then show up in the balance of payments as a current account deficit. The authors find, however, that capital inflows have not simply financed larger current account deficits, as simple models might have assumed. Historically, only about half of the cumulative inflows have been

associated with increased current account deficits, and that proportion declined during the first half of the 1990s. Reserve assets have risen by about one-third the amount of cumulative inflows, and capital outflows have offset about another third, although these outflows have been concentrated around crisis periods and among a few countries that have permitted residents to transfer funds freely. Other balance of payments categories such as exceptional financing by authorities in connection with debt crises, and errors and omissions, which are often associated with capital flight, are large in some periods. Over time, the composition of capital inflows has shifted toward FDI and portfolio investment and away from loans, which was the dominant form of inflow at the start of the period. Interestingly, there is little evidence of complementarity among the three types of capital inflows: there is little correlation among them over time or across countries. For example, there is no presumption that countries that received large amounts of loans also received large amounts of FDI or portfolio capital.

Bosworth and Collins review the lessons of theoretical models that analyze the effects of access to international capital markets. In a standard neoclassical model, improved access is likely to increase consumption but has ambiguous effects on saving. Consumption smoothing is the major benefit derived from access, not increased investment or more rapid long-term growth. But the authors note that the theoretical models miss some essential features of developing economies: the models assume that domestic capital markets are highly developed, equalizing borrowing and lending rates, and they ignore the preference of foreigners to lend for investment rather than consumption. Finding little guidance for their empirical work from these and other theoretical models, the authors take a less structured approach, building on existing empirical research on the determinants of investment and saving in developing economies. They treat capital inflows, output growth, and changes in the terms of trade as the main determinants of domestic investment, saving, and, by subtraction, the current account; all but the terms of trade are expressed as percentages of GDP in their analyses.

In contrast to some earlier studies, Bosworth and Collins control for country-specific effects. Their estimates thus reflect the variations within countries over time and avoid the bias that would arise if unobserved country-specific effects are correlated with the variables they are analyzing. The authors also recognize that capital inflows are endogenous: they

may depend in part on the strength of the domestic economy and of investment demand. To avoid the potential bias from this endogeneity, the authors use instrumental variables to isolate those flows that are related to exogenous shifts in the supply of capital. They experiment with U.S. interest rates and deviations of real U.S. GDP from trend as instruments, but in the end they prefer to use total gross inflows to all developing economies as an instrument. They believe this global total reflects the supply of capital from the developed world and is largely independent of any individual developing country's economic condition. In their estimation it dominates the other measures of supply shifts. Other instruments used are specific to each country; these include the IMF's indicator of the presence or absence of controls on financial flows, changes in the terms of trade, the prior year's capital inflows, and the prior year's change in GDP.

The authors' econometric results provide several interesting insights into the effects of capital flows on developing economies. For both the full sample of countries and the emerging markets subsample, domestic investment rises by about half of total inflows. Domestic saving declines, but by much less, implying that the current account moves toward deficit by about 69 percent of inflows (53 percent for the emerging market economies). These changes in the current account, again, measure the net real resource transfer that accompanies the capital inflows.

The authors find substantially different effects for each type of capital flow. FDI has the strongest relationship with domestic investment of the three types. Domestic investment rises by 90 percent of FDI in the emerging market economies and by 81 percent of FDI in the full sample. Surprisingly, FDI raises domestic saving by almost as much as it raises investment, so that the effect on the current account is negligible. Portfolio investment has only small and insignificant effects on either saving or investment. The effect of foreign loans is intermediate: investment rises by 44 percent of loans in the emerging market economies and by 50 percent of loans in the full sample, and domestic saving declines modestly. As a consequence, loans move current accounts substantially toward deficit.

