

Editors' Summary

THE BROOKINGS PANEL on Economic Activity held its sixty-fourth conference in Washington, D.C., on September 4 and 5, 1997. This issue of *Brookings Papers* includes the papers and discussions presented at the conference. The first paper examines the economic implications of alternative proposals for reforming the U.S. social security system. The second analyzes the large increases in both unemployment rates and capital shares in continental Europe. The third paper models how government policies have given rise to large unofficial sectors in some transition economies of central and eastern Europe and the former Soviet Union. And the fourth assesses the gains and costs likely to flow from European monetary union.

THE DESIGNERS of the U.S. social security system intended to provide a secure and stable retirement program. In the first few decades of the system, a growing work force and moderate tax increases allowed politicians to increase the generosity of benefits. However, today the projected rise in the ratio of the retired to the working-age population implies that the current rate of payroll taxes will not be adequate to cover scheduled benefits in the future. According to the Social Security Administration's official actuary, based on intermediate projections of demographics and other key variables, the trust fund balance will run out in the year 2029. To restore financial balance over a seventy-five-year horizon would require an immediate and permanent 2.23 percentage point increase in the payroll tax. There has been no shortage of proposals for fixing the social security problem, but none has gained wide political support. Even the Advisory Council on Social Security, created with the hope that it would agree on a plan that could gain broad support, was unable to do so. In the first paper of this volume, Peter Diamond provides an in-depth discussion of the political and economic

considerations that should inform any changes in the social security system.

Most reform proposals contain at least one of the following three features: moving rapidly to build a large permanent trust fund, changing the trust fund portfolio to include private securities along with federal debt, and replacing part of the current defined benefit Old-Age, Survivors, and Disability Insurance plan with a defined contribution plan. Each of these features has consequences that are not immediately apparent, as they involve not only redistribution of the expected tax burden across income classes and across generations, but also reallocation of risks about future rates of return. The reforms also have potentially important indirect effects on saving, the capital stock, and future growth. One important contribution of Diamond's paper is a formal analysis that explicitly considers the response of individuals and firms to changes in the system. Another contribution is the recognition of the interplay between politics and economics in this arena, which leads him to consider the political response that might arise in future years from changes made to the system today.

Diamond compares the three proposals put forward by the advisory council. All address the projected financial problems, but they differ sharply in how they would change the present system. The Maintain Benefits proposal resembles the current system but raises taxes to augment the trust fund and includes the possibility of investing part of the fund in private equities. The Individual Accounts proposal is somewhat more innovative, introducing a defined contribution element: a 1.6 percent increase in the payroll tax funds 401(k)-style accounts for which the government provides a menu of available investments, including equities, with mandatory annuitization upon retirement. The Personal Security Accounts proposal is most radical, allocating 5 percent of payroll taxes to individual defined contribution accounts that resemble current individual retirement accounts.

Diamond first examines the idea of raising current taxes to create a larger trust fund. While future recipients and taxpayers would find it desirable to inherit a larger trust fund, building a larger fund would require current sacrifice. How big a sacrifice depends on the rate of return to saving and on the rate of population growth. To clarify this relationship, Diamond uses a two-period overlapping generations model. He focuses on the effect of a temporary tax increase that is used

to increase the fund permanently, so that a given stream of future benefits requires a lower steady-state tax rate. Assuming, first, that the supply of labor is inelastic and that increases in the capital stock do not affect interest rates or wages, he shows that the decline in steady-state tax collections per dollar of increased trust fund is equal to the excess of the rate of return on capital over the rate of growth of the labor force augmented by technical change. With zero population growth and no technical change, this is simply the rate of return on capital. But under more realistic assumptions, the growth in the effective (augmented) labor force implies a reduction in taxes that is less than the rate of return on capital by 2 or 3 percent.

How much the nation's capital stock grows depends not only on the additions to the fund, but also on the response of the household sector. In the basic model, households are assumed to arrange their lifetime consumption optimally and to take full account of the reduction in future payroll taxes. In the steady state, they save more during their working years, adding further to the capital stock. However, Diamond observes that the rationale for social security is closely related to the idea that many people would not save adequately for retirement without government intervention, an idea that is supported by the evidence. This leads him to modify the basic model to recognize that some fraction of households do not save at all, and households in the aggregate respond less than the life-cycle model assumes. These modifications lead to smaller increases in private saving and the capital stock and dampen the downward pressure on the rate of return. In the limit, with no change in household saving, the increase in the capital stock corresponds to the increase in the trust fund itself.

The calculations are more complicated if increasing the capital stock by increasing saving drives down the return on capital and raises the wage rate, as would be expected in a large economy like the United States. Lower interest rates reduce the earnings of the trust fund and higher wages raise the benefits needed to preserve a given earnings replacement rate for retirees. Both effects reduce the return to building up the trust fund. But the consequences for the entire government may be different, because the decline in interest costs also lowers the cost of servicing government debt held by the public.

Diamond observes that induced changes in wages affect income tax revenues as well as payroll taxes, increases in the capital stock raise

capital income tax revenues, and, as mentioned above, changes in interest rates affect the cost of servicing government debt. He notes that it makes a difference whether changes such as these, which arise from reforms to social security, accrue directly to the fund or to other parts of the government budget or to individuals, and calls attention to the potentially large distributional consequences of such effects. He suggests that while analysts should take account of such induced increases, it would be politically difficult to capture them for the benefit of social security.

Investment in the stock market is a feature of many proposals for reform. Had the trust fund invested in corporate equities as well as government debt in the past, it would have produced higher returns and improved its financial condition. Given the actual size of the fund, the improvement would have been relatively minor, but it could be substantial if a large, permanent trust fund were created. Diamond notes that a shift toward equity in the trust portfolio would have important effects on actuarial calculations of the condition of the trust fund long before the shift produced actual changes in the fund. If social security were in actuarial balance before the shift, and if historical returns were used to project the future, social security would move to an actuarial surplus. Such a projected surplus could be spent in a variety of ways—to raise the benefits or reduce the taxes of current generations, or to benefit future workers and retirees.

