Editors' Summary

THIS ISSUE of *Brookings Papers on Economic Activity* contains papers and discussions presented at the fiftieth conference of the Brookings Panel on Economic Activity, which was held in Washington, D.C., on September 13 and 14, 1990. Four major papers explore hyperinflation, the cyclical movements of U.S. workers into and out of employment, whether the stock market has noise effects on business investment, and plans and prospects for European monetary union. Two shorter reports discuss privatizing property in Eastern Europe and recent U.S. trade performance.

HYPERINFLATION is a traumatic event in any society, damaging to political institutions and real incomes and dramatically redistributing income and wealth. While hyperinflations have been historically associated with wars and revolutions, in recent years they have occurred under a wider range of circumstances. In the first article of this issue, Rudiger Dornbusch, Federico Sturzenegger, and Holger Wolf model the hyperinflation process, incorporating observations from many inflationary episodes. The authors identify the conditions that lead to hyperinflations and suggest ways to stabilize the price level once a hyperinflation is under way.

The authors observe that hyperinflations, which they define as inflation rates of more than 1,000 percent per year, are unusual events, but not so rare as to be mere curiosities. Thirty-five countries experienced annual inflation rates exceeding 20 percent in either 1988 or 1989; of these, nine experienced rates above 100 percent, but only five above 1,000 percent. Clearly rapid inflation does not always accelerate into hyperinflation. How a country reacts to a shock depends, in part, on its inflation history. The authors note that a country with chronically high inflation is susceptible to accelerating inflation because labor and financial markets are likely to be already indexed; in that case, a price shock does not destroy real balances or cut real wages, and a wage-price spiral is likely to follow an inflationary shock. In a country that has experienced only moderate inflation, the public is likely to be caught by surprise and financial assets and wages will not be indexed to protect wealth and income. But as the public reacts, there may be a flight from money into goods and from domestic into foreign assets, causing an escalation of inflation and precipitating an exchange rate crisis.

The authors' view of inflation differs in several important ways from the view expressed in the classic hyperinflation model identified with Phillip Cagan. In particular, the authors treat many more aspects of economic behavior as endogenous to the hyperinflation process. Budget deficits and money creation are determined, in part, by the rate of inflation. Financial institutions adapt to inflation by developing new financial products, thus altering the role of money in the economy and the government's ability to control it. Pricing rules, such as the intervals of wage and price setting, change with the onset of rapid inflation and may accelerate the price spiral. Real exchange rates are not constant and their adjustment can contribute to hyperinflation. In addition, the authors do not model the budget and the monetary policies seen in a hyperinflation as optimal policy choices from a rational decision process, but rather as policy mistakes that result from a chaotic policy process.

The authors construct a simulation model incorporating some of these ideas. In the model, the frequency with which prices are changed, the desired holdings of money, and the size of the money supply all depend on the rate of inflation; as these features change, they slow down or speed up inflation. The simulations show how a disturbance to the budget can lead to an explosive path in prices or can be contained, depending on how quickly behavior responds to inflation, and they show how relative prices and the overall inflation rate can be highly variable. The simulations show that large effects can result from seemingly small shocks. In the model there are costs to adjusting prices, so prices do not adjust continuously to demand. As a result, a continuing small deficit can eventually trigger dramatic price adjustments; a period of apparent price tranquility can, in a short time, give way to hyperinflation.

When the model allows for foreign assets and a variable real exchange rate, the foreign sector can be a source of shocks and can also perpetuate shocks originating elsewhere. With explicit or implicit wage indexation, currency depreciation almost mechanically adds to inflation. And with borrowing in foreign currencies, which protects foreign lenders from domestic inflation, depreciation raises real budget expenditures and budget deficits. With flexible exchange rates, forward-looking markets may anticipate growing budget deficits or other sources of inflation, so that currency depreciation can accelerate inflation even ahead of the inflationary shock. Using statistical tests for several high inflation countries, the authors show that such effects from variable real exchange rates can be important causes of both budget deficits and inflation.

Having discussed how hyperinflations emerge, the authors turn to how best to eliminate them once they are under way. They first review three stabilization programs of the 1980s, two of which succeeded and one of which did not. Israel and Bolivia were the two successes: Argentina, the failure. In Israel, the budget deficit was cut dramatically by reducing public investment and subsidies and by raising taxes; an incomes policy was introduced in the form of wage agreements among labor, business, and government; the exchange rate was adjusted and kept fixed for over a year; and financial backing from the United States was made available as needed. For the first few years, at least, the program was a clear success: inflation slowed abruptly and real growth resumed. In Bolivia, where hyperinflation took hold when the terms of trade deteriorated and the cost of external debt service rose sharply, the key step in stabilization was a suspension of external debt payments. Together with some aid from foreign sources, this move virtually eliminated the budget deficit and the growth of the money supply was brought under control. As in Israel, inflation slowed abruptly and real growth resumed.

