The year 2001 witnessed the first global recession in nearly a decade. Although the 2001 downturn had much in common with earlier global recessions, two features stood out. First, productivity growth in the United States remained strong in comparison with previous recessions, despite the sharp slowdown in employment. Second, even after recent data revisions the downturns in both the United States and Europe have been mild in comparison with the recessions of the 1970s and early 1980s, in keeping with a longer-term trend, especially pronounced since 1985, towards milder fluctuations in output. This trend is not universal (Japan is an exception), but it is widespread and certainly especially pronounced in the United States. Has the recent experience been merely an aberration, or does it result from changes in the underlying economy? Are markets better at managing risk? To what extent are improvements in macroeconomic policy management responsible, especially monetary policy? Going forward, how does the world monetary regime need to evolve if this downward trend in business cycle fluctuations is to continue? The papers in this volume of the *NBER Macroeconomics Annual* show that modern economic analysis can help provide considerable insights into these issues, and that thinking on these topics has evolved quite a bit, even from just five years back.

Brad DeLong tackles the question of the day: Is the recent U.S. productivity boom going to be a long-lasting one, or will it fizzle like an Internet bubble stock? For some time, the evidence has been mixed, with many skeptics arguing that there is little evidence of a productivity boom outside the information technology (IT) and telecommunications sectors. DeLong’s assessment is that the delay seen in the spread of IT productivity benefits to the rest of the economy is quite normal for major transforming inventions; he brings to bear the recent results of many other
young researchers to buttress his conclusions. He argues that the social returns to technology would have to drop precipitously for the boom to suddenly taper off, and that a more detailed look at investment patterns only strengthens the case of the productivity optimists.

While DeLong's paper assesses the trend behavior of U.S. output, James Stock and Mark Watson focus on the cycle. They carefully analyze both the nature and the sources of the decline in cyclical volatility. They show that not only has there been a decline in the variability of GDP growth, but that the decline has been across the board: The major components of GDP and the major sectors of the economy have all experienced a drop in volatility, suggesting that this phenomenon is not an artifact of shifting composition of output (e.g., from manufacturing to services). They also show that the reduction in volatility was likely the outcome of a sharp break around 1984, consistent with the evidence in Kim and Nelson (1999) and McConnell and Perez-Quiros (2000), as opposed to a smooth decline over the postwar period. They then take up the daunting issue of identifying the sources of the moderated cycle, focusing on three potential explanations: (1) good luck (i.e., smaller shocks), (2) good monetary policy management, and (3) technological change (e.g., improved inventory management). They find that improved monetary policy could account for 20% to 30% of the volatility reduction, but that smaller shocks probably account for most of the rest, in keeping with the hypothesis of Blanchard and Simon (2001) and Ahmed, Levin, and Wilson (2002). The authors stress, however, that their conclusions are tentative and that the issue is wide open for further investigation.

Twenty-five years ago, when Kydland and Prescott in their landmark paper first emphasized the time-consistency problem in the formulation of economic policy, it appeared that the inability to commit monetary policy was a major source of instability in the economy. Indeed, many concluded (most famously, Rudiger Dornbusch in his celebrated overshooting and exchange-rates paper) that as far as stabilization policy goes, monetary policy is part of the problem rather than part of the solution. How can things have changed so much in 25 years? Nancy Stokey revisits Kydland and Prescott's analysis, bringing her own modern perspective to the issues. Acknowledging that institutional innovation may arise to address the credibility problem (e.g., independent and inflation-conservative central bankers, inflation targeting), Stokey also emphasizes the role of reputation. She develops a simple model in which reputation is intimately interlinked with social consensus, a phenomenon well documented in many industrialized countries and emerging markets. She also notes that the choice of monetary instrument has fundamental strategic implications in a world where reputation underpins monetary stability and imperfect information always threatens to undermine repu-
tation. In addition to the policy significance of Stokey's paper, it gives an extremely useful introduction to recent research on time consistency and monetary policy.