Diamond points out that the improved actuarial position comes at the cost of increased risk, to be borne by future taxpayers who will have to adjust to greater fluctuations in portfolio returns. Thus intergenerational redistribution depends on the allocation of risk, as well as on the expected allocation of taxes and benefits. The paucity of theoretical analysis of these issues leads Diamond to construct a series of stylized overlapping generation models that illuminate the way in which the portfolio allocation of the fund affects risk-sharing both within and across generations.

Because risk-sharing is a central issue in considering the effect of equity investment, Diamond makes risk in the returns to both capital and labor the central feature of the model. The overlapping generations model exposes the incompleteness of private markets—their inadequacy in allocating resources into the future—and suggests that government intervention can accomplish Pareto improvements. But the

importance of the incompleteness depends in subtle ways on the structure of the economy. For example, if the production function is Cobb-Douglas, technology affects the interest rate and the wage rate proportionately, so that there is some risk-sharing between the young, who rely on wages, and the old, who rely on capital, even without government involvement. However in general, when returns to capital and labor are not perfectly correlated, the risk-sharing across generations is suboptimal. Diamond explains how government ownership of capital can improve the allocation of risk. To acquire capital, the government in effect engages in an "open market operation," issuing risk-free debt and purchasing equities. The old, holding additional risk-free government debt, then have less risk and the government has more. In response to unexpectedly high or low returns, the government must adjust expenditures or taxes to preserve the government balance. Assuming that such adjustments mainly affect the young, the government effectively removes risk from the old and allocates it to the contemporaneous young.

Would such a reallocation of risk represent an improvement in welfare? Even in the basic, representative agent model the answer is ambiguous. Without equities in the trust fund, future wage earners still bear the risk of servicing existing government debt out of uncertain incomes; investing in equities would add to their risks. More important, the representative agent model ignores the fact that a large fraction of the public has no investment in equities and a sizable fraction has little or no personally controlled financial assets. To illustrate the significance of this heterogeneity, Diamond analyzes the effect of a portfolio change in a mandatory defined contribution system. In this system, not only are the "nonsavers" forced to save, but the risk and return properties of their savings are mandated. Savers, by contrast, can undo the effects of the mandatory contribution and its allocation by adjusting their personal portfolios. A key issue in assessing the effect on the welfare of individuals is whether the nonsavers are more risk averse than the savers. As to the effects on investment, if the fund portfolio adds equities, the pool of individuals who are sharing the risks in the economy is broadened, which should reduce the risk premium and increase capital formation.

Diamond also considers the effects of reform on labor market decisions. Some have argued that switching from a defined benefit to a

partially individual (that is, defined contribution) system would improve the efficiency of the labor market by tightening the links between taxes and benefits. Diamond notes that the distortionary effects of mandatory saving for either defined benefit or individual accounts depend both on an individual's place in the income distribution and on the design of the plans' redistributive features. For some individuals, the distortions from an individual account can actually be greater than they are from social security. For example, for an individual who does not care about bequests, the assets accumulated in an individual account are of no value if he dies before retirement, and the annuity that he receives if he does retire is unaffected by the possibility of early death. In a defined benefit plan, the actuarial returns to his saving in fact are higher, because they do reflect the possibility of early death.

How much choice should individuals have in the use of their savings? The mandatory annuitization of benefits under social security prevents individuals from spending their savings rapidly or outliving the resources available for retirement. The advisory council's Individual Accounts plan also requires annuitization, although it allows a choice between single and joint life annuities. The Personal Security Accounts plan leaves the choice up to the individual and the opportunities provided in the private annuity market. Diamond points out that several questions bear on the issue of individual choice. To what extent would individuals annuitize voluntarily? How would annuities be priced, and how competitive would rates be? Would private markets provide indexed annuities? For those who do not annuitize, how quickly would they spend down wealth and how would this affect the long-lived elderly, widows and widowers, and other recipients of bequests?

Although hard answers to these questions are not available, Diamond's educated guesses leave him skeptical of the free choice market solution. He observes that the private annuity market is poorly developed and expresses concern about individuals' lack of understanding of risk, of the difference between real and nominal contracts, and of annuities themselves. He concludes that some mandatory annuitization of individual accounts would be desirable, even though it would prevent individuals from using their resources for bequests, or to buffer random events. He also sees potential risks to widows and other dependents from allowing wage earners to make unconstrained choices between single and joint annuities. As evidence, he cites the dramatic changes

in the choice of plans that occurred after policyholders were required to get notarized spousal approval before selection of a single-life annuity.

Political feasibility is a key element in the formation of policy, and Diamond discusses how it enters the social security debate. For example, proponents of individual accounts argue that they would make needed tax increases more likely. Diamond acknowledges this possibility, but suggests that the case is not strong, both because the popularity of the existing system makes a tax increase earmarked for social security more likely than tax increases generally, and because the major structural change required to introduce individual accounts runs the risk of delaying all action. Diamond also considers how changes in the system are likely to affect future political decisions. His rich discussion ranges from the way pressures for benefit increases might depend on the size of the fund balance and on what part of it is earmarked for individuals to the stability of political support of the social security system in the future under the alternatives currently being discussed.