By contrast, Argentina has not succeeded in stabilizing its inflation rate over the past decade. A succession of plans have all relied primarily on incomes policy and exchange rate policy without any decisive change in the government's deficits. Not only has inflation sporadically worsened, but real wages and real income have declined over the period.

The authors move from these particular episodes to a more general analysis of strategies for stabilization. One issue is the timing of a stabilization program with its generally unpopular measures. Some have argued that stabilization efforts should be delayed until hyperinflation has reached extreme levels, on the grounds that first, relative prices would be then be well aligned because they would be governed by foreign prices, and second, the public willingness to accept drastic restraints would be greater the more extreme the inflation. But the authors find this prescription for delay faulty. They are skeptical that sustained hyperinflation will align relative prices because most prices are not for internationally traded goods and services; and they see hyperinflation as harmful to the basic institutions of the economy required for efficient production and political stability.

The authors argue that, in many cases, heterodox stabilization which combines fiscal and monetary restraints with an incomes policy can be an effective way to stabilize. They believe that an incomes policy can help realign contracts for debt or for income payments such as rent, thus avoiding the bankruptcies that would result from sudden, unexpected changes in inflation rates. It can help bring relative prices into line and so help avoid the leapfrogging that is likely to occur in a world of uncertain future inflation. And it can prevent the erosion of government revenue from continued high inflation, and thus can help to bring about the needed fiscal balance. They warn, however, that incomes policy cannot substitute for changing the policy regime to one of smaller deficits and lower rates of money creation.

Where incomes policies have been misused in the past, in attempts to avoid rather than to support difficult fiscal and monetary measures, they are not likely to be effective and might even damage the credibility of an anti-inflation program. The authors suggest that credibility is best served by pervasive fiscal reforms that establish a broad-based tax system with moderate tax rates and strict enforcement procedures. In support of this view, they contrast the success of Mexico, where tax auditing has established an infrastructure of lasting fiscal stability, with the failures of Argentina, where very few people pay income taxes. With a credible policy of fiscal restraint, the authors believe an incomes policy can help the disinflation process.

The authors pay particular attention to the current stabilization efforts in Brazil and Argentina. They note that in both countries the inertia of inflation is so great, that even budget surpluses and deep recession have not been enough to bring down the inflation rate. The authors believe the incomes policy option would not work because it has been misused already, and reason that further tightening of already restrictive fiscal and monetary policies risks a deeper recession and political rejection. As a radical alternative, they suggest that Argentina or Brazil could adopt the dollar as a national currency. Since the dollar is already an important part of asset-holding in Argentina, they reason that the transition to full dollarization would be relatively easy there. FOR AS LONG as employment and labor force statistics have been available, movements in unemployment have been a central concern of policymakers, both because of the human suffering represented by much of the joblessness we observe and because the tightness of labor markets is an important indicator of inflationary pressures. However, economists do not fully understand the substantial variation observed in unemployment over time and across demographic groups and countries. While it is generally agreed that cyclical fluctuations are a major component of total variations in unemployment, there is less agreement about the nature of that unemployment. The attempt to understand labor market performance has led many macroeconomists to investigate structural features of the labor market hidden in the aggregate unemployment rate. In the second paper of this volume, Olivier Blanchard and Peter Diamond attempt to advance our understanding of labor market dynamics by examining the gross flows of U.S. workers into and out of employment and gross job creation and destruction.

The authors rely primarily on the Current Population Survey (CPS), which gives monthly gross flows of workers between employment, unemployment, and "not in the labor force." They also use two data sets collected from firms rather than workers. One is the Bureau of Labor Statistics's (BLS) series on monthly gross flows into and out of manufacturing employment, and the other is a series on quarterly net changes in employment at the establishment level put together by Steve Davis and John Haltiwanger from the Longitudinal Research Data file.

In order to analyze the cyclical behavior of the labor market, the authors utilize the statistical framework they developed in an earlier BPEA paper (*BPEA*, 1:1989). In particular they make use of a vector autoregression to estimate the effect of an aggregate activity shock on the stock of employment, unemployment, and vacancies. These results are then used to explain the gross flows of workers between employment states, and to trace the effect of a shock in aggregate activity on the time path of the various gross flows.

The first important fact the authors uncover in the CPS data is that cyclical fluctuations in the flow of workers out of employment are larger than the fluctuations in the flow into employment. For example, one year after a one-standard-deviation recessionary shock, the gross flow out of employment is estimated to be 160,000 workers more than along a reference path, while the number of workers moving into employment is down by 92,000. Changes in both the flow out of and the flow into employment contribute substantially to the total decline in employment, though the change in the flow out is greater. Two years after the shock the differences between the relative contributions are more dramatic: the flow out of employment is up by 103,000 whereas the flow into employment is down by only 32,000. The authors also report that the cyclical changes in the gross flows into and out of employment in manufacturing using the BLS data are more symmetric than those in the economywide CPS data.

