

Editors' Summary

THIS ISSUE of the *Brookings Papers on Economic Activity* contains papers and discussions presented at the fifty-first conference of the Brookings Panel on Economic Activity, which was held in Washington, D.C., on April 4 and 5, 1991. The first paper analyzes the impact of currency union on the economy of East Germany and presents a wage subsidy proposal for East German industry. The second models the convergence of per capita income and output across U.S. states and European regions. The third employs household survey evidence to study the decline in economywide private saving. The fourth paper compares the U.S. banking system with the systems in Germany, Japan, and the United Kingdom. A shorter report looks at the connection between Japanese *keiretsu* and foreign trade.

THE CRUMBLING of the Soviet bloc in Eastern Europe has led to historic change in the countries of that region. In most cases, independence from the Soviet Union has been accompanied by both political reform and movement toward market-oriented economic systems. Nowhere did prospects for success appear brighter than in East Germany, with its educated and skilled work force and where reunification with West Germany promised a relatively easy infusion of capital, technology, and management know-how. Economic union, when it came in mid-1990, did make dramatic changes in the economic environment of East Germany. It lifted barriers to trade, labor, and capital movements, adapted the tax and transfer of the West to the East, and exchanged East German currency on a one-for-one basis with the West German mark. Yet, economic union has thus far precipitated a depression rather than a new German miracle. The reasons for this debacle, together with a plan for correcting the worst problems, are the subject of the first paper in this volume by George A. Akerlof, Andrew K. Rose, Janet L. Yellen, and Helga Hessenius.

As background to their analysis, the authors first document the extent of the economic decline and the price and wage developments that have accompanied it. Within a few months of union, industrial output in East Germany had fallen to half its 1989 average and employment in all major industrial sectors had declined. By this past winter, 30 percent of the Eastern work force was unemployed or working only part time, and job prospects appeared to be worsening. The authors blame the collapse in output and employment on both changes in demand and changes in supply. On the demand side, once goods from the West became widely available and East Germans had deutsche mark with which to buy them, their demand for Eastern goods dried up. This lack of demand for Eastern goods, in the face of the availability of goods from the West, is important and would have depressed Eastern output even in the absence of supply-side problems. Yet one could imagine that with smoothly functioning markets the demand-side problem would have gone away as Eastern industries were forced to adjust the quality, style, and price of their products so they could start to compete with those from the West.

These adjustments might have been well underway by now if not for the supply-side problems Akerlof and his colleagues identify. These problems, which are likely to be more stubborn than those on the demand side, stem from the large gap between real wages and labor productivity in Eastern firms. In the immediate aftermath of the July currency union, producer prices, exposed to foreign competition, fell by close to 50 percent, while wages, which had started rising early in 1990, continued to rise. Eastern wages are now about half the level of wages in West Germany and in some industries there is a presumption they will reach parity with the West in a few years. As a result of these widely divergent movements, the ratio of wages to producer prices nearly tripled between early and late 1990. With no compensating improvement in labor productivity, most firms have been caught in a severe price-cost squeeze.

How did wages get so high? The authors note that the parity between Eastern and Western marks established at the time of union started Eastern wages at too high a level, and hence they might have been expected to fall under competitive pressures. That instead wages subsequently rose can only be understood in terms of the goals and market power of labor unions. Nearly all wages in East Germany are being determined through bargains struck with the help of Western unions. On

the other side of the bargaining table sit socialist managers, who may have neither the expertise nor the incentive to bargain for the lower wage levels that would make Eastern firms viable. Moreover, because unemployment compensation has been made relatively generous, the political cost of unemployment is minimal.

The government and labor unions claim that high Eastern wages are needed to prevent a more massive migration of workers from East to West. But Akerlof and his colleagues, reporting on the public opinion surveys that they conducted to explore East German attitudes toward migration, find that pay differentials are unlikely to be important in migration decisions—most Easterners simply prefer to live and work in the East despite lower wages. They conclude that relatively high Eastern wages may actually, and ironically, encourage migration by destroying jobs and raising unemployment in the East.