Diamond urges economists to distinguish the essential elements of a particular plan from features that could be incorporated in any one. Under the Individual Accounts plan proposed by the advisory council, the payments required to meet accrued unfunded liabilities owed to earlier generations come entirely from the payroll tax destined for the defined benefit part of the system; nothing comes from the portion of the tax destined for the defined contribution plan, and so there appears to be a superior return on those accounts. He suggests that a part of both taxes should be used to cover the redistribution to earlier generations. Diamond also worries that moving to a defined contribution plan would threaten the redistribution within generations in the current system because, as the relative size of the defined benefit portion of the system shrinks, the redistributive burden placed on it increases. He suggests that even the nature of reporting may affect the popularity of plans: the natural way of describing accrued benefits—the projected flow of benefits—may appear less impressive than the accumulated wealth in a defined contribution plan that would support the same benefit flow.

Diamond reflects on the ongoing political forces that will operate after the present system is amended. A key issue in comparing defined benefit and defined contribution plans is how well they adjust to sur-

prises. Ideally, benefit formulas and taxes should be moved gradually, with considerable lead time to allow individuals to adapt to changed circumstances. Diamond believes that a large defined benefit system, particularly if it has a large trust fund, has an inherent advantage in its ability to smooth interest rate risk over successive cohorts of retirees. Contrary to some, he does not believe that individual accounts are immune to political risk. He notes that although such accounts would be protected as private property, there is a history of change in the tax treatment of tax-favored retirement accounts, and a large pool of tax-favored accumulations will always be a potential target for increased taxation. Some day, the government might require that people draw on their individual accounts before they can receive unemployment benefits. And individualized accounts would not insulate taxpayers from calls for help in the event that the stock market collapsed and returns to individual accounts were very poor.

The current system is of long standing, mature, and very popular, and it is reasonable to think of it as being in political equilibrium. Diamond believes that changes in the system may affect public perceptions and upset this equilibrium. Social security is now thought of as a retirement income system, and it is considered appropriate that some people pay taxes and do not live to collect benefits. Individual accounts would create a different sense of ownership. With such accounts, individuals would have greater choice in how they use the accumulated funds in retirement, but it would also be natural for account owners to call for early access to cover expenses such as care for terminal illness, home purchase, or education. It would not be surprising if these forces gradually eroded social security's guarantee of funds for retirement. Diamond feels that this is likely to affect significantly the distribution of income among the elderly. Given the high level of poverty among elderly widows under the current social security system, this is a source of great concern. He urges that major reform should not be undertaken without careful attention to the distributional consequences and should not undermine the security that the system currently provides to all retirees.

TWO STRIKING MACROECONOMIC changes have occurred in the economies of continental Europe over the past twenty-five years. One, a long rise in unemployment rates, is widely recognized. The other, a

historic increase in capital's share of output since the early 1980s, has received little notice. These developments are markedly different from the paths of unemployment and income shares in other advanced economies. While there has been extensive discussion of the reasons for Europe's rising unemployment, no one has integrated those findings with the changes in capital's share. In the second paper of this issue, Olivier Blanchard presents a model of employment, output, and capital accumulation that provides such an explanation.

Blanchard begins by examining the extent to which factor quantities can account for the evolution of factor prices and income shares. He makes the standard assumptions that production has constant returns to scale and labor is paid its marginal product, and also assumes that technological change is Harrod-neutral (labor-augmenting). Using actual capital stock and employment data for fourteen member countries of the Organisation for Economic Co-operation and Development (OECD) over varying periods between the late 1960s and 1995, he estimates Solow residuals for each country and uses them to construct estimates of the efficiency of labor. He then uses these estimates to calculate employment in efficiency units and the corresponding wage per efficiency unit.

Blanchard applies these estimates in several ways. On the basis of the evolution of capital shares, he classifies each country as either Continental or Anglo-Saxon—slight misnomers, since the former group includes Australia and Ireland, and the latter, comprising Canada, the United States, and the United Kingdom, is ethnically diverse. A plot of the average factor price and factor quantity ratios for these two country groups is revealing. Up to the early 1980s, labor in efficiency units decreased markedly relative to capital in the Continental countries. Given this capital deepening, it is not surprising that the profit rate fell relative to the wage during this period, although the capital share showed little trend. Thereafter, capital deepening continued but the profit rate rose relative to the wage rate. As a consequence, capital's share rose dramatically, substantially exceeding its level in 1970. In the Anglo-Saxon countries, by contrast, both factor price and factor quantity ratios showed little trend.

Blanchard analyzes these phenomena more formally, regressing log factor price ratios on log relative factor inputs for both the Anglo-Saxon and Continental panels of countries, and including time and country

dummies. For both samples, the implied elasticity of factor substitution is not significantly different from 1.0, indicating that changes in factor proportions cannot explain the shifts in shares over time. The series of time dummies for the Continental countries show a marked decline in the 1970s and a steady and substantial rise since the early 1980s; the time dummies for the Anglo-Saxon countries, while they show substantial cyclical variation, show no trend. Blanchard tries a number of econometric variations—allowing elasticities to differ across countries, reversing the direction of the regression, and using lagged values of the factor ratio as instruments—but none of these alters his basic finding of a shift in the relationship between factor prices and factor intensities for the Continental countries that is not evident for the Anglo-Saxon countries.

Blanchard considers several possible interpretations of these results. One is that the shift in the relationship between factor prices and quantities, and the corresponding increase in capital shares, is simply a compositional effect. The factor price equalization theorem is an extreme form of this hypothesis. This theory says that factor prices are determined in world markets and differences in factor ratios are accommodated by a differing mix of industries with different factor intensities. However, Blanchard reports results for France that suggest capital's share increase in nearly all tradable sectors, so that the theory does not provide a satisfactory explanation. Another possibility, which is hard either to confirm or to reject directly, is that a stable relationship exists between factor prices and factor quantities, but it has longer lags and much more complicated dynamics than can be captured in Blanchard's basic regression. For example, it could be that factor proportions are largely embodied in existing capital, leading firms to take a long time to respond to the adverse labor supply shocks of the 1970s. As firms have gradually shifted to less labor-intensive technologies, the ratio of labor to capital has declined steadily, but profits have only improved gradually, as the new technologies have taken over.