The authors' main findings are robust over some alternative estimations, indicating that a large portion of capital flows to a country have gone into domestic investment rather than consumption. Within total flows, FDI has had the most clearly beneficial effects on investment, and portfolio capital has had none. This clearly supports the long-held view that FDI is different. The effects on saving and on the current account are less certain

and appear to depend on the type of capital flow. Since FDI does not require full capital convertibility, Bosworth and Collins see their results as supporting an orderly sequencing of capital account liberalization in which domestic financial markets and regulatory oversight are strengthened before external convertibility is complete.

THE NATIONAL SAVING rate plays a prominent role in explanations of long-term growth and productivity. During the 1980s and early 1990s, economists and policymakers placed part of the blame for the lackluster performance of U.S. productivity on the low rate of national saving, which in turn was largely blamed on government deficits. But part of the explanation of the low national saving rate was a U.S. personal saving rate that was low by both international and U.S. historical standards. The tax changes of 1993 and the sustained expansion of this decade have resulted in a dramatic turnaround in government saving, lifting the national saving rate above its 1980s levels. However, this improvement masks a continuing decline in personal (household) saving as measured by the national income and product accounts (NIPAs). The personal saving rate fell from 5.7 percent of GDP in the 1970s to 3.5 percent in the early 1990s, and it has actually dipped below zero since the fall of 1998. Although of no special economic significance in itself, the crossing of aggregate personal saving into negative territory has rekindled concern about the adequacy of households' provision for retirement and has underlined the current, unprecedented dependence of national saving on government. For some observers it has raised the specter of severe recession or worse should households return to more prudent ways. In the second report in this issue, William Gale and John Sabelhaus take a detailed look at the household saving rate, showing how the use of different concepts of saving alters the picture of household behavior and enhances our understanding of the NIPA saving rate.

The authors begin by discussing the conceptual underpinnings of NIPA saving and various alternative measures. Saving is always defined as the difference between "income" and "consumption," but each of these terms can be defined in very different ways. Historically, economists have used two major definitions of income, Hicksian and Fisherian. For an economy as a whole, Hicksian income is defined as the amount of production in the current period that can be consumed while leaving the capital stock intact. The difference between Hicksian income and consumption corresponds to capital accumulation and is appropriate for tracking the amount

of future production made possible by capital deepening. At the level of sectors or of households, the corresponding definition of saving is income from current production used to purchase assets or reduce debt, thereby increasing net worth. The Hicksian definition excludes from income and saving any revaluations of the capital stock at the aggregate level and any capital gains or losses at the individual or sectoral level.

Fisherian income, on the other hand, is the amount of output that can be consumed in the current period while allowing as much consumption in each successive period—it is the consumption annuity provided by command over resources. Saving thus defined excludes capital gains unless the gain reflects an increase in consumption possibilities. For an economy, revaluation of assets does not reflect such an increase, except in the case of claims on foreigners. However, capital gains that reflect revisions in expected future productivity do affect Fisherian income and, to the extent this income is not consumed, Fisherian saving. At the household level, capital gains that reflect revaluations of claims on others do count as income, just as national claims on foreigners do at the aggregate level. Fisherian income is thus the natural measure for explaining individual consumption behavior.

The authors note that which definition of saving is most appropriate depends on the question being asked, and that measuring saving by either definition poses problems. For example, to understand how well households are preparing for retirement, it would be logical to focus on personal wealth measures, including claims on social security and medicare benefits. In contrast, when examining government policies that encourage saving for retirement, it would be logical to include the effects on government saving as well as on private saving, since a policy that raised private saving but reduced government saving by more would reduce rather than add to capital accumulation. Another issue is how broad a definition of consumption or of capital to use. Capital can be defined narrowly as the physical stock of plant and equipment used in production, or it can include tangible and intangible investments in technology and investments in human, public, natural, and environmental capital. The dividing line between consumption and investment is often imprecise, as in the case of education, and the attribution of income and expenditure among households, firms, and governments is somewhat arbitrary.