In order to quantify the current price-cost squeeze of Eastern firms, the authors analyze firm-level data that had once been used for planning purposes by the former East German government. The data contain both the foreign currency proceeds from exports and the long-run average cost of producing those exports. Using these data, the authors calculate that in 1989 Eastern industry spent an average 3.73 marks to earn one deutsche mark from exports, taking account of all costs. Across major sectors this ratio ranged from 2.08 in energy to 4.82 in electronics. Across firms within industries the range was even wider, though only the State Porcelainworks of Meissen had costs relative to deutsche mark earned that were less than unity.

Firms need not cover all long-run costs to stay in business; they are viable if they can sell at a price that exceeds short-run variable cost. Thus, to estimate which firms are currently viable, Akerlof and his colleagues make several adjustments to the 1989 cost ratios: they subtract from revenue taxes, profits, and interest payments, which together had totaled an enormous 59 percent of revenue; add back current payroll taxes; and adjust for the changes in wages and in the costs of purchased inputs since 1989. They calculate that short-run variable costs after currency union are about half of average total costs before union. Using these cost estimates and industry prices, the authors find that only 8 percent of East German workers are employed by firms that can cover their variable costs at the present wage levels and at world market prices.

Thus, Akerlof and his colleagues see the price-cost squeeze on Eastern firms as so severe that they project a substantial worsening of unemployment and underemployment.

Besides destroying employment prospects, high wages hinder the privatizing of Eastern firms. The Treuhandanstalt, the trust created to privatize some 8,000 Eastern firms, was able to privatize less than 10 percent of them as of early 1991. The authors cite several reasons for this difficulty: title to firms' property is not clear because of potential claims by some former owners; firms often cannot meet Western environmental health and safety standards without spending a great deal of money; and, because most firms are not viable in light of the price-cost squeeze, they cannot be sold as going concerns. Many firms would be easier to sell for their real-estate value alone, but the Treuhandanstalt is attempting to sell firms to buyers that will continue to operate them and maintain employment.

To create employment in the East and to facilitate the sale of state-owned firms, the authors recommend a wage subsidy that would be phased out as productivity in the East improves—what they describe as a self-eliminating flexible employment bonus. The required subsidy would be large. Using their estimates of costs and productivity in Eastern firms, they calculate that a subsidy of 75 percent of hourly compensation would be needed to make viable the employment of 75 to 80 percent of workers in existing firms. With the wage subsidy in place, they propose that the Treuhandanstalt auction off all its firms to the highest bidder and liquidate those that remain unsold. Equally important, they believe the subsidy would also encourage the investment needed to start new firms in the East, by providing the lure of low wage costs. Finally, despite the subsidy's size, they calculate that its budgetary cost would be small, possibly even negative, because instead of paying generous unemployment benefits the government would collect payroll and income taxes from workers employed in the newly created jobs.

Akerlof and his colleagues realize that a wage subsidy carries both political and economic risks. As they and the discussants of the paper recognize, it could prove politically difficult to phase out the subsidies as Eastern productivity improves. The subsidies could steal jobs from workers in Western firms, particularly those located near the border. And, if mishandled, subsidies could perpetuate bureaucratic management of firms, delaying the needed revitalization and decentralization of

the Eastern economies. But the authors reason that these and other problems should be confronted directly rather than used as a reason to avoid a program of wage subsidies, which is needed to head off depression in the East.

ARE THERE fundamental economic forces tending to make poorer regions grow faster than richer ones so that one day the income and welfare of poorer peoples will catch up with those in the rest of the world? If so, what are those forces and how rapidly do they work? Despite the importance of these questions, economists are far from having answers to them, in part because developing countries differ in such complex ways. In the second paper of this volume, Robert J. Barro and Xavier Sala-i-Martin attempt to inform the debate by focusing on the convergence of relatively homogenous regions, where the growth process and its driving forces may be more easily observed.

The authors examine the growth and dispersion of the income and product of U.S. states since 1880 and those of 73 regions of Western Europe since 1950. Their analysis takes as its starting point the transition path predicted by the neoclassical growth model for closed economies and then examines how the transition would be affected by capital and labor mobility. According to the standard neoclassical model, the rate at which output per effective worker approaches its equilibrium steady-state level depends on saving behavior and on how far the economy is from steady state. The further the capital stock is below its steady-state level, the greater is the marginal productivity of capital, and hence the more rapidly the economy grows for a given saving rate. In addition, in the case of the Cobb-Douglas production function, the lower is capital's share the faster the economy moves to steady state. The rate is independent of the level of technology and hence does not differ simply because the level of income per capita differs across states or regions. While the speed of adjustment can differ across economies, because of differences in the curvature of the production function or differences in saving behavior, the authors suggest that for the U.S. states, at least, technology and preferences are likely to be quite similar.