Still another possible explanation is that the improvement in capital's share simply reflects a change in the distribution of rents between workers and firms. Blanchard considers two variations of this idea: a change in the markup of price over marginal cost and a change in wage-setting. He finds the first variation implausible, because the period since the

early 1980s has been characterized by increased, not decreased, competition, especially in continental Europe. He finds it more plausible that as unions have become less powerful in the Continental countries, the wage rate has decreased relative to the marginal product of labor. A variant of this view is that in the early 1980s firms had chronic excess employment, which they gradually shed as unions became weaker. Blanchard's final candidate for the shifts in the relationship between factor prices and factor quantities is biased technological change, as opposed to changes in market structure. In this explanation, the emphasis is on induced bias: Continental firms develop and adopt technologies that use less labor and more capital at a given wage rental ratio.

Blanchard builds a simple model that incorporates these potential explanations of factor prices, quantities, and shares and provides a framework for assessing their importance. In this model, firms are monopolistically competitive, facing a constant elasticity of demand with production functions that exhibit a constant elasticity of substitution. They are forward looking and face costs of adjusting labor intensity. Each firm has one unit of capital, and the capital stock evolves with the entry and exit of firms. Entry and exit depend on the comparison of the value of a going enterprise with the cost of acquiring the capital required to operate it. The relative price of capital itself depends on the rate of capital accumulation, and therefore on the rate of entry of firms. The interest rate, and in steady state the cost of capital, are exogenous and fixed. On the supply side, the elasticity of the wage rate with respect to employment is unitary.

This setup allows Blanchard to analyze the effects of each potential shock—a shift in labor supply, an increase in the markup, and biased technological change. Drawing on a broad range of empirical work, he chooses values of the various parameters of the model that both seem sensible and give a reasonable description of the economy in the model's steady state. Since the elasticity of substitution plays a key role, he tries two values: an elasticity of 1, as suggested by the empirical estimates above, and an elasticity of 2, which gives more scope for changing capital's share with changes in factor prices. The costs of adjustment of labor intensity and the capital stock are crucial to the lags in the system. Blanchard chooses values that imply a mean lag of

4.8 years in the adjustment of factor intensities to their long-run values and an elasticity of investment with respect to the relative price of capital of 1, somewhat higher than most empirical estimates.

There are no major qualitative surprises in the response of the stylized economy to shocks, but the magnitudes and timing are informative. An unexpected and permanent adverse shock to the labor supply implying a 10 percent increase in the real wage at a given level of unemployment initially decreases the profit rate and capital share. Firms shift out of labor over time, leading to a gradual decrease in the ratio of labor to capital, and there is a net exodus of firms. As firms shift out of expensive labor, and as the capital stock declines, the profit rate gradually recovers. In the long run, since the profit rate must return to its initial value, the wage rate also does so, and employment and the capital stock decrease by about 10 percent. With the lags that Blanchard assumes, this pattern of adjustments is not a bad description of events on the Continent, except that even with an elasticity of substitution of 2, the share of capital never rises much above its initial value.

An unexpected and permanent increase in markup, a negative shock to labor demand, also reduces employment over the medium term, but is accompanied by increases in unemployment and decreases in the wage rate. Higher profits, arising from both the greater markup and the depressed wage, induce entry. In the long run, as in the case of the labor supply shock, the wage and profit rates must return to their initial levels, but with less labor per firm, more capital, and more firms. With Blanchard's parameter values, the long-run increase in capital's share is substantial: about 6 percentage points with a unit elasticity of substitution, and near 8 percentage points for an elasticity of 2. Although it takes time to reach the full effects, capital's share increases substantially over a horizon of eight to ten quarters. Unemployment is much more sluggish: after seven years it has only returned about a third of the way. A biased technological shock, which Blanchard models by changing the "share" coefficient in the production function, generates virtually the same dynamics as an increase in the markup, making it difficult to choose between the two in explaining the Continental experience.

Having demonstrated that some combination of labor supply and labor demand shocks can generate the stylized Continental experience, Blanchard asks whether actual estimates of the shocks will do as well.

Focusing on France, he constructs estimates of the shifts in the crucial equations of the model. In the case of labor supply, this involves calculating the difference between the wage in efficiency units and the wage implied by the unemployment rate. Blanchard tries three alternative values for the wage elasticity and adjusts the equation so that the error is zero in 1970. He recognizes that the resulting estimates include substantial specification error, since the true labor supply equation must have richer dynamics and include many more variables than he provides. But he believes that the estimated shocks give a reasonable picture of the distance of the wage from the level, which, in the absence of other shifts, would allow the economy to return to its 1970 unemployment level. All three series show the wage increasing much faster than measured total factor productivity after the early 1970s, peaking relative to productivity in the early 1980s, and subsequently declining. For the intermediate case, with an elasticity of 1, the wage peaks at about 15 percent above its initial level, and the subsequent decline leaves it more than 5 percent above its initial level.

Blanchard sees no mystery about what lies behind these developments: oil price increases, not offset by lower real wage growth, are the source of the initial shift; and the subsequent unemployment itself is the source of institutional changes that have made the labor market more rigid, protecting employed workers against the risk of unemployment and improving the welfare of the unemployed. And he believes that these institutional changes, as well as the marginalization of the long-term unemployed, which reduces their weight in wage determination, are the reasons why the initial shifts have not been fully undone, despite the fact that relative oil prices have returned to 1970s levels and workers have adjusted their expectations to the poor economic performance.