Gale and Sabelhaus turn first to a discussion of personal, or household, income and saving as measured in the NIPAs. Households are defined

quite broadly in the NIPAs: the data include individuals, families, pension funds, life insurance, trust funds, not-for-profit organizations, and unincorporated businesses. The NIPA measures of income, consumption, and saving are based on the Hicksian concept. Personal saving is meant to represent the portion of household claims on current production not consumed by them and therefore available for capital formation. Accordingly, it does not include accrued or realized capital gains (although it is reduced by the taxes on such gains).

The authors discuss at some length several other important features of the NIPA measure of personal saving: the treatment of pensions and social security, the treatment of durable goods and housing, and the treatment of nominal interest receipts and payments. As would be expected given the conceptual framework of the NIPAs, personal saving includes all contributions to, and interest and dividends on, private pensions and 401(k) plans. Individual retirement accounts and Keogh plans are treated similarly. Employer contributions to pension plans, whether they are defined benefit or defined contribution plans, are also counted as part of labor income and hence are part of personal saving. Consistent with this treatment, payments of private pension benefits are not included as income. However, the treatment of corporate contributions does not accurately measure the accrual of benefits by individuals enrolled in defined benefit plans. In particular, the time pattern of benefit accruals may be quite different from that of contributions by corporations and investment earnings, and this can create an important difference between a household's view of its wealth accumulation and recorded NIPA saving. However, the NIPAs do appropriately measure the net saving of households and corporations taken together, since the accrual of benefits by households is offset by the accrual of a liability to corporations until they actually make the pension contribution.

The NIPAs' treatment of public pension and insurance funds runs exactly counter to their treatment of private funds. Contributions of federal, state, and local governments to such funds are not attributed to households and are therefore not a part of personal saving. Similarly, social security contributions are counted not in personal saving, but rather as personal tax and nontax payments. In these cases, rather than attempt to capture the accrual of claims by households, the NIPAs count benefit payments as personal income at the time they are made.

Three other issues the authors raise about NIPA conventions are less complicated. They question why expenditures on consumer durables are treated as consumption even though, like owner-occupied housing, consumer durables are physical assets delivering a stream of consumption services over their lifetime. They note the inflation illusion in the NIPAs' use of nominal rather than real interest receipts and payments in measuring income and outlays. They also note that personal saving ignores the implicit tax liabilities in pensions: a portion of payments into tax-sheltered plans represents deferred government taxes rather than an increase in household net worth.

Some of these same issues arise in the NIPAs' treatment of corporations. The authors observe that the measure of corporate saving, like that of personal saving, does not adjust interest flows for inflation. The line between personal and corporate saving is unclear and somewhat arbitrary and creates anomalies in the allocation of income between households and corporations like those discussed above in connection with defined benefits. For example, corporate dividend payments and corporate share repurchases both shift funds from the corporate to the household sector, but only the former are regarded as household income. Until recently, mutual fund distributions of capital gains were allocated to personal income; they are now classified as corporate income. As a separate matter, the authors note that, wherever they are allocated, these capital gains are included in private (household and corporate) income and saving, which is inconsistent with the underlying principle of the NIPAs that income is measured from current production.

How different would the level, composition, and trend of saving appear if the NIPA data were adjusted to take all these factors into account? Using data in the flow of funds accounts (FFAs), the authors calculate how net investment would be increased if consumer durables were counted as investment, how each sector's saving would be affected by adjusting nominal interest rates for inflation, how private saving would be increased if government pensions were treated like private pensions, and how contributions to tax-sheltered pensions would be changed by accounting for the accrual of implicit taxes. The adjusted data show both national investment and national saving about 2 percentage points higher than indicated by the NIPAs, but with similar general trends. However, taken together the adjustments significantly alter the sectoral composition of the saving