The authors think of the flows out of employment as the sum of job destruction and quits and the flows into employment as the sum of job creation and the replacing of quits. Because quits and their replacements are procyclical—that is, they decline when employment declines—the asymmetry between the cyclical fluctuations in the flow out of employment and the flow into employment found in the CPS data mean that reduced employment in recessions results more from high rates of job destruction than from low rates of job creation. Similarly, the salient feature of booms is low job destruction rather than high job creation. This finding is consistent with the data on gross flows in manufacturing and the Davis-Haltiwanger data, which come closer to measuring the actual creation and destruction of jobs.

The authors observe that this result does not square with a Schumpeterian view of cyclical fluctuations, in which booms are times when innovations and resulting job creation are high. They discuss other potential explanations of their finding. One is that recessions may be times when firms are forced to shut down, or find it optimal to terminate unprofitable product lines, lines that are not then reopened when good times return. But the authors are skeptical that firms taking advantage of periods of low productivity to reallocate activity in this way can be a major factor in explaining the phenomena, and note that Davis and Haltiwanger have shown that the proportion of job destruction due to plant closings actually decreases slightly in recessions. Blanchard and Diamond speculate that firms tend to bunch firings because of a fixed cost in firing any number of workers, or more generally that recessions are a time of cleaning up, but recognize that any such ideas need to be examined with other types of data.

The authors extend the method of estimation and simulation to predict the effect of an aggregate activity shock on each of the six CPS flows between employment (E), unemployment (U), and not in the labor force (N). This reveals a second notable characteristic of labor market dynamics: sharp differences in the cyclical behavior of the flows between E and U on the one hand and E and N on the other. These differences suggest it may be more important than some observers thought to distinguish between being unemployed and not in the labor force. They find that the flow from E to U increases in a recession while the flow from E to V decreases. Similarly, the U to E flow increases in a recession while the N to E flow decreases. The fact that the flow from unemployment to employment increases in a recession appears anomalous until the authors compute "hazard rates," representing the probability of going from one pool to another. As expected, in a recession the probability of any one unemployed individual moving to employment decreases, albeit by a small amount. The U to E flow increases despite this lower probability because the number of unemployed is so much greater.

Disaggregating the flow data, the authors find clear cyclical differences among young, mature, and older workers, and between males and females. Although they comprise less than 7 percent of the male work force, the response of 16-19 year olds accounts for half of the decrease in the flows of men from E to N and N to E during recessions. Whereas the decrease in the flow from E to N is primarily a reflection of a decrease in the number of employed individuals, the decrease in the flow from Nto E reflects a sharp decline in the probability of a young male getting a job. Young workers also have the highest increase in the E to U hazard rate and the largest decrease in the U to E flow. Cyclical movements in the flows of mature workers (aged 20 to 59) are concentrated in the flows between E and U; in response to a negative shock, the E to U hazard rate increases and the U to E hazard rate decreases. For older males, the probability of finding a job when unemployed drops sharply in a recession, just as it does for younger males. The cyclical behavior of employment flows among females resembles that of males, although the differences among the various age groups is less pronounced.

These differences in the cyclical labor market experience of men and women and of workers of different ages lead the authors to explore a simple model of the labor market in which jobs are stochastically created and destroyed, and in which there are two types of workers, "primary" and "secondary." Primary workers do not quit and when laid off go to unemployment. Secondary workers leave employment either by layoff or by guitting, and when they do leave, they leave the labor force. The two types of workers have identical search behavior and both are acceptable to fill a vacancy. However, given a choice, firms prefer primary to secondary workers. The authors simulate this model, calibrating the parameters to give sensible steady-state values of the variables and using an empirically estimated matching function that relates the flow of hires to the stocks of nonemployed workers and vacancies. According to this model, job destruction increases in a recession and both types of workers experience increased layoffs. But because of ranked hiring, nonemployed secondary workers experience a much larger decline in the chance of getting a job; and because of high quit rates and lower accession rates, the pool of unemployed secondary workers rises relative to the pool of unemployed primary workers during a recession. The authors find the model replicates the signs of the estimated responses of flows between E, U, and N to a negative shock, and even comes reasonably close to replicating the quantitative flows between E and U. However, it generates a much larger decrease in the N to E flow and a smaller decrease in the E to N flow than actually occurs, suggesting that the model needs to be adapted to incorporate a cyclically variable quit rate.

Although the model is too simple to capture all the important characteristics of the labor market, the authors believe it is a useful beginning. In addition to allowing for variable quit behavior, they suggest the model could be made more realistic by adding movements between unemployed and not in the labor force and allowing for a transition from secondary to primary worker status. They also believe the model can be adapted to bring out the implications of cyclical labor market dynamics for wage behavior.

IN GENERAL, economists believe that competitive markets provide appropriate signals for the allocation of resources. The high volatility of stock prices, however, has long led some observers to question whether the stock market efficiently allocates risk and whether it can accurately guide business investment in the aggregate and across firms. Recent events and research have heightened this skepticism. A number of economists have provided evidence that stock prices move in ways that are not driven solely by news about fundamentals relevant to the efficient allocation of capital. Such excess volatility or "noise" in stock prices would obviously affect the welfare of stockholders; whether it would affect investment in the real economy is less clear. In the third paper of this volume, Randall Morck, Andrei Shleifer, and Robert Vishny examine whether stock market noise significantly influences investment, leading to an inefficient allocation of savings among alternative uses.