Blanchard's calculations of the shifts in the demand for labor, assumed to be the result of a change in markup, are performed in the same style but are more complicated. In the absence of adjustment costs, the elasticity of demand is implied by the wage and factor proportions, given the production function and profit maximization. He takes account of adjustment costs by assuming that factor demands depend on an exponentially distributed lag of actual wages. He calculates the implied shifts for two elasticities of substitution and three speeds of adjustment. The qualitative results are clear. With lagged

adjustment there is little movement in markup during the 1970s and early 1980s, and all of the parameter values imply a sharp rise in the markup since the mid-1980s. Blanchard notes that in some models, the results are observationally equivalent to assuming that the shifts in labor demand arise from technological shifts biased in favor of capital.

Using these estimates of the shifts in labor demand and supply, and a constructed time series of the user costs of capital, Blanchard applies his model to simulate the French economy over the sample period. He assumes rational expectations, with future shift variables expected to be equal to their current value. The simulations are quite successful. When he allows for shifts in labor supply and the cost of capital but ignores shifts in labor demand, the model does a good job of explaining the increase in unemployment and the behavior of profit share until the mid-1980s, but does not explain the subsequent increase in unemployment and growth in capital's share. The estimated shifts in labor demand, while they do not disturb the fit in the first part of the sample, do help to explain subsequent developments. The importance of the demand shock is evident; despite the fact that the wage rate eventually falls below its initial value, the simulated ratio of labor to capital declines throughout the period, just as it does in the actual economy.

Blanchard carries out the same exercise mechanically for the other countries in his sample. The model does about as well at explaining the evolution of unemployment in Germany and the Netherlands as in France, and performs passably for several other countries. Interestingly, in Germany most of the decrease and later recovery of the capital share appears to be accounted for simply by the response of factor proportions to factor prices. For the entire country sample, the cross-country correlation between predicted and actual changes in unemployment is 0.60 through 1981, and (excluding Canada) 0.65 in the rest of the period. But for a large number of countries, the model overpredicts the increase in the unemployment rate from 1970 to 1981. The worst of these cases are Austria, with a predicted increase of 13 percentage points and an actual increase of only 1 point, and Spain. Blanchard believes that part of the explanation for these particular overpredictions is that the model assumes that these countries were on their steady-state growth paths in 1970, which is unlikely to have been correct. He also thinks that data problems are responsible for the gross overpredictions of Canadian unemployment in the second subperiod of the sample.

Recognizing the important role of the dynamics of labor demand in his simulations, Blanchard conducts panel regressions of factor proportions on a distributed lag of wages, including time and country effects. The results confirm his earlier presumptions. There is evidence of long lags in the response of factor proportions to wage changes, and the implied elasticity of substitution is a little less than 1. Even allowing for this richer lag structure, the time dummies remain highly significant for the Continental countries but are only marginally significant for the Anglo-Saxon countries. Blanchard notes that it would also be desirable to know whether the source of the shift in labor demand is technological bias away from labor or change in the distribution of rents. In principle, it should be possible to detect the difference, since changes in the distribution of rents should not show up as shifts in the production function, whereas changes in technological bias should do so. Unfortunately, Blanchard is unable to distinguish between the two with the available data.

Blanchard's paper leaves many important and intriguing questions. What is the precise source of the labor demand shifts? Is there a causal connection behind the apparent correlation across countries between the magnitudes of the labor supply shifts in the 1970s and the labor demand shifts in the 1980s and 1990s? And is there an integrated explanation for the apparent shift in the demand for skilled and unskilled labor in the Anglo-Saxon countries and the apparent shift from labor to capital on the Continent? But whatever the answers to these questions, his findings do not present an optimistic outlook for unemployment in continental Europe. While it is true that the adverse effects of past labor supply shocks will disappear over time with the entry of new firms and growth in capital, the adjustment is likely to be extremely slow. The Continental countries will face difficult policy choices in the foreseeable future.

THE ECONOMIES of central and eastern Europe and the former Soviet Union (FSU) have had widely different experiences in their transitions from communism to capitalism. Since central planning collapsed, causing dislocations that brought immediate downturns in economic activity, some countries have been far more successful than others in establishing market economies and achieving economic recovery. In many of these countries, the transition has been accompanied by the rise of

unofficial sectors, in which firms avoid official taxes and regulations and whose output generally is not measured in official statistics. In the third article of this volume, Simon Johnson, Daniel Kaufmann, and Andrei Shleifer examine how the interplay of politics and economic incentives influences the growth of unofficial sectors, and how the size of these unofficial sectors affects economic performance.

The authors first provide a simple model of the incentives that lead firms to choose between operating in the official and the unofficial sectors, explaining why one sector grows relative to the other. The government imposes taxes and regulations on firms in the official sector and from its revenues provides public goods, such as law and order, that increase the productivity of those firms. Firms in the unofficial sector neither pay official taxes nor share in these public goods, but instead pay private agencies—“the mafia”—for contract enforcement and protection from thieves. In the model, the government does not directly fight the mafia or restrict the movement of firms into the unofficial sector. Rather, it competes with the mafia through the combination of tax rates and regulations that it imposes and the services that it provides. Under some conditions, the only stable equilibria are those in which all resources locate in one sector, either the official or the unofficial.

The authors recognize that some firms choose to operate in one or the other sector for reasons outside this simplest model. For example, firms dealing extensively with the state will want to be in the official sector and firms infringing on patents will want to be in the unofficial sector. Allowing for such differences among firms explains how official and unofficial sectors may coexist, with individual firms deciding where to operate on the basis of which sector offers them the most attractive combination of tax rates, regulation, and public goods. Adding the plausible assumption that the official sector is potentially more productive at generating public goods, their model implies that economies with small unofficial sectors will have superior overall performance. Allowing for elastic labor supply strengthens this implication, since bad combinations of official taxes and public goods not only reallocate resources to the unofficial sector, but reduce real wages and the overall labor supply.

