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Volume Author/Editor: Ben S. Bernanke and Julio Rotemberg

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Editorial, NBER Macroeconomics Annual 1997

The 1997 edition of the *NBER Macroeconomics Annual* contains, as usual, a mixture of policy-focused research and studies of broader positive issues within macroeconomics. Two of the papers are concerned with fiscal policy: Michael Gavin and Roberto Perotti provide a comprehensive new data set on fiscal policy in Latin America, which they use both to characterize the cyclical behavior of government budgets in that region and to develop some hypotheses about the determinants of that behavior. On the domestic fiscal front, Martin Feldstein and Andrew Samwick propose an approach for changing the U.S. social security system from its current "pay-as-you-go" format to a fully funded program, and they discuss the likely effects of this change on the U.S. economy. The volume also includes two papers on monetary policy: Marvin Goodfriend and Robert King draw some lessons for monetary policy from what they perceive to be a new consensus among research-oriented macroeconomists, which they dub the "new neoclassical synthesis"; and Julio Rotemberg and Michael Woodford compute the properties of optimal monetary policies for a dynamic sticky-price model of the U.S. economy. Finally, this issue of the *Macro Annual* includes two papers on big issues of positive economics, as Peter Klenow and Andres Rodriguez revisit the question of why rates of economic growth differ across countries, and Christopher Carroll and Wendy Dunn seek to understand how consumer debt and asset holdings help determine the evolution of aggregate consumption.

Gavin and Perotti have painstakingly assembled data on consolidated government receipts and expenditures for thirteen Latin American countries. Based on these data, the authors demonstrate that there are large differences between the typical cyclical behavior of fiscal variables in Latin America and that found in the major industrial countries. The most

dramatic difference is that fiscal policy tends to be procyclical in Latin America, with government spending in particular falling during recessions, in contrast to the more familiar pattern of countercyclical fiscal policy found in most OECD countries. While they cannot completely rule out other explanations, the authors argue that this procyclical behavior is due primarily to the inability of Latin American governments to borrow in bad times. Since these are also times in which revenue falls (revenue is procyclical both in industrial countries and in Latin America, but somewhat more so in the latter), Latin American governments are forced to curtail their expenditures at the very time that (from a Keynesian perspective, at least) they may be most needed.

Another interesting set of findings in Gavin and Perotti's paper concerns the connection between the exchange-rate regime and fiscal policy. It is often alleged that fixed exchange rates induce greater fiscal discipline. The paper shows that this conventional wisdom is not borne out empirically, at least in Latin America. Periods of fixed exchange rates, it turns out, are actually associated with larger, rather than smaller, government budget deficits. Moreover, periods of fixed exchange rates often end in exchange-rate crises, following which, as part of a stabilization package, deficits are cut. While a sophisticated version of the theory that fixed exchange rates promote fiscal discipline may still prove correct, the authors have shown that crude versions of this story do not fit the facts for Latin America. This finding provoked a lively discussion, with the formal discussants proving several alternative interpretations of Gavin and Perotti's results.

In their paper, Klenow and Rodriguez return to the question of whether one can explain differences in output per capita across countries by differences in physical and human capital alone, assuming that all countries have identical production possibilities. An important contribution of their work is the construction of new estimates of human capital that take into account differences across countries in the return to schooling at the primary and secondary levels. These data allow the authors to estimate the extent to which countries' total incomes ought to vary as a result of differences in schooling (as well as in physical capital). Klenow and Rodriguez find that these implied differences in income do not go far in explaining the actual disparity in incomes across countries, and so conclude that variations in national income levels are mostly due to differences in productivity, as opposed to differences in inputs. Since they regard much recent work on growth (the "neoclassical revival") as having emphasized the latter instead of the former, they call for a change in the direction of growth research. A particularly challenging fact emerging from this work, as Charles Jones emphasizes in his comments, is that

countries which are very productive also tend to have high levels of human and physical capital, i.e., productivity and the level of inputs are positively correlated. The burning question then becomes whether factor accumulation causes productivity improvements, because the social returns to human and physical capital are higher than the private return; or whether differences in productivity that stem from other sources lead factors to be accumulated.

Feldstein and Samwick's paper suggests that there may be a surprisingly easy solution to the problems of the social security program in the United States, one that will make essentially everybody better off. They argue that by slightly increasing taxes on people who are currently working it would be possible to phase out the existing pay-as-you-go system, under which benefits are paid largely from current worker contributions, in favor of a system in which retirement benefits received by an individual are financed by that person's own past contributions. The authors' calculations show that the contributions needed to fund one's own retirement appear to be quite small relative to the taxes that would have to be paid under a pay-as-you-go system with the same retirement benefits. The reason for this difference is that the rate of return on capital (which is what people would earn on their social security contributions under the proposed, fully funded system) far exceeds the "rate of return" on contributions to the pay-as-you-go system (which roughly equals the growth rate of the economy). A critical issue, which received much attention at the conference, is why there should be such a big difference between the two rates of return, particularly since the risk-free rate of return in the United States is not much above the economy's growth rate. As stressed by Rao Aiyagari in his comments, if one takes the view that the difference between the average return on capital and the risk-free rate stems from people's aversion to the risks inherent in holding claims on capital, then the prefunding approach proposed by Feldstein and Samwick is less attractive; people would not feel that the higher expected return available under prefunding fully compensates them for the additional risk they would bear. On the other hand, Feldstein and Samwick's proposal is more attractive if one believes that the difference in returns arises from limited participation in equity markets, since in this case prefunding would provide less well-off people an opportunity to earn much more on their contributions than they have been able to in the past.