The authors estimate a cross-section equation, consistent with the neoclassical model, relating growth of U.S. states over various time periods to the level of the state's initial personal income per capita. Estimates are made for nine intervals starting in 1880. Although most of

the estimates of the rate of convergence, β , are significantly positive, the magnitudes vary a great deal and two of the estimates are negative; the hypothesis that β is stable over the various periods is rejected. Including regional dummies, which could proxy for steady-state differences in income per capita and its rate of growth, reduces the variation in estimated β somewhat, but the data still reject β stability.

The growth rates of income originating in different sectors can vary substantially within any time period. Since the sectoral composition of states differs, a state's income growth can be atypical even if each of its sectors grows at that sector's national rate. The authors therefore include two variables to separate the effects of sectoral composition from the effects of capital deepening or changes in the relative importance of sectors. The first variable is the share of personal income originating in agriculture at the start of the period. The second is a constructed variable that gives the rate at which each state would grow over the period if each of its sectors grew at the national average. Inclusion of these variables in the regressions gives estimated β 's that average slightly over 2 percent a year and are stable across periods. When states are grouped into regions, and when the same variables are controlled for, the estimates of β are quite similar, slightly below 2 percent a year.

A rate of convergence near 2 percent accords with the neoclassical growth model only if diminishing returns to capital set in very slowly. For example, with a Cobb-Douglas production function, the capital-share coefficient has to be in the neighborhood of 0.8. The authors argue that this high value is reasonable if capital is taken to include human capital, which would indicate that education and other expenditures on people represent important productive investments.

The estimates of the rate of convergence indicate how fast an economy moves to its steady-state level of per capita income. However, the estimates of β do not predict the dispersion of income across states or regions. Individual states may have different steady-state levels of income or rates of growth and may also be subject to shocks that divert them from their steady states. Although there may be a common element to some shocks, others, such as wars or shocks to agriculture and oil prices, affect states and regions quite differently. The authors, therefore, look directly at how the dispersion of personal income across states varies through time. Starting from a cross-sectional standard deviation of over 50 percent in 1880, dispersion declined quite steadily until the

1920s, when it rose from 33 percent to 40 percent because of adverse agricultural shocks concentrated in states with below average incomes and the onset of the Great Depression. Dispersion again declined steadily from the early 1930s to the mid-1970s, when it reached a low of 14 percent. The decline was particularly steep during the 1940s because of the favorable experience of agriculture. Dispersion rose slightly from the late 1970s to the end of the sample in 1988, a rise the authors attribute to the oil shocks and their aftermath. The level of dispersion in the 1980s is approximately the steady-state value implied by the distribution of shocks and the authors' estimate of the rate of convergence. The striking feature of this time series is that the excessive dispersion of 1880 took nearly 70 years to eliminate. The high dispersion of 1880 reflects the exceptionally low per capita incomes of southern states, relative to the rest of the country, a pattern that can be traced back to the Civil War; in 1840 average income in the South was not much below the national average.

The authors recognize that the closed-economy neoclassical growth model should not be taken as a literal description of the U.S. states or the regions of other countries. If factors are mobile between regions, the rate at which the capital-labor ratio adjusts toward steady state is not constrained by a region's saving. With movement between regions of either capital or labor, output per capita should converge more rapidly. However, if the capital that moves to equate the capital-labor ratio is owned by foreigners, income per capita should adjust less rapidly than in a closed economy. How income per capita adjusts with labor mobility depends on how much capital the labor takes with it.