Johnson, Kaufmann, and Shleifer turn to cross-section analysis of transition economies for empirical support of their ideas. They construct

relevant data from a number of sources. As output in the unofficial sector is not captured in officially measured GDP, they estimate total GDP from electricity consumption and calculate the output of the unofficial sector as the difference between total GDP and measured GDP. In their calculations, they use existing estimates of the marginal output elasticity of energy consumption for three subsets of transition economies: 0.9 for the central and eastern European countries, 1.0 for the Baltic countries, and 1.15 for the rest of the former Soviet Union. For the seventeen countries for which data are available, they apply these elasticities to the growth of energy consumption to estimate the growth rates of total output. And they use existing estimates of the share of the unofficial economy in each country in 1989 (which they take as the prereform base year) to calculate total GDP levels through 1995.

These calculations reveal substantial variation in the size of the unofficial sectors in different transition economies, as well as important differences in both levels and growth rates of total GDP compared with official GDP. Between 1989 and 1995, the relative size of the unofficial sector changes only slightly in the average eastern European country, rising from 17 to 19 percent of total GDP. By contrast, the average share rises from 12 percent to 34 percent in the countries of the former Soviet Union. As a consequence, total GDP growth is little different from official GDP growth in the eastern European economies but is substantially greater than official GDP growth for most FSU countries. For Russia in 1995, total GDP is 74 percent of its 1989 level, while official GDP is only 49 percent of its 1989 level.

To quantify the relative costs and benefits of operating in the official economy, the authors turn to an array of indicators from outside sources. Each falls into one of two categories. The first includes measures of liberalization, privatization, deregulation, corruption, and tax fairness. The second measures characteristics of the legal environment—legal safeguards for investment, the rule of law, and the extensiveness and effectiveness of legal systems in protecting investment—the public goods most relevant to their model. Many of these measures are subjective and difficult to quantify. However, the authors show that their analysis is quite robust over the broad range of indicators that they use. Cross-country regressions, from which the authors omit Belarus and Uzbekistan on the grounds that their repressive governments prevent mobility into the unofficial sector, show that liberalization, pri-

vatization, fairer taxation, and fewer regulations, as well as a better legal environment, are all associated with a smaller unofficial economy. A dummy variable indicates that the former Soviet states have larger unofficial sectors than these variables would predict.

The authors next examine how the change in output between 1989 and 1995 is related to their indicators. In univariate cross-country regressions explaining the change in official output, each indicator of state control and the legal environment has a large and significant coefficient. Both the FSU dummy and the initial (first reform year) change in output are also significant when either is added to the regressions. Thus the same factors that are positively correlated with the size of the official sector are positively correlated with growth in official GDP. The results of parallel regressions explaining total GDP are quite different. The coefficients on the indicators are smaller and are usually insignificant when either the FSU dummy or initial output change is included. This is consistent with resources being equally productive in both sectors. The state control and legal environment measures predict the movement of resources into the official sector and the growth in output in that sector, but have no correlation with total output. However, the results are not strong and do not rule out the possibility that the official sector is more efficient than the unofficial sector in these economies.

Finally, the authors explore the correlations between macroeconomic stabilization and their measures of official, unofficial, and total output. Regressions indicate that large unofficial sectors are associated with larger deficits and higher inflation. They also show that higher official output is associated with smaller deficits and lower inflation. However, deficits have no relation to their measure of total output, and the effect of inflation on total output is modest and usually insignificant.

Johnson, Kaufmann, and Shleifer turn from their statistical results to discuss the characteristics of particular transition economies and draw inferences about their prospects and ways to improve them. They distinguish three broad types of economy. The first includes those that are politically repressed, with distortionary taxes, poor provision of public goods, and yet small unofficial economies. Belarus and Uzbekistan are in this group. The second includes those with relatively fair taxes and regulation, high tax revenues, and adequate provision of public goods. The countries of central and eastern Europe dominate this group. The

third group includes those with major tax distortions, onerous regulation, low tax revenues and poor provision of public goods. The countries of the FSU dominate this group, and they generally have larger unofficial sectors and have experienced slower growth than the eastern European nations. The authors share the widely held belief that the nations of eastern Europe are on their way to eventual convergence with the economies of western Europe. The policy challenge for the countries of the former Soviet Union is how to build institutions that support a large official market economy. They see this as the way to avoid a bad equilibrium of the sort that arises in their model when the official sector is unattractive to firms.

Although foreign assistance has helped Russia and some other transition economies to achieve macroeconomic stability, the authors do not see this as the key to the further reforms that are needed. And they are not optimistic about the prospects of countries whose ruling elites are under no pressure to reform—such as Ukraine, Tajikistan, and Turkmenistan, as well as Belarus and Uzbekistan, where political repression stands in the way of the development of market economies. They see better prospects for Georgia and Azerbaijan, which have achieved some political stability, and especially for Russia, where there appears to be a growing consensus on the need for institutional reforms.

In Russia, the authors believe, reforms must focus on providing law and order, reducing marginal tax rates, simplifying tax rules, and revising the federal system so as to create incentives for more effective local governance. They regard such measures as easy to prescribe but politically difficult to achieve. Although the government of Boris Yeltsin seems committed to reform, Johnson, Kaufmann, and Shleifer note that there is little agreement between it and the parliament about specifics, and they see no assurance that any reforms that are instituted will be as market-friendly as those implemented in eastern Europe. But they also observe that considerable improvement is possible even without institutional perfection and they are cautiously optimistic about Russia's economic and political future.