decline. Most notably, adjusted personal and private saving both have fallen less in recent years than have the unadjusted measures. Personal saving has fallen by only 1 percent of GDP in the 1990s by the adjusted measure, but by more than 3 percent in the official statistics. Similarly, personal saving in the 1990s has fallen by only 2 percent of GDP relative to its levels in the 1970s and 1980s, rather than by almost 5 percent in the NIPA data. Crediting households for the benefits they accumulate in government retirement accounts and trust funds adds over 1.5 percent of GDP to personal saving in recent years, but adjusting for accrual of taxes leads to an offsetting 1 percent decline. In contrast to these relatively stable adjustments, the reallocation of saving between creditors (households and foreigners) and debtors (government and corporations) that results from using real rather than nominal interest rates varies substantially with changes in inflation, and much of the recorded decline in the personal saving rate can be attributed to the decline in inflation. From the 1970s to 1995 the nominal personal saving rate as measured by the NIPAs fell by 3 percent of GDP. But adjusting interest flows for inflation eliminates five-sixths of that decline and eliminates roughly 40 percent of the decline recorded between 1995 and 1998.

The FFA data on saving, compiled by the Federal Reserve, are intended to represent the same concept of personal saving as the NIPA measure, except that accumulations in government pensions and investment in consumer durables are attributed to households. However, the FFAs are assembled from different data; in particular, they use estimates of asset values at discrete points in time and the active acquisition and disposition of assets and liabilities in measuring saving. The discrepancy between the NIPA and FFA measures of saving due to these statistical differences per se is quite small, generally less than 1 percent of income.

Gale and Sabelhaus use the FFA data to examine the composition of private saving. They compute saving as a fraction of an appropriately expanded measure of private disposable income, including corporate retained earnings and net investment in government pensions. On this basis the saving rate looks higher but shows the same general downward movement as the NIPA measure. The authors identify several interesting features of this decline. Acquisitions of financial assets, net of tax accruals implicit in pension saving, fell from about 13 percent of GDP in the 1980s to 6 percent in 1996–98, with almost all the decline occurring in saving that does not qualify for tax deferral. The rise in private borrowing over the

course of the 1990s by itself could account for more than the entire decline in private saving, but on average the decade looks much like previous periods. Similarly, although borrowing typically exceeded investment in durables and housing during the 1990s, this merely follows a historical pattern.

Some of the adjustments to private saving also affect calculations of government saving. Not surprisingly, the adjustment for tax accruals has a significant impact on the time path of the federal surplus. In recent years tax liabilities have accrued annually at a rate of about 4 percent of GDP; accrued liabilities on pensions and individual retirement accounts alone have risen by $2 trillion since 1980, an amount equal to about half the outstanding federal debt.

The spectacular runup in U.S. stock markets in recent years has heightened awareness of the significant difference between measures of saving based on current production, like the NIPAs and the FFAs, and measures of changes in net worth that include capital gains. Using information in the FFAs, the authors find that capital gains have dominated measured saving as a source of wealth change during most of the past forty years. Not surprisingly, capital gains since 1995 are large relative to earlier years, accounting for over 80 percent of gains in household net worth and even more when the decline in inflation is taken into consideration. The composition of gains has also changed. In earlier periods tangible capital accounted for almost half of the gains, whereas in the 1990s financial assets have accounted for almost all of them. Capital gains on pension assets alone have been about 10 percent of income over the last four years. The rate of growth in household net worth, even after accounting for inflation and tax accruals, has been extraordinary in the second half of the 1990s; the increases average over 25 percent of income, even when income is expanded to include the gains themselves. On a comparable basis, the household saving rate was 12 percent in the 1970s and 18 percent in the 1980s.

Assuming this newfound financial wealth of households is not ephemeral, it represents a significant improvement in their command over resources and makes it easy to rationalize the currently low level of household saving. But it is unlikely, in fact, that all this wealth could be consumed by the generations that have acquired it. The authors note that a large part of the gains in wealth reflects a reduction in the risk premium required on stocks—a revaluation that does not expand the nation's con-

sumption opportunities. By contrast with this assessment, some have optimistically suggested that recent capital gains reflect the market's correct assessment of future improvements in technology and productivity, and hence in the nation's consumption possibilities. But whatever the prospects for some new firms may be, it is hard to believe this argument explains much of the rise in the overall market.