Another important, and related, issue pertinent to Feldstein and Samwick's proposal is the extent to which it would increase national saving. The authors suggest a positive saving effect, arising because a mandatory increase in contributions, by reducing current resources, should act to

depress consumption. In his comments, Lawrence Kotlikoff expressed some skepticism about the empirical importance of this channel, suggesting that in reality people would simply offset increased social security contributions by reducing other forms of saving (although whether the majority of the population has sufficient liquid assets to do this is debatable). Kotlikoff thought that the proposal might indeed increase saving, but rather through a second potential channel: He argued that the elimination of future transfers from the young to the old would effectively reduce the wealth of those people currently working, thereby inducing them to consume less.

Carroll and Dunn develop the idea, which has been advanced by policymakers such as Alan Greenspan, that increased borrowing by consumers during the 1980s has made aggregate consumption more vulnerable to changes in consumer sentiment. In the first part of their paper they provide some evidence on the determinants of consumption, the strongest finding being that consumption appears to be particularly sensitive to people's beliefs about the risks of becoming unemployed; however, the reduced-form relationships between consumption and measures of indebtedness are generally found to be weak. The greatest portion of Carroll and Dunn's paper is devoted to the development of a theoretical model which attempts to rationalize Greenspan's hypothesis by studying the behavior of individuals who (1) must choose whether to rent or own their home and (2) are motivated to keep a buffer stock of liquid assets that can be used for unforeseen contingencies. It is assumed that homeownership is cheaper in the long run than renting but involves the commitment of both a down payment and a future stream of mortgage payments, which can be changed only by bearing the heavy transaction costs of selling the home. Thus in deciding to purchase a house the consumer faces a tradeoff between lower expected living costs on the one hand, and greater financial flexibility in the face of possibly adverse income shocks on the other.

The model is difficult to solve, even numerically, because of the large number of state variables. However, simulations of the model do suggest that when consumers become more pessimistic about their future employment prospects, they attempt to increase their buffer stocks of liquid assets and are thus less willing to make a down payment on a house. Further, the model can reproduce the stylized facts about the 1980s, in that a credit-market liberalization (e.g., a reduction in the required down payment) is shown to lead to a runup in consumer debt, and the higher debt burden in turn increases the sensitivity of consumer spending to labor-market uncertainty. Much of the discussion of the paper concerned how a complex simulation model of the sort used in this paper should be tested and evaluated, given that (because of compu-

tational considerations) it is possible to conduct simulations for only a small number of parameter values.

Goodfriend and King see macroeconomics evolving towards a new consensus, which combines new Keynesian theories of price stickiness and imperfect competition with the real business cycle (RBC) assumption that the behavior of consumption, investment, and labor supply can be rationalized as choices of optimizing agents in a dynamic, stochastic environment. They call this emerging consensus the “new neoclassical synthesis” (NNS), in honor of Paul Samuelson’s original vision (which also blended classical and Keynesian elements). Much of the paper is devoted to drawing out the implications of this modern eclectic approach for monetary policy.

Goodfriend and King argue that the new synthesis has clear and practically useful policy implications, and they consider a variety of issues, such as the optimal policy response to an oil price shock. A main result is that monetary policy ought to stabilize prices, so that the effects of aggregate demand shocks are minimized and allocations mimic as closely as possible those implied by the RBC theory. The authors also point out the difficulties inherent in using interest rates as an intermediate target for monetary policy, since in the NNS framework the nominal interest rate consistent with the optimal monetary policy will depend in a complex way on the shocks hitting the economy and on whether those shocks are expected to be temporary or permanent.

Rotemberg and Woodford present a model that incorporates many elements of the synthesis outlined by Goodfriend and King. In particular, they analyze the properties of optimal monetary policy in a relatively sparse but fully dynamic framework that includes lags in price adjustment and (conditional on these lags) assumes optimizing behavior by consumers, workers, and firms. This model is able to mimic closely the observed responses of output, inflation, and the federal funds rate to monetary policy shocks (which are defined in a vector autoregression setting as movements in interest rates that are not predictable by other variables). Rotemberg and Woodford argue that this criterion is the correct one by which to judge the fit of the model, as the focus of the analysis is on monetary policy and the determinants of aggregate demand and supply are not modeled in detail, but are treated rather as autonomous disturbances.

The authors then compute how monetary policy ought to respond to disturbances to spending and aggregate supply. They show that complete stabilization of inflation is possible in general but that, under the assumption that disturbances affecting private decisions are not immediately observed by policymakers, this complete stabilization may require

large swings in interest rates. Since nominal interest rates cannot be negative, feasibility of inflation stabilization may therefore require that average interest rates—and hence inflation—be quite high. Noting this tradeoff between the level and variability of inflation, the authors conclude that it is best to allow inflation to change slightly from period to period. Nevertheless, an optimal monetary policy, according to the Rotemberg–Woodford model, would have stabilized inflation considerably more than did actual U.S. policy.

The most debated aspect of the paper was whether it is legitimate to use a modeling strategy which results in the bulk of the fluctuations in output and inflation being attributed to *serially correlated* disturbances to aggregate demand and supply. Several participants, including the discussants, suggested that they would have preferred a model with a less complicated error structure and with more of the serial correlation of output and inflation explained by explicitly modeled, internal propagation mechanisms.

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Ben S. Bernanke and Julio J. Rotemberg