In order to assess whether labor mobility is an important element in the adjustment process, the authors examine the extent to which net migration responds to differences in per capita income. Using regressions that control for climate and population density as well as other regional characteristics, they find a significant positive relation between per capita income and the rate of in-migration. However, the estimated magnitude of the response is relatively small. For example, a 10 percent increase in a state's personal income raises net in-migration only enough to raise the state's population by 0.26 percent a year. This slow adjustment means that migration will not bring about rapid convergence. The authors estimate that under the extreme assumption that migrants take no human or nonhuman capital with them, as much as a third of the 2

percent rate of convergence estimated earlier could be credited to migration. With what they regard as the more reasonable assumption that the typical migrant brings half the capital stock of a person already resident in the destination state, migration can explain less than 20 percent of the estimated rate of convergence.

The absence of information on capital mobility prevents the authors from studying its importance directly, although they do note that if capital mobility is important, gross state product should converge more rapidly to steady state than state income. However, using regressions similar to those used for income, they find rates of convergence of gross state product similar to those found for personal income, with an estimated β over the four periods again slightly over 2 percent. Disaggregating into eight sectors, they find that except in manufacturing, which is estimated to converge at a rate of 4.6 percent, the behavior of product in individual sectors is much like the behavior of income, with a pooled β coefficient of 2.1 percent. Hence, it appears that much of the convergence of state income and product occurs within sectors rather than by changes in sectoral mix. The results do suggest that some shocks, notably oil shocks, have different distributional effects on income and product, reflecting the fact that ownership of oil is distributed more evenly than its production.

The authors also apply their analysis to gross domestic product in the regions of seven European countries: Germany, the United Kingdom, Italy, France, the Netherlands, Belgium, and Denmark. Although these countries are trading partners and in close proximity, there is presumably less capital and labor mobility between them than within them or among U.S. states. In fact the estimates of β convergence between countries turn out to be similar to those within countries, but the authors focus their discussion on the within-country results. After controlling for agricultural share and sectoral composition, they obtain a pooled β estimate of 1.8 percent a year, slightly smaller than among the U.S. states. Estimating separate β coefficients in each country gives point estimates of convergence ranging from essentially zero for Denmark to nearly 5 percent for the Netherlands, but these differences are only marginally statistically significant.

Income dispersion within the European countries, measured by the standard deviation of the log of per capita GDP, declined from 28 percent in 1950 to 18 percent in 1985, not dissimilar from the experience in the

United States. Individual countries have a similar trend but substantially different levels and variations over time. Dispersion is lower in the United Kingdom than in the other countries and actually increases during the late 1970s, presumably because of the oil shocks. Italy is at the other extreme, with a dispersion of over 40 percent in the 1950s and a decline to only 26 percent by 1985. France has relatively low dispersion and it decreases relatively steadily throughout the period.

The most striking aspect of the authors' results is the similarity in the estimated rates of β convergence in a variety of contexts: for income and product; within and between regions; for the United States and Western Europe. These similarities are all the more surprising since labor and capital mobility, theoretically factors that should influence the rate of convergence, almost certainly differ over these contexts.

These robust findings lead the authors to conclude that the economic forces that bring productivities and incomes in line across economies are effective but slow-acting. They note that an implication of this finding is that the task of bringing incomes in Eastern Europe in line with their Western neighbors is daunting. If the adjustment takes place at the rate the authors estimate, it will take 35 years to eliminate half the gap between the per capita income in East and West Germany.

WHILE PUBLIC discussion has focused on the growth of the federal budget deficit during the 1980s as a major source of dissaving in our economy, the rate of private saving has declined even more. Together, the declines in public and private saving have brought down the rate of net national saving in the United States from an average of 8 percent of national income in the postwar years up to 1980 to just 2 percent today. This decline in the private saving rate came as a surprise—it followed several decades of fairly stable saving rates, and most of the decline came when real interest rates were historically high and after the government had redesigned the tax system to increase effective after-tax rates of return. Indeed, these latter two developments were commonly expected to promote saving. Economists have been unable to sort out conflicting explanations for the behavior of saving on the basis of macroeconomic data alone. In the third paper of this issue, Barry Bosworth, Gary Burtless, and John Sabelhaus turn to a more disaggregated analysis using household survey data for insight into the sources of the saving decline.