IT SEEMS VIRTUALLY certain that the initial membership of the European Economic and Monetary Union (EMU) will be decided in the spring of 1998 and EMU will be launched at the start of 1999. Its creation will be an historic step toward the economic integration of

sovereign nations and, its proponents believe, it will contribute to advancing prosperity and political unity across Europe. Yet the prospects for economic performance under EMU are viewed skeptically by many economists, and the enthusiasm for EMU among politicians is not shared by the voters in most European countries. In the fourth paper of this volume, Maurice Obstfeld offers a critical review of the case for monetary union in Europe. He evaluates the arguments for and against monetary union, including its likely impact on economic performance, and discusses the still unsettled issue of the scope for national fiscal policy by EMU members.

German chancellor Helmut Kohl and other political leaders have stressed the importance of monetary union for furthering political unity among the nations of Europe. Obstfeld traces the origins of the desire for political unity supported by economic integration back to the Marshall Plan, which was announced in June 1947, and to several institutions that were established over the following decade. These were the Organisation for European Economic Co-operation—subsequently, the Organisation for Economic Co-operation and Development—which promoted the liberalization of trade and current account payments; the European Payments Union, which provided a clearinghouse for trade within Europe; and the European Coal and Steel Community, which created a common market in basic materials that resolved historical conflicts between Germany and France over resources along their common border. In these early postwar years, Germany's prewar sovereignty was gradually restored as it reintegrated with the rest of Europe.

In 1957 the Treaty of Rome established the European Economic Community (EEC), which has subsequently expanded to the present fifteen-member European Union (EU), with the broad purpose of furthering economic cooperation and integration. The EEC made the first attempts to coordinate exchange rates among the nations of Europe and, though repeatedly frustrated by events, in 1979 established the European Monetary System (EMS), which became the immediate precursor to EMU. In Obstfeld's view, the EMS represented the first instance of true coordination because it made exchange rate alignments a matter of group discussion and decision. It led to the removal of capital controls, which, in turn, required more cooperative intervention among members and tied monetary policies more closely to exchange rate targets.

In that environment, and with Europe recovering from the recession

of the early 1980s, the drive to EMU began in the late 1980s with the Delors Report, which set out both the goal of a single currency and a process for reaching that goal. The process was made highly specific in the Maastricht treaty of 1991, which detailed the nature of the new European Central Bank (ECB), set the criteria for membership by individual nations, outlined a proposed Stabilization Plan that would govern fiscal policy in the EMU, and established a timetable for completing the union. The next steps are scheduled for spring 1998, when the initial membership will be decided, the stabilization rules will be established, the leadership of the ECB will be chosen and its relationship to governments finalized, and the conversion rates of member currencies into euro will be set.

The choice of nations for the first wave of membership has been contentious, especially as Germany has resisted the inclusion of Italy. Obstfeld notes that the decisions will have to adhere to objective criteria if they are to gain wide acceptance, and that those criteria will also provide the precedent for the admission of new members in the future. Since all potential members are sure to meet the criteria for interest rate and inflation rate convergence, deficit and debt ratios are the two potential grounds for their rejection. Although Italy is vulnerable on its projected deficit-to-GDP ratio, so are France and Germany, and thus Obstfeld finds it unlikely that Italy can be excluded from the first-wave countries. He warns, however, that there is still a small chance that Germany's Constitutional Court could prevent German entry even after the EU has made its decision, on the grounds that a loose interpretation of the deficit criterion violates the German constitution.

Obstfeld evaluates the arguments in favor of monetary union for Europe. He judges that the saving in transactions costs is meaningful though modest, and that the efficiency gains to trade and investment from avoiding short-term exchange rate volatility are minor. He also reasons that EMU would reduce the risk that exchange rate volatility disrupt Europe's drive to deeper market integration. Finally, he credits the prospect of EMU with contributing to the elimination of inflation in several countries that aspire to membership and facilitating desirable economic and institutional reforms. He sees the single currency and the prospect that the ECB will keep inflation in check as cementing these gains.

On the other side of the ledger, Obstfeld carefully examines the

stabilization problems that individual nations may confront when they give up exchange rate and monetary autonomy. If economic shocks to supply or demand were always common to all EMU member nations, having a common currency would be little different from having individual currencies. But with asymmetric shocks, a common monetary policy will compromise the needs of individual nations. As Obstfeld notes, if a country falls into recession while growth remains strong elsewhere, it cannot depreciate or lower interest rates to spur demand. If its fiscal policy is constrained by the EMU stabilization rules, its scope for reacting to shocks is further reduced. And the ECB cannot respond to shocks in individual nations, because its monetary policy is geared to price stability in the union as a whole. Under these circumstances, the adjustment of an individual economy could be painfully slow, and the country could suffer protracted periods of high unemployment relative to the EMU average.

How serious such problems will be will depend on the prevalence of asymmetric shocks and on the degree to which other mechanisms, such as labor mobility and wage and price flexibility, can accomplish the needed adjustment. Obstfeld finds that the empirical research on economic shocks in Europe has reached no widely accepted verdict, and he notes that in any case, history may provide little guidance, because it was generated under very different policy regimes. In the past, some shocks may have originated from changes in other European exchange rates, as will no longer be possible among EMU members, or from the actions of labor unions or governments, whose behavior may be different under the EMU regime. But he believes that there are sure to be some asymmetric shocks, and finds little comfort in the strength of the adjustment mechanisms that will remain under EMU. Labor mobility is extremely limited among European countries and is unlikely to increase. And wage and price rigidity is a long-standing feature of European economies. While some are optimistic that wage-price flexibility will increase once the possibility of currency realignment is gone, Obstfeld is skeptical. He notes that rigidities have not eased in the face of persistent regional disparities in unemployment within countries, including the marked disparities between eastern and western Germany since reunification.