The authors briefly summarize some of the recent research which suggests that financial markets may be inefficient and that there is in fact some potentially damaging noise in stock prices. The findings of several types of empirical studies raise several possibilities: stock price movements are greater than can be explained by the rational revision of expectations about economic fundamentals that underlie stock prices; stock returns exhibit mean reversion and stock prices may overreact to events; systematic movement of the discounts on closed-end funds occurs, even though the assets owned by the funds can be accurately valued; survey results show little evidence that investors changed their beliefs about fundamentals at the time of the 1987 crash; and insiders, presumably with good information about fundamentals, were able to make significant money by betting against the market during the crash.

Stock price movements not explained by fundamentals are, by default, said to result from "investor sentiment." The empirical evidence on the potential importance of investor sentiment has been complemented by a range of theoretical arguments explaining why arbitrage may not eliminate the influence of sentiment on stock prices. These arguments are based on the fact that arbitrage in stocks is risky. Because of this risk, arbitrageurs limit the size of their trades. The authors note that while these arguments are strongest when investor sentiment affects the entire market and the associated risks cannot be diversified, if arbitrage is a costly activity or arbitrage funds are scarce, firm-specific sentiment may affect individual stock prices as well.

It is well established empirically that stock returns and investment are significantly correlated, both in the aggregate and at the firm level. But investor sentiment or market noise, which may distort firms' investment decisions, are only one possible source of that correlation. The authors present four views that could account for the simple correlation, each with different implications about the contamination of investment by noise. The first view is that the stock market is a sideshow to the real economy, ignored by managers in making their investment decisions, presumably because they know more than the public. Stock prices contain information about a firm's prospects, but not as much information as its managers have. In this view, market noise has no effect on the allocation of investment and, if econometricians knew and used everything the manager knows, they would find the stock market provides no added explanatory power in investment equations. The second view of the market, called the "active informant" view, is the antithesis of the first. It says stock prices predict investment precisely because they convey information that managers use in making investment decisions. If managers cannot distinguish the useful information contained in stock prices from the noise, the noise will contaminate their decisions. How much will depend on the degree to which managers use the market as an independent source of information. The authors suggest that this "false signals" hypothesis is less likely to apply to individual stock returns than to industry returns or to the market as a whole, since managers will depend on the market least for information specific to the firm and most heavily for relevant information about the entire economy.

These first two hypotheses relate to the information content of stock market prices. The third view centers on financing and assigns the market a more active role in raising capital for investment. The stock market's valuation is a key ingredient in the firm's cost of capital and would be an appropriate guide to investment decisions as long as markets efficiently process all available information. Even in the case where a firm disagrees with the market's evaluation of its investments, the market will affect the firm's investment decisions if it is dependent on the market for finance or if its market valuation affects the terms on which it can borrow. In the financing view, the key channel of the stock market's influence is through the issuance of new equity and debt securities. The market should be especially important for small or start-up firms, and there should be considerable room for investor sentiment to distort investment.

The fourth and final view is based on market pressure. In it the market exerts pressure on managers, even without conveying information to managers or affecting the cost of finance, because the chances that a firm will be taken over, and the manager will lose his job, may depend on the stock market's valuation of the firm. In turn, this may distort investment. For example, if the market is myopic, valuing the near term too highly, a manager may avoid long-term investments, even if they have positive net present value, for fear of being fired or taken over.

To judge the validity of these views, and to test for the influence of

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stock prices more generally, the authors compare the performance of several investment equations in which stock returns compete with various fundamental and financing variables. Their main empirical results are based on the analysis of panel data for a sample of COMPU-STAT firms. They use the growth of investment spending for nonoverlapping three-year periods as the dependent variable, arguing that shorter horizons may miss the effect of the stock market and other variables because of the lagged response of investment to such stimuli. Because some of the cross-firm variation in stock returns may be related to systematic risk and should not influence investment, they use excess stock return, estimated as the residual from a capital asset pricing model equation, as the stock market variable. Thus, the stock return used in the regressions is the total return less that part of the return estimated to be a firm-specific risk premium.

When stock return is the only variable used to explain investment growth, its coefficient estimate is highly significant and quantitatively important: a 10 percent excess return on a firm's stock predicts a 5.3 percent increase in annual investment. But when the authors include fundamental variables, the contribution that stock returns make to an explanation of investment shrinks dramatically. Two fundamentals, sales and cash flow growth, alone explain 20.8 percent of the variance in investment. When excess stock returns are added to an equation with these fundamentals included the variance explained (R^2) increases only 3.8 percentage points. The authors regard the incremental R^2 from adding excess returns to be an upper bound on how much sentiment can affect investment since managers undoubtedly have better measures of fundamentals than the two variables the authors have included. Nonetheless, although the coefficient on stock returns is lower than in the equation without fundamentals, it is still highly significant and indicates that a 10 percent excess return for a firm is associated with 3 percent higher investment.