The authors first document the magnitude and composition of the

decline in the U.S. saving rate. Focusing on the national income accounting (NIA) measures of saving (except for a reclassification of reserves in state and local pension plans from government to private savings), the authors calculate that the overall net national saving rate has fallen by about 6 percent of net national product, with about half the decline coming in government saving and half in private saving. Disaggregating further, the most important source of the decline in private saving is a large drop in retained earnings. The authors believe an important part of this drop can be traced to the substantial losses of financial institutions and to the fact that domestic corporations have increased the portion of their cash flow paid out as interest and dividends. Employer-provided pension plans have also contributed to the decline in saving. While employer contributions and earnings on existing pension assets have remained at about 4 percent of net national product (NNP), benefit payments rose substantially in the 1980s, sharply reducing the net contribution of these pensions to national saving.

Discretionary saving, personal saving that is not done through pension funds, is the focus of the paper. Discretionary saving averaged over 4 percent of NNP during the 1950s and 1960s and peaked at 5.1 percent in the first half of the 1970s. It dropped in the second half of the 1970s and averaged only 2.2 percent in the period 1986–90. Since 1987, it appears to have rebounded to around 3 percent.

Economists have advanced numerous hypotheses attributing the decline in aggregate personal saving to changes in the behavior of particular types of households or to changes in the demographic composition of the population. Examples of conjecture include the high borrowing propensity by the baby-boom cohorts and the growth in the fraction of households headed by the elderly or by single mothers. Microeconomic surveys that track the saving behavior of various households appear an ideal way to test such views. The authors consider two household surveys that provide alternate measures of family saving as well as considerable detail about the respondents: the Consumer Expenditure Survey (CES), which reports saving as the difference between income and consumption expenditures over the year, and the Survey of Consumer Finances (SCF), which calculates saving as the change in a household's wealth over time. The analysis of the CES is based on a comparison of surveys from the 1972–73 period with surveys from 1982–

85, while the SCF analysis compares the 1963 survey with the surveys of 1983–86.

Changes in the age structure of the population have received perhaps the most attention in recent years, both as an explanation of the past decline in saving and as a potential source of lower saving in the future. In contrast with some macroeconomic studies, the authors find no support for age-structure effects in explaining total saving in the micro-survey data. In the survey data, there is little difference in average saving rates across age groups, so that compositional changes themselves cannot explain much. Saving declines for almost all age groups, but with significantly smaller declines for younger households than for older ones. There is no evidence that the decline is concentrated among households headed by members of the baby-boom generation.

As measured in the household surveys, the measure of saving excludes employer contributions to pension plans from both workers' incomes and workers' saving and treats pension benefits to retirees as income, rather than as a depletion of accumulated savings. Bosworth, Burtless, and Sabelhaus show that adjusting the survey data for these pension flows dramatically reduces the saving rates of the elderly relative to younger groups, so that changes in the age distribution have potentially larger effects on aggregate saving. Yet even with the adjusted data, changes in the age distribution still explain a relatively small portion of the recent decline in aggregate saving because the relative size of the retired population has not changed enough to make a big difference. Looking ahead to the first twenty years of the next century, this picture changes somewhat. The authors estimate that changes in the age distribution will cause a 1 percent decline in the aggregate saving rate over this period, as the projected relative size of the retired population grows.

The authors also examine the saving behavior of groups disaggregated by household composition, income, and asset ownership. Changes in household composition cannot explain the decline in aggregate personal saving. For example, single heads of households with children have the lowest saving rates in the population and have been a growing share of the population, but their incomes are so low that their increased prevalence has not had a noticeable effect on the aggregate saving rate. Changes in household size and in the number of income earners per household should actually have raised saving in the 1980s.

In contrast to life-cycle consumption models, theories that build on liquidity or borrowing constraints imply that differences among the saving rates of income classes could help explain changes in aggregate saving if the income distribution shifts. Bosworth, Burtless, and Sabelhaus find substantial differences in saving rates across income quintiles. However, the effect of changes in the income distribution goes in the wrong direction for explaining the aggregate saving decline. Because of the increase in the relative income of the highest quintile (the group with the highest saving rate), shifts in the distribution of income should have slightly increased saving in the 1980s. The data show that the saving rate fell for every income class, just as it did for every age bracket.