THE BOOMING U.S. economy is today virtually the only bright spot in a world economy beset by subpar growth or outright recession. Although the emerging economies of the Pacific Basin appear to have bottomed out of their crisis, much of Western Europe is moving ahead only slowly, and many Latin American economies appear vulnerable to renewed decline. In Japan, where the general price level has actually dropped in recent years and where producer prices fell by 5 percent during 1998, recovery is still uncertain, and monetary policy cannot lower real interest rates significantly with nominal rates already near zero. Some observers see excess global manufacturing capacity, and global slack in general, leading to a worldwide deflation that could derail even the U.S. economy. In the last report of this issue, Bradford DeLong examines whether there is reason to fear deflation in the United States and whether policymakers are equipped to deal with the problems created by deflation should it appear.

Public awareness of the possibility of deflation has increased dramatically in the past year: DeLong reports that the number of articles about deflation in major U.S. newspapers increased more than tenfold in the six months before the Brookings conference. Yet for most of the postwar period inflation, not deflation, has been the main concern. By the mid-1970s many observers had concluded that the U.S. economy had an inflationary bias. DeLong observes that some economists had already come to this view by the late 1930s: shortly after publication of Keynes's *General Theory*, Jacob Viner warned of such a bias in Keynesian policies aimed at full employment. In Viner's view, Keynesian policies were likely to result in a "constant race between the printing press and the business agents of the trade unions..." in order to maintain employment at its potential. DeLong goes on to describe how Finn Kydland and Edward Prescott developed and sharpened this idea of inflationary bias in the 1970s. In their simple model, central banks concerned with unemployment are tempted to take advantage of a short-run Phillips curve to boost employment, but in the end they are unsuccessful, as workers and managers with rational

expectations come to anticipate such actions from the central bank. The result is that equilibrium production and unemployment are unaffected, but inflation is higher than desirable. Whether because of such insights or because of the actual experience with inflation following the two oil price explosions of the 1970s, a common culture of central banking has emerged in many countries in which control of inflation is the paramount if not sole objective. Ironically, however, more or less simultaneously with this heightening of concern about inflationary bias in monetary policy, inflation was actually vanishing. DeLong raises the possibility that the apparent bias toward inflation in the 1960s and 1970s resulted not from any game-theoretic interaction between central bankers and the economy but rather from "painful misjudgments about the structure of the economy that were corrected after the 1970s."

The only living Americans who have actually experienced a significant deflation are those old enough to remember the Great Depression. The decline in prices during that period was indeed dramatic. From 1929 to 1933 the consumer price index fell 25 percent, and prices received by farmers fell by more than half. Neither consumer nor agricultural producer prices regained their 1929 levels until 1943. DeLong briefly reviews how economists' views of inflation and deflation changed during this period as well as the lessons about deflation they have drawn from that experience. He reports that most economists in the 1920s treated inflation and deflation as roughly symmetric "evils to be shunned." But he sees the Depression as shifting the balance of fears to deflation, with "a near consensus … that deflation was deeply dangerous and to be avoided at all costs." Although economists have differed about the root causes of the Depression, according to DeLong almost every analyst during and since the 1930s has "placed general deflation—and the chain of financial and real bankruptcies that it caused—at or near the heart of the worst macroeconomic disaster the world has ever seen." Before and during the Depression, Irving Fisher stressed the damage to leveraged companies and financial institutions from the increase in real indebtedness that deflation caused and from the fact that nominal interest rates cannot fall below zero. DeLong cites a number of economists who later emphasized the inflexibility produced by the zero floor and how deflation's disruption of financial markets had disastrous effects for production and employment. Milton Friedman and Anna Schwartz, for example, stressed the harm to banks' balance sheets from debtors' diminished ability to service loans and described how the

resulting financial sector bankruptcies and crises led to sharp rises in the ratios of reserves and currency to deposits. Peter Temin emphasized the deflation-driven deterioration in corporate balance sheets. Barry Eichengreen and Charles Kindleberger focused on the international transmission of deflation and its interaction with exchange rates.