The authors turn to the possible role of stock prices operating through financing. They find that indicators of the volume of both stock and bond financing by themselves are positively correlated with investment, though they raise the R^2 by only 1.6 percentage points when added to an equation with fundamentals alone. When stock returns are added to an equation containing both fundamentals and financing variables, the R^2 increases by 3.6 percentage points.

To further explore the possible role of financing, the authors examine whether the stock market and investor sentiment may affect financing itself. Using logit models they show that the probability of a substantial issue of new equity or debt increases with abnormal stock returns. However, the effect is modest.

One possible reason that relative stock returns do not appear to play a role much beyond forecasting fundamentals is that most developments are marketwide. Fads and fashions that affect the whole market and aggregate fundamentals such as the expected growth in GNP might be important to firms' investment decisions without showing up in crosssection analysis. The authors examine this possibility by running aggregate investment equations that are similar to those used in the crosssection study. The equations explain fixed nonresidential investment by using cash flow and personal consumption expenditures as fundamentals, aggregate equity issues as a finance variable, and a value-weighted aggregate stock return. In the aggregate regression, one- and two-year stock returns by themselves explain 33 percent of the variation in investment. Fundamentals alone explain 81 percent. When stock returns are added to the fundamentals equation for a sample period running back to 1935, the R^2 increases by only 1.8 percent. However, for the sample period 1952-88, closer to that used in the cross-section study, the incremental R^2 is over 7 percent, suggesting a more important role for the market than the cross-section regressions do.

In the aggregate equations, debt financing is significant but high when investment is slowing down, opposite to its behavior in the cross sections. Debt financing responds primarily to cash flow growth rather than to stock returns, leading the authors to speculate that debt is used to smooth investment as cash flow varies. The need for funds, and not the level of stock returns, appears to determine when companies issue debt.

While these results suggest only a minor independent role for the stock market and little opportunity for investor sentiment to contaminate the allocation of capital, the authors note that the stock market might have a greater effect on new firms for which the market is a key source of financing. Although they do not have data on new firms' investments, the authors do have data on the annual number of initial public offerings (IPOs) in the United States between 1960 and 1987. Consistent with their expectations, they find that both stock prices and the discount on closed-end funds, taken to be an index of investor sentiment, are significant in

explaining IPOs. Controlling for fundamentals does little to the estimated effects of these variables, and their incremental explanatory power is 16 percentage points, much greater than the stock price effects in the other equations. Although the strength of their conclusions is limited by the short time series on IPOs, the results suggest that investor sentiment may very well be an important determinant of public stock offerings.

Overall, the authors believe that much of the correlation between the stock market and investment simply reflects the information stock prices contain about fundamentals, much of which is directly available to firms. Even the limited set of fundamental variables used by the authors appears to render the stock market redundant as a predictor of investment, and it is easy to imagine that managers have much better information available. Because the fundamentals that the authors use only go as far as one year ahead, they would seem to leave scope for the market to gain significance for evaluating long-term prospects. But there is little suggestion of such a role in the data. The authors conclude that, except for its potential to affect the financing of new companies, investor sentiment plays little role in determining investment.

THROUGHOUT the post–World War II period, a fully integrated European Economic Community has been a recurring vision. The progress in recent years toward completion of a unified, barrier-free trade community in Europe has heightened interest in achieving a full-fledged monetary union as well; in its most extreme form, monetary union would imply a single currency and a central monetary authority. In the fourth paper of this volume, Alberto Giovannini examines the possible paths to monetary union and assesses the prospects for such a reform.

To start, Giovannini traces the history of exchange rate relationships within the European Community. For the first quarter-century after World War II, most European currencies were pegged to the dollar and hence to each other. Apart from occasional, discrete exchange rate realignments, exchange rates were fixed. By the end of the 1960s, interest grew in altering this system as part of a broader plan for closer monetary integration of Europe. There was, however, no consensus on how to proceed, and so no plan was implemented. Beginning with the floating of the deutsche mark in 1971, market forces led to a period of floating rates, not only among the European countries but among most major economies. From then until March 1979, when the European Monetary System was established, a free float of major currencies was impeded only by some constraints on currency movements among the European nations. The EMS represented a renewed effort to establish monetary stability among the members of the European Community. Although exchange rate fluctuations relative to the dollar have been very large from the start of the EMS, relative stability has returned among the currencies of Europe. Giovannini suggests that this achievement of the EMS was an important factor behind the current plans for even tighter monetary union.

The Delors report, commissioned by the EC governments to provide a plan for economic integration, envisions a gradual, three-stage move toward monetary union. In the first stage, barriers to capital movements are removed and monetary policies are coordinated more formally. In the second, a European System of Central Banks (ESCB) is established and exchange rates are fixed except in the case of extraordinary events. In the third, exchange rates are permanently locked together and the ESCB replaces national central banks. This last stage may be accompanied by adoption of a single currency. According to Giovannini, we are presently in stage one, with stage two of the Delors plan possibly beginning in 1993.