Finally the authors examine the extent to which capital gains, themselves not part of measured income and saving, can account for the movement in the aggregate saving rate. In the SCF, they find that the decline in the saving rate is actually smaller among stock- and bondholders than it is among households with no marketable financial assets. The CES, however, shows a larger decline in saving for households with financial assets. In both surveys, saving rates fell substantially more among homeowners than among nonhomeowners, consistent with the view that capital gains on housing may have contributed to lower saving rates.

Bosworth, Burtless, and Sabelhaus supplement their results from household surveys in the United States with an analysis of similar surveys for Canada and Japan. The variations in the average saving rate for all households in the Canadian surveys closely parallel saving variations in Canada's national accounts. There are similar changes in the saving rates of households in all age groups, and the changing age distribution accounts for little of the time series variation in saving. Similarly, the Canadian pattern of saving by income quintile is much like that in the United States, and saving rates in the individual quintiles move up and down in line with changes in the overall rate. As in the United States, there has been a secular rise in the proportion of income received by individuals in Canada's top quintile, but this change alone would have yielded a 0.2 percentage point *rise* in the saving rate between 1969 and 1986. The only notable difference with the U.S. surveys is that in Canada the decline in saving after 1982 is more pronounced for tenants than for homeowners.

For Japan, where available surveys provide age-specific saving rates

annually over a twenty-year period, the authors find some disparity in the saving behavior measured by the surveys and by Japan's national accounts. Both have a long-term pattern of rising saving through the mid-1970s and falling saving thereafter. But the survey measure declines more sharply in the early 1980s and rises near the end of the period, while the national accounts measure declines throughout the decade. As in the United States and Canada, the secular decline in saving is evident in all age groups. The distribution of saving rates by age displays a humped shape, but with less difference across ages than in the United States. Thus, although changes in the age distribution are much more pronounced in Japan than in the United States or Canada, they have an almost imperceptible effect on aggregate saving.

The authors regard the fact that saving has declined in all three countries and across all demographic groups as the most striking finding in the survey data. This uniformity in the microdata leads them to speculate about what general macroeconomic phenomena might explain the common decline in saving. One candidate is the secular decline in income growth, which has been pronounced in the United States since the early 1970s and is shared by other industrialized economies. Most forward-looking theories of consumption suggest that a reduction in expected future income would increase, rather than decrease, saving. The authors show that, by contrast, if households at each age attempt simply to hold the ratio of income to wealth constant, saving rates would be positively related to the rate of income growth, producing, in effect, an accelerator theory of saving. In this model, the slowdown of around 1.7 percentage points in U.S. income after the early 1970s could explain a 6 percentage point decline in the saving rate, which is even greater than the decline experienced. They find this explanation attractive because it can explain a phenomenon that is prominent both across major industrial countries and across a broad cross-section of households— young and old, rich and poor, equity holders and debtors. Pessimistically they note that if this explanation for the saving decline is correct, there is no reason to expect a recovery in private saving anytime soon.

DURING THE 1980s, the financial condition of U.S. banks deteriorated and public confidence in banks declined. A number of institutional and legal changes that heightened competition and altered established banking practices may have contributed to these developments. The deterioration

of banks' condition has raised anxiety about the adequacy of deposit insurance reserves and of the present system of regulation and supervision. It has also stimulated a reexamination of proposals for changing the laws and regulations governing banks. In the fourth paper of this issue, Allen B. Frankel and John D. Montgomery compare the U.S. banking system with the systems in Germany, Japan, and the United Kingdom to see how the experience of these other countries can inform the debate over the U.S. financial system.

The authors present several indicators of the worsened condition of banks. They show that bond ratings of nine major money-center bank holding companies deteriorated from 1980 to 1988, and have stayed poor ever since. The number of bank failures, which had been virtually negligible from World War II to the end of the 1970s, rose steadily from 1980 to 1989, when 206 banks failed. To some extent, this erosion in banks' health may reflect events beyond their control or banks' responses to new developments in the financial sector. For example, bank failures probably reflect rising bankruptcies among nonfinancial firms, although the changing standards for bankruptcy make these statistics hard to interpret. Increased competition on several fronts has squeezed banks' lending margins and may have pushed banks into riskier activities as a result.

A trend away from banking practices centering on customer relationships and toward market-based transactions has increased competition in making loans. The development of money-market funds has provided a new source of competition for attracting deposits, while deregulation and the growing financial problems of thrift institutions intensified the competition between thrifts and banks for deposits. At the same time that deregulation intensified the competition among U.S. banks, competition from foreign banks was growing.