How can it be that macroeconomic volatility has gone down when exchange-rate volatility, at least among the largest three currencies (euro, yen, and dollar) remains so significant? The basic answer, offered by Maurice Obstfeld and Kenneth Rogoff in their *Macroeconomics Annual 2000* paper, is that there appears to be a disconnect between macroeconomic variables and exchange rates. Obstfeld and Rogoff argue that a major reason is that due to various trade costs, the effective share of nontraded goods in the largest modern industrialized economies is much bigger than we formerly believed. They do not, however, provide a detailed model of the transmission mechanism. The starting point for Engel's analysis is "new open-economy macroeconomics" models that essentially developed in parallel with dynamic new Keynesian models that are prevalent in macroeconomic policy analysis today. Closed-economy theorists have debated for some time whether it is more realistic to model prices or wages as the principal source of nominal rigidity in the economy. International economists have long since moved past this debate; the evidence of price rigidities is overwhelming in the international context (the evidence famously stemming from Mussa's 1986 paper). Rather, the core issue today is whether prices are sticky in the exporter's or the importer's currency. The classic debates of Keynes and Ohlin and others took as given that nominal rigidities were mainly in terms of prices denominated in the exporter's currency (we know today that this is consistent with a world in which nominal wages are the main underlying source of rigidity). Engel cites a wide range of recent evidence showing that for many countries this is not the case; the prices are more accurately described as sticky in the importer's currency. As Engel shows, the differences between the two cases can be quite fundamental: if there is "pricing to market with local-currency pricing" (the new view), the classical transmission channels analyzed by Keynes and Ohlin are not operative. There is a great deal of debate raging in the field, including about whether intermediate products might be characterized by producer currency pricing even if final goods are not. Engel's paper gives an interesting overview of the issues and shows how important the questions of pricing practices are for understanding the efficacy of alternative exchange-rate regimes.

Alberto Alesina, Robert Barro, and Silvana Tenreyro carry the link between exchange rate and output volatility one step further, asking how the future map of world currencies ought to look if economic boundaries ever came to supersede political ones, at least for purposes of monetary policy. Certainly, they must be right that some day, as economies become more open and more integrated, there will have to be more experimenta-
tion with multicountry currency unions along the lines of the euro. One of their most interesting observations is that there are many more countries that have a natural currency-union partner—in terms of trade links, output correlations, etc.—in the dollar or the euro than in the yen. The authors make an effort to account for the endogeneity of optimal currency areas, that is, the fact that economies may adapt to circumstances if faced with a currency union. In his insightful comments (which were transcribed from the conference discussion), the late Rudiger Dornbusch claimed that in spite of plausible calculations such as Alesina, Barro, and Tenreyro present, many variants of currency unions are being contemplated in Asia. He also argued that some types of currency unions might be along very different lines than the authors consider, say a currency union of countries that are major non-oil commodity exporters, such as New Zealand, Canada, and Australia. Alesina, Barro, and Tenreyro package their findings in terms of a provocative map of a possible future configuration of currency unions.

Finally, market completeness plays a critical role both in the dynamics of business cycles and in their international transmission. Aart Kraay and Jaume Ventura present a model in which current account shifts are intimately linked to portfolio shifts. Their model, though radical in some of its conclusions, appears to accord well with recent U.S. experience where portfolio shifts have played a significant role in shaping current account cycles. There was some debate at the conference over whether their results would hold in a much broader class of growth models, at least in the long run. Certainly, Kraay and Ventura’s perspective is novel compared to 1980s research on the intertemporal approach to the current account, where portfolio considerations were secondary.

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This volume is Mark Gertler’s first as coeditor; he replaces Ben Bernanke. Finally, we are very sorry indeed that this macroeconomic annual conference will be the last one to feature the late Rudiger Dornbusch. His passing is a great loss to our profession. We are fortunate though to be able to present his comments from the conference (see Alesina, Barro, and Tenreyro’s session), which feature the wit, humor, and sparkling insight for which he was so justly renowned.

Mark Gertler and Kenneth Rogoff