Giovannini observes two main economic differences between the Europe of today and the Europe of twenty years ago, when the first discussions of monetary integration never got translated into action. Today, the integration of Europe in trade has come a long way and a unified market may soon be achieved. In addition, financial markets have been liberalized throughout Europe, and capital controls, extensive twenty years ago, will soon be nonexistent. In the past, fixed exchange rate regimes needed capital controls to stem speculative attacks on currencies. In the 1980s, it has been possible to maintain the EMS system of exchange rate targets with occasional adjustments—a system of quasi-fixed rates—despite the removal of capital controls.

One purpose of fixed rates is to facilitate integration of capital markets by eliminating exchange rate risks and cross-country differences in interest rates and inflation. An interesting question about recent European experience is whether the presence of the EMS targets have influenced domestic interest rates and inflation—in other words, whether domestic policies have been conducted differently in light of the exchange

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agreements. Although interest rates and inflation rates have differed over the past decade among France, Germany, and Italy—the three countries that Giovannini focuses on in his paper—and the exchange rate bands that were supposed to limit fluctuations had to be adjusted several times, by the end of the period interest rates and inflation in the three countries had moved closer together and it has not been necessary to adjust the target bands for some time.

Giovannini presents a statistical analysis of the EC's recent experience using the exchange rates between the deutsche mark, French franc, and Italian lira to give some indication of how closely capital markets in the Community are integrated. Theoretically, the expected change in exchange rates should just compensate for the difference in interest rates between any two countries, once risk is taken into account. Giovannini finds that, even making the maximum plausible adjustment for risk, the realized returns to investing in lira or franc assets exceeded the returns to investing in mark-denominated assets. That is, the higher interest rates available in liras or francs have more than compensated for the depreciation of those two currencies against the deutsche mark during the decade. Although other factors such as liquidity premiums might account for some of the differential, Giovannini interprets it to mean that markets have not believed the EMS system of exchange rate targets could be relied on with certainty. Rather the market appears to have assigned some non-negligible probability to an extraordinarily large depreciation of the lira or franc. He concludes that the regime of quasifixed exchange rates with separate currencies has not, and probably cannot, be equivalent to a single currency regime. With separate currencies the possibility that governments will use the exchange rate as a policy instrument cannot be dismissed, regardless of their protestations.

Armed with evidence that exchange rate targets are not fully credible, Giovannini proceeds to argue that the gradualist strategy implied in the Delors report is not the best approach to monetary union. He does not believe that adoption of other features of the Delors plan will greatly increase the credibility of the exchange rate targets in the EMS. Indeed, stage one of the process envisioned in the Delors report specifically allows for exchange rate realignments.

Because he does not believe that the stage-by-stage approach will make eventual reform any easier, Giovannini regards prompt and com-

plete monetary union as a better course of action. He sees conversion to a single currency as the only fully credible way to remove exchange rate uncertainty; it makes a return to a regime in which exchange rates could move impossible. Delay simply means postponing the substantial benefits that he believes will flow from complete elimination of exchange rate risks, including enhanced trade in goods and capital within the European Community. On the other side of the ledger, Giovannini recognizes that currency reform does entail a sacrifice in national sovereignty over monetary matters with the establishment of a European central bank.

Some observers have questioned whether a common monetary policy is consistent with independent national fiscal policies. Divergent fiscal stances by individual countries have resulted in large differences in national debt, and high-debt countries must borrow both to roll over large stocks of debt and, typically, to finance large current deficits. This, it is argued, may lead to disagreement about the conduct of monetary policy since high-debt countries will want to minimize interest costs on their debt. While accepting this as a theoretical possibility, Giovannini does not regard it as a serious problem, in part because central banking has progressively become more independent from fiscal policy.

Giovannini believes the divergent economic conditions among European countries do pose a potential obstacle to currency union and observes that some countries prefer gradualism while others seek a more direct route to monetary union. France and Italy believe the EMS has helped them disinflate and welcome the discipline that a monetary union would provide. Germany, on the other hand, is not anxious to accelerate the movement toward monetary union until inflation and inflationary expectations in the different countries have converged. Giovannini's own belief is that the gradualist strategy lacks credibility and thus may be hard to pursue. He notes that it can mask a lack of commitment by national governments and so is vulnerable to external shocks or the whims of governments. On the other hand, complete currency union is unlikely in the near future because the idea lacks strong political leadership. As he puts it, "Countries understand and seek the benefits of a single currency, but sudden reform poses considerable political difficulties and large adjustment costs." Because of these political difficulties, Giovannini sees countries pursuing gradualist strategies. But, he believes that the current situation-with complete capital mo-

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bility and fixed exchange rate targets, but a lack of coordinated monetary policies—may prove to be unsustainable.