All of these mechanisms share a crucial element, namely, the fact that financial contracts are written in nominal currency units. DeLong observes that economists lack satisfactory theories of why borrowers and lenders choose to contract in such an unstable unit of account as nominal dollars, without conditioning on macroeconomic events like deflation. Contract theory does rationalize debt contracts as a way to reduce principal-agent problems and to economize on lenders' monitoring and supervision of entrepreneurs. Failure of a firm to make interest and principal payments on time signals that the owners and managers are not performing well and that a change in management and ownership may be warranted. But debt contracts are specified in nominal terms, and because deflation has the same consequences for firms' debt-servicing ability as does poor managerial performance, it can trigger the same steps toward restructuring or liquidation by lenders. The fact that the defaults induced by deflation are systemwide, and that each firm's real condition is adversely affected by the default of others, amplifies the problem.

It seems evident that deflation played a major role in the Great Depression. But since that time the U.S. economy has changed dramatically. For one thing, farm incomes and prices are much less important to the broader economy today. For another, even with the decline in manufacturing employment and unions, labor markets appear much less likely to translate unemployment into absolute reductions in wage rates. And the government, with its rigid wages and salaries, its many fixed obligations (both nominal and real), and its immunity from financial bankruptcy, is a far larger player in the economy. But precisely because we have had no significant deflationary experience recently, DeLong points out, we have no reliable evidence on whether today's economy might succumb to a deflationary shock, turning it into a financial crisis and a severe economic downturn. He also notes that economies have more to fear than a decline in broad goods and services price indices alone—a sharp fall in asset prices could produce much the same result. For example, if securities and real estate holdings have been pledged as collateral for debt, a retreat in their price levels will have effects similar to that of falling prices for goods.

DeLong judges that the United States today is probably not vulnerable to a large-scale decline in real estate prices, but that the risk of a major stock market decline is more substantial. Moreover, he sees a deflation in broad goods and services prices as perhaps less unlikely than we hope.

His assessment of the risks leads DeLong to inquire whether the Federal Reserve could offset a significant deflationary shock. He reports empirical studies that show that the Fed has very limited ability to affect the price level over a one- or two-year horizon. Monetary policy has more rapid effects on output, but the zero floor on nominal interest rates could significantly limit its effectiveness in a deflation. If the Fed could reliably forecast the price level sufficiently far in advance, these lags in policy would not be a problem. But, DeLong argues, it cannot. He reports that the standard deviation of the price level two and a half years ahead is 6.6 percent, and that a simple statistical model that conditions future inflation on past inflation, unemployment, and nominal interest rates, and even on the identity of the chairman of the Federal Reserve, reduces that error only to slightly less than 4 percent. Hence, starting from today's already low inflation rate, DeLong sees a real chance, albeit a small one, of a shock that would put us well into deflationary territory.

On the other hand, DeLong enumerates several reasons for believing that a debt-deflation spiral set in motion by an unanticipated commodity price decline is not a serious threat. First, it may well take a bigger shock to induce a given level of deflation than to induce the same amount of inflation, and if so, estimates drawn from the postwar period probably overstate the risks. Second, a large part of the variance in postwar inflationary experience comes from the turbulent 1970s. The years between 1971 and 1983, although representing only about a quarter of the postwar period, account for 90 percent of the postwar variance in consumer prices, and the standard deviation of inflation since then is only one-third of that for the entire period. DeLong believes that the 1970s may well have been a unique episode and that the inflationary shocks experienced in that decade could almost never happen in reverse. He also believes that skill in conducting monetary policy in the United States has increased over the decades. However, nothing can be ruled out entirely, and he believes the experience in Japan and Europe in recent years sends a warning to policymakers to remain alert.