Banks have also suffered unusually large loan losses, which have arisen, at least in part, in response to aggressive lending practices. While growing competition and relaxed regulation have been important to this lending behavior, the deteriorating condition of banks and the large loan losses they have incurred also reflect increases in banks' own appetite for risk.

Frankel and Montgomery show that the assets of U.S. banks have grown much more slowly than the assets of banks in Germany and Japan. Indeed, during the 1980s, assets of the largest U.S. banks actually

declined relative to the size of the economy, while in both Germany and Japan the assets of large banks more than doubled relative to GNP. In the United Kingdom, bank growth fell between these extremes. Thus, while the importance of banks is declining in the United States, it is apparently increasing elsewhere. Germany and Japan have generally been characterized as bank-oriented financial systems. There, banks have consistently provided over half the funds raised by nonfinancial business. By contrast, banks have generally provided less than 30 percent of the funds raised by U.S. business. Finally, although banks' profits are notoriously hard to measure, it appears that the largest U.S. banks have earned a lower average rate of return on both assets and equity than banks in the other countries.

Differences in banks' performance across countries may well be associated with differences in the structure and regulation of those countries' banking systems. Accordingly, the authors provide a detailed comparison of the laws and regulatory environments that determine how banks operate in the four countries. Perhaps the most significant difference is the range of activities permitted banks. In Britain and Germany, banks are allowed to sell and underwrite insurance, to engage in all securities transactions and activities, and to own equities. Japanese and American banks are much more restricted in these businesses. Also, U.S. banks are largely restricted from branching across state lines, and in Japan branching is tightly controlled through the Ministry of Finance. All countries have a formal deposit insurance system, though the authors point out that the actual treatment of failing banks varies widely. In Japan, for example, banks in trouble have been merged with other, strong banks, so that the deposit insurance system has not had to deal with any bank failures. Only Japan's insurance system affords approximately as much official protection as the U.S. system. However, the authors do not regard the differences in deposit insurance as fundamental, because they see diligent regulation and supervision as an alternative way to provide equivalent protection for depositors. Some discussants questioned this proposition on the grounds that the present condition of U.S. banks reveals the political difficulty of accomplishing sufficient bank oversight.

A striking statistical difference between the U.S. banking system and these others is the much larger number of banks chartered in the United States—12,500 compared with only 154 to 273 in the other three countries

in 1990. Bank concentration also appears greater abroad when measured by the proportion of assets held by the five or ten largest banks. The multitude of banks and the lower degree of concentration might suggest that the U.S. system is more competitive. However, as a result of U.S. restrictions on bank branching across state lines, there may actually be few banks and little competition in particular local markets. On the other hand, the authors show that competition from foreign banks is much greater for American and British banks than for those in Germany and Japan, with the competition presumably centered in major markets. In Germany and Japan, the foreign bank share of commercial loans never exceeded 4 percent in the three years that were sampled from the past decade, while the share ranged from 10 to 20 percent in the United States and from 25 to 30 percent in the United Kingdom.

The degree and nature of customer relationships also differ substantially across countries. In both Germany and Japan, banks hold important equity positions in their customers' firms and get directly involved in the firms' affairs. Such involvement is rare in the United States and United Kingdom. Among other things, these differences affect how financial distress of nonfinancial firms gets resolved. In the financial systems of Germany and Japan, banks often take the lead in organizing financial help and reorganization. By contrast, such involvement is plainly discouraged in the United States both by custom and, indirectly, by laws of liability that punish self-dealing.

Although economic performance may depend on the structure of the banking system, the authors recognize that the connection between structure and performance may be hard to establish with available data. Nonetheless they discuss three possible changes to the U.S. system: permitting banks to take larger equity positions in nonfinancial firms; relaxing the present limitations on bank-customer relationships; and abolishing geographic barriers to branch banking. They believe the case for removing branching restrictions, which would permit banks to reduce risk by better diversifying their asset exposure, is the strongest. They find the case for allowing banks to hold equity the most questionable. In their view, the major advantage of banks' taking equity positions stems from their becoming more involved in the decisions and welfare of their clients. But they see these advantages as largely theoretical and are unable to find evidence to support them. The disadvantages they see

are that equity positions would increase banks' risk, requiring either increased supervision or more bank capital. They believe it is important to have clearer evidence on the balance between these costs and benefits before proceeding with any such changes.