TRANSFERRING the ownership of property from the state to private parties is perhaps the most challenging political and economic task required for the transformation of the command economies of Eastern Europe into market economies. Privatization in Eastern Europe is a drastically different operation, both quantitatively and qualitatively, from the sort of privatization that has taken place in the West in recent years. In the West, privatization has meant the sale of a handful of firms to a large and established private sector comprised of well-developed institutions for the ownership and control of corporate enterprises. In Eastern Europe, where governments hold nearly 90 percent of industrial capital, these conditions do not exist; privatization means creating the basic institutions taken for granted in the West as well as redefining property rights and distributing substantial claims to those rights throughout the population. In the first report of this volume, David Lipton and Jeffrey Sachs analyze the task of privatization in Eastern Europe, with particular emphasis on conditions in Poland.

A program of privatization must first confront the current pattern of industrial ownership in Poland. Lipton and Sachs report that Poland has over 3,000 state-owned industrial enterprises, almost all of which should be privatized. The task is not as daunting as it sounds, however, because the top 500 industrial firms account for 40 percent of employment, 66 percent of sales, and 68 percent of net income in the industrial sector. Privatizing these 500 firms would accomplish much of what needs to be done. The authors do not see monopoly power as an obstacle to privatization because the industrial sector is subject to foreign competition. Thus, they focus their analysis on the privatization of these 500 largest firms, which were also the focus of the Polish authorities during 1990.

Some of the deepest problems of privatization arise from the current ambiguous ownership structure in Poland and much of the rest of Eastern Europe. While ownership rights are well defined in established Western economies, in Eastern Europe those rights are shared among workers, managers, and the state in ways that are ill-defined and changing. The authors report that the current ownership muddle arose, in part, from the limited reforms undertaken by communist regimes in which increased operational and financial autonomy was given to the enterprises by the state. In Poland, such reforms were adopted in the early 1980s. In general, the ownership rights that were previously exercised by the state through a central bureaucracy were passed formally to the workers of the enterprise, usually through some kind of workers' council. Even though the transfer was fully effective in only about 15 percent of enterprises, the authors see worker-managed firms as a significant obstacle to privatization because they believe that effective privatization requires disenfranchisement of the workers' councils.

After the collapse of Poland's communist regime, the independence of enterprises increased further and the problems arising from the ambiguous ownership structure became more severe. The authors note that, although workers and managers gained control from the state, they lacked clear title to the firms' assets. This provided incentives to appropriate the income of the firm and to strip it of its assets. With increased freedom, workers' councils pressured managers to raise wages, which soon were absorbing an increasing amount of the firms' cash flow and creating an explosion in real wages in the industrial sector and a wage-price spiral. In addition, once state firms were allowed to do business with the private sector, managers found ways to profit from sweetheart deals with outside partners, trading state property for favorable positions in the new firms or taking ownership positions in firms that contracted with state enterprises on highly profitable terms. Although some of these abuses have been addressed, it is unclear how effectively they can be controlled in the current chaotic system, and the abuses have created some public mistrust of privatization itself.

In any shift to a Western ownership structure, control of the enterprise will need to be taken from the workers' councils and their managers and placed with the owners of the enterprise. The authors observe that such a transfer of power to private owners raises a difficult political challenge to governments that rely on the support of workers. They suggest that workers be compensated for their loss by being given a portion of shares in the firm. But, the authors reason that there are equity and efficiency reasons why workers should not have a controlling share of their firms in any privatization scheme. They note that only about one-fourth of Poland's workers are employed in the industrial sector and the remainder would not benefit from the transfer of the ownership of industrial firms to its workers. In addition, only some firms are highly profitable, others are not; giving workers ownership of their firms would distribute wealth

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capriciously even among industrial workers. On efficiency grounds, worker ownership is disadvantageous because, if workers have effective control, they are likely to absorb an excessive amount of a firm's income through higher wages, are less likely to make profitable labor-saving investments, and are unlikely to shut down unprofitable activities. For all these reasons, a firm would have trouble raising capital.

While they object to worker control, Lipton and Sachs also argue against privatization through initial public offering (IPO), the standard practice used in the West. They offer four reasons why IPOs would not work well in Eastern Europe. First, public offerings require a careful valuation of each firm, which cannot be done adequately for most Eastern European firms. Second, the financial capital available to the public for buying enterprises is only a small fraction of the value of those enterprises. Third, widely distributing all shares through IPOs is inappropriate for all but the most valuable enterprises; the others are simply not worth enough to divide up among a large number of investors. Fourth, relying on IPOs would permit privatization of only the most profitable enterprises, leaving the others in the hands of the government.

To avoid these problems the authors propose that privatization be accomplished through the free distribution of shares to various groups: to the firm's workers, to a pool of funds intended to provide incentive compensation for managers, to a new private pension system and a system of mutual funds that would be owned indirectly by individuals, to the existing commercial banks and insurance companies so as to capitalize them and prepare them for privatization, and to the public at large, with a residual left to the government to dispose of later. The distribution to financial intermediaries is an essential part of the authors' plans for corporate governance. Because they mistrust present managers who often owe their positions to political lovalties rather than competence, the authors want financial intermediaries to have the power to oversee management. They suggest developing universal banking, as in Germany and Japan, where banks own corporate assets and are active in overseeing firms that they own. And they propose that mutual funds and pension funds actively monitor the firms that they own by appointing representatives to the boards of directors, a very different role than such institutions play in the United States.