Obstfeld provides an extensive discussion of fiscal constraints, on

which final decisions will be made in spring 1998. In its strongest form, an EMU limit on the ratio of a nation's deficit to its GDP could eliminate even the automatic stabilizers of a neutral budget policy, forcing nations to cut spending or raise taxes during recessions. And if the EMU budget rules did permit automatic stabilizers, they could still prevent the use of active fiscal policy in an environment where other stabilization measures were unavailable. Alongside these stabilization concerns, Obstfeld discusses several arguments that have been advanced in favor of strong fiscal restraints. He notes that while market discipline on individual nations' debt issuance should in principle provide fiscal restraint, direct constraints, if effective, would be more predictable and have desirable effects. Most obvious, they would frustrate the political tendency of some countries to run chronic large deficits. While presently this is a problem only for the country with the deficit, some believe that under EMU this tendency could affect other member nations, either by undermining the anti-inflation commitment of monetary policy, despite the charge of the ECB, or by requiring bailouts in the event that a nation's debt became unmarketable. Other possible effects of fiscal constraints are less direct. In a floating rate system, countries may be deterred from fiscal expansion by the fear of appreciating their currencies, but under EMU this brake on fiscal deficits will be gone. Also, some argue that fiscal restraints would force countries to scale back the overgenerous social benefit programs that now impede wage flexibility and mobility in the labor market.

Obstfeld doubts that fiscal restraints imposed under the EMU stabilization pact could help to bring about such useful changes in budget priorities, and is even skeptical about whether the deficit reductions that have been made in order to qualify for EMU membership will be maintained. He cites recent research showing that some forms of deficit reduction tend to be durable while other forms—in particular, cuts in investment outlays or increases in taxes—are frequently reversed. Examining the steps that the potential member nations have taken, he concludes that several of these countries will confront difficult budget decisions if they are to stay within the presently anticipated deficit limits once EMU is under way. If economies grow slowly in the first years of EMU, he predicts that members will quarrel over the implementation of the stability pact and voters will resent EMU for budgetary pressures

that threaten popular social programs. With such problems in view, the particulars of the stability pact will be hotly debated in spring 1998, before a final agreement is reached.

Not all European countries will be in the first wave of EMU entrants. Obstfeld examines the options open to the outsiders. A new exchange rate mechanism, ERM2, will provide a vehicle for pegging to the euro, as a way for those who desire entry at a later date to meet the convergence criteria. ERM2 will thus also discourage big shifts in competitiveness between outsiders and EMU members. However, while the rules relating ERM2 and EMU provide for intervention to keep currencies within a band around the euro, they can be suspended in a crisis, which reduces the attractiveness of joining the new exchange rate mechanism in the first place. Obstfeld notes that outsiders have other options. They may choose the Anglo-Swedish model of inflation targeting as an alternative to pegging to the euro. That raises the issue of whether some of EMU's "ins" may choose to become "outs" because of a perception that EMU is impeding their economic performance. There are no provisions for seceding, and a nation that chose to do so would incur unpredictable diplomatic and financial costs, but Obstfeld does not rule out the possibility.

The worry that stabilization of national economies will be undermined by EMU is questioned at a fundamental level by some analysts. They reason that little is lost in going to a single currency because, with Europe's rigid real wages, depreciating a nominal exchange rate merely changes all prices in proportion, adding to inflation without any effect on real outcomes. Obstfeld challenges this model by noting that even moderate degrees of *nominal* wage and price rigidity, which he believes characterize actual market economies, make revaluation a useful option. He demonstrates the effects of such nominal rigidities, using sticky price models of adjustment for an open economy. The key parameters are the degree of indexing of nominal wages to prices and the sensitivity of the expected real wage to unemployment. In the simplest case, when wage indexing is incomplete, nominal devaluation immediately offsets the unemployment effect of a negative employment shock, although it does not avoid deterioration in the terms of trade. In more elaborate models, in which unions resist the decline in real wages, adjustment is more gradual and the economy's path depends on how unemployment is related to real wages and on how real wage aspirations

adjust to unemployment. Obstfeld presents regression estimates attempting to characterize actual European adjustment experience, but finds no useful generalizations about the key parameters. While acknowledging that history could be a poor guide in a new single currency regime, based on all the available evidence he judges that exchange rate flexibility can provide important help in adjusting to shocks.

Obstfeld concludes that EMU faces significant hurdles. The broad membership that now seems likely will be vulnerable to more disputes and more asymmetric shocks than a narrow union would have been. He notes that there are still important matters to settle, such as the composition of the ECB's governing body and the terms of the stabilization agreement. While the case for EMU is both political and economic, he suggests that the project will rise or fall on the basis of its economic results. In particular, if the EU countries that do not join prosper relative to those that form its initial membership, EMU could fall apart, with consequences that are hard to predict. However, if EMU succeeds economically, he believes that it will advance the cause of European unity and generate social and political benefits, as its proponents claim.

The two formal commentators on Obstfeld's paper express stronger reservations about EMU. Richard Cooper endorses the concept of a single currency for Europe, but argues that the arrangements for stabilization under EMU are inadequate. He reasons that the fiscal tightening that is currently being imposed is counterproductive in some countries and the fiscal rules contemplated for the future monetary union are too inflexible. He is even more concerned that the new European central bank would be unaccountable to any government, unlike the U.S. and German central banks, which, while meaningfully independent from political pressure, are nonetheless part of a broader political process and ultimately accountable to their legislatures. Alberto Alesina is highly skeptical of economic prospects under EMU. He reasons that Europe is far from an optimal currency area and questions whether monetary union would facilitate useful institutional reforms in member nations. He believes that labor unions and other politically important elements would resist the pressures for change that are likely to arise, aggravating social tensions and political conflicts both within and across countries. On balance, he regards EMU as a gamble not worth taking.