TRADE RELATIONS between the United States and Japan continue to be clouded by suspicions that Japan restricts imports. With most official tariffs and quotas now removed, attention has moved to less formal obstacles to free trade. Most recently, U.S. trade negotiators have argued for increased policing of *keiretsu*, the groupings of firms with close but informal business ties to one another. In a report in this volume, Robert Z. Lawrence examines the impact of *keiretsu* on Japanese trade.

The effect of *keiretsu* on the conduct of business within Japan and with the rest of the world is the subject of considerable debate. Some observers believe they may interfere with competition, free trade, and foreign investment in Japan. There has been little agreement on these and other questions about the impact of *keiretsu*, in large part because it is so hard to marshal direct evidence on how they affect the conduct of their affiliated firms.

Lawrence gets around this by turning to statistical evidence on *keiretsu* and trade performance. Using data from a 1985 survey of firms' *keiretsu* affiliations, he calculates the share of each industry's sales associated with *keiretsu* in that year. The 17 *keiretsu* identified in this survey accounted for 25 percent of total sales and 32 percent of net income in Japan, and their importance varied widely across sectors. Although such data are unofficial and affiliations change, Lawrence regards these share data as unbiased indicators of the importance of *keiretsu* in the individual industries.

Keiretsu could be correlated with trade performance for reasons other than restrictive trade practices. In particular, if *keiretsu* helped efficiency, industries in which they were important might exhibit both unusually low imports and high exports simply because their exceptional efficiency made them unusually successful competitors in world markets. To distinguish between efficiency effects and the effects of trade restrictions, Lawrence examines the relation between *keiretsu* and imports and exports separately. He hypothesizes that exceptional efficiency

should show up in both unusually low imports and high exports, while trade restraint should show up in low imports alone.

Lawrence also distinguishes between horizontal and vertical *keiretsu* because they are substantially different institutions and could well have different effects on trade. Historically, horizontal *keiretsu* developed out of prewar *zaibatsu* (industrial conglomerates) or around large banks. The affiliated firms are typically diversified across many, generally unrelated, industries. They commonly own each others' stock, share business information, and are financed primarily through a common bank. They share some management personnel and marketing affiliates and may act together in making new investments. A typical vertical *keiretsu* centers on a manufacturing firm at the core of a network of suppliers, subcontractors, and important customers. The affiliated firms all have well-defined roles in support of the production and marketing strategies of the core business.

In order to isolate the effects of *keiretsu* on trade flows, Lawrence introduces his share variables into equations developed previously for explaining Japanese trade on the basis of other economic variables such as technology, capital and raw material intensity, transportation costs, tariffs, and industrial concentration. In industry cross-section regressions that control for these factors, he finds both horizontal and vertical *keiretsu* have a negative effect on industry imports. But only vertical *keiretsu* appear to have significant positive effects on industry exports. These results suggest the vertical *keiretsu* may be efficient, restrictive, or both. If export performance is a guide, any effect of horizontal *keiretsu* on imports does not stem from efficiency advantages.

In a second experiment, Lawrence uses his *keiretsu* share variables together with results from previous work explaining import shares of OECD countries. He estimates how the share of *keiretsu* sales in an industry correlates with the departure of the industry's imports from predictions of imports based on cross-country regressions. Lawrence finds that the vertical *keiretsu* significantly reduce imports, thus strengthening the inference drawn from the other import equations. Because these cross-country regressions indirectly allow for the relative efficiency of the industry, the estimated effect of *keiretsu* should be interpreted as being in addition to any effects they have on efficiency. However, the horizontal *keiretsu* actually get a positive, though not significant, coefficient in the cross-country regressions, in contrast to

the negative effect on imports (suggesting restrictive practices) that was found in the cross-industry regressions. So while Lawrence's results suggest that vertical *keiretsu* restrain imports, even if they also add to efficiency, the effect, if any, of horizontal *keiretsu* on trade is much less clear from these results.