The authors urge not only that privatization occur along the lines just described, but that it take place quickly. They see rapid privatization as

needed to prevent the squandering of income and dismantling of enterprises that currently result from the lack of clear corporate governance, and also to prevent the loss of confidence in the integrity of the process, which can threaten privatization itself.

MANY OBSERVERS of U.S. foreign trade have been pessimistic about prospects for improving the nation's trade deficit. Some have reasoned that barriers against U.S. exports, particularly in Japan, would prevent the trade deficit from responding as fully to the dollar's depreciation as might otherwise be expected. Others have argued that the U.S. market is so important that foreign exporters might be willing to absorb the drop in the value of the dollar by reducing their profit margins rather than by cutting their exports to the United States. Still others have argued that the appreciation of the dollar in the first half of the 1980s made the dollar so uncompetitive that U.S. producers permanently retired capacity while foreign exporters developed U.S. distribution facilities. On both counts, some of the trade deficit that arose when the dollar strengthened would remain even after the dollar returned to its previous value. By contrast, those who are optimistic about U.S. trade have reasoned that adjustment lags are longer than usually assumed; thus, conventional estimates understate the eventual trade balance improvement that devaluation should bring. These analysts point to unit costs in manufacturing as evidence that the United States ended the 1980s at least as competitive as it began the decade. In the second report of this issue, Robert Z. Lawrence examines U.S. trade performance to test how it is tracking predictions and whether either optimism or pessimism is warranted.

The U.S. trade balance moved further into deficit after the dollar started to fall in 1985. But between 1987 and the first half of 1990, the deficit narrowed by \$85 billion, or by \$82 billion omitting agricultural exports and petroleum imports, two large sectors that move idiosyncratically and are best treated separately. Lawrence also advocates removing trade in computers from the data before subjecting them to traditional statistical analysis. The reason for this last adjustment has to do with how the price and quantity of computers are measured. Because of the spectacular technical improvement in computers, the Bureau of Economic Analysis (BEA) estimates their quality-adjusted price has declined by over 70 percent between 1982 and 1990. With current dollar

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expenditures on both computer exports and computer imports growing rapidly, deflating with the BEA index leads to spectacular increases in the volume of computer exports and imports, and substantially affects the BEA measures of total export and import volumes. With such rapid technical change, these estimated prices and volumes are necessarily imprecise. Also, because an error in estimated price automatically creates an offsetting error in estimated volume, the coefficient on relative prices in explaining trade volumes will be biased upward.

Lawrence argues that the behavior of the rest of traded goods shows more reliably how trade is responding to relative prices. When computers are omitted from the analysis the price deflators for nonoil exports and nonagricultural imports, each grows by about 30 percent over the decade, a change that broadly corresponds to the change in manufactured goods prices both here and abroad. Over the decade of the 1980s, omitting computer trade cuts the growth in the volume of nonagricultural exports by 17 percent and of nonoil exports by 16 percent. Because these impacts are similar, omitting computers has little effect on the change in either the nominal or real trade balance.

Lawrence shows that regressions explaining the remaining trade flows, with variables for incomes and relative prices, predict recent experience quite well. An equation fitted to data through 1984 does not systematically over- or underpredict recent export and import prices. Out-of-sample predictions of export volumes are also quite accurate, underpredicting recent exports by only 1 percent. In contrast, the equation for import volumes estimated through 1984 overpredicts by about 7 percent in the first half of 1990. Putting these all together, imports and the trade deficit are modestly lower than historical equations predict. However, with similar growth rates of GNP here and abroad, the equations project the U.S. trade deficit will widen unless the relative price of U.S. goods declines.

Lawrence looks separately at U.S. trade with Japan and shows that adjustments in both exports and imports have been responsive to the dollar's depreciation. Since 1987, exports to Japan have grown as rapidly as exports to Europe and more rapidly than total exports. Meanwhile imports from Japan grew less rapidly than total imports or imports from Europe. Thus whatever trade barriers have existed in Japan, they have not interfered with marginal adjustments in trade in response to recent exchange rate movements. The counterpart to the large U.S. trade deficits of the 1980s has been a high level of foreign investment in the United States. Lawrence shows that this investment has thus far had a smaller effect on net earnings from foreign investment than might have been expected. Over the decade, net foreign investment totaled \$761 billion, but U.S. net foreign earnings only declined from \$28.9 billion in 1980 to \$2.4 billion in the first half of 1990, or by only 3.5 percent of the net foreign investment in the period. He notes that one possible explanation is that foreigners have overpaid for their direct investments here. Another possibility is that earnings on these investments are understated as foreigners try to minimize taxes, with the hidden investment earnings showing up as inflated export earnings. In his discussion of Lawrence's paper, Peter Hooper offered a third possibility: that the gestation period on foreigners' investments might be long, so the returns to their investments, though small thus far, might grow considerably in future years.

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