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Short-Term Macroeconomic Policy in Latin America

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Relation of the National Bureau Directors to Publications Reporting Conference Proceedings

Since the present volume is a record of conference proceedings, it has been exempted from the rules governing submission of manuscripts to, and critical review by, the Board of Directors of the National Bureau.

(Resolution adopted July 6, 1948,
as revised November 21, 1949,
and April 20, 1968)

Prefatory Note

This volume contains some of the papers presented at the Conference on Planning and Short-Term Macroeconomic Policy in Latin America, held in Isla Contadora, Panama on October 31 through November 2, 1975. The conference was sponsored by the National Bureau of Economic Research, Instituto Latinoamericano de Planificación Económica y Social (ILPES), and Ministerio de Planificación y Política Económica de Panamá. We are grateful to the IBM Corporation for its financial support for this conference and to the members of the Program Committee, James Hanson, Jere Behrman, M. Ishaq (Ned) Nadiri, and Nicolás Ardito Barletta. We wish to thank the staff members of the Panamanian Ministry of Planning responsible for making local arrangements for the conference.

Martin Feldstein, President
National Bureau of Economic Research

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JERE BEHRMAN
JAMES A. HANSON

Editors' Introduction to Short-Term Macroeconomic Policy in Latin America

In 1974 and 1975 the Latin American economies experienced particularly severe stagflation. Many of the Central American and Caribbean countries suffered from double digit inflation, which normally is confined to the southern cone of South America, while in that region Chile and Argentina suffered from hyperinflation, abnormal even for them, of over 30 percent per month. Brazilians, Colombians, and Peruvians saw the rate of inflation double or triple. At the same time growth rates generally fell substantially below those obtained during the previous long period of prosperity, urban unemployment increased, and it became difficult, if not impossible, to absorb the rapidly growing labor force in productive employment.

As a result, the Panamanian Ministry of Planning and Economic Policy, the Latin American Institute for Economic and Social Planning (ILPES), and the National Bureau of Economic Research decided to hold a conference to reexamine short-run macroeconomic policy as applied to the Latin American economies. The objectives of this reexamination were: 1) to evaluate the usefulness to Latin

American planners of recent work on short-run forecasting techniques, particularly econometric models, to improve the planner's ability to participate in short-run policymaking and thus increase the weight given to developmental goals in day-to-day policymaking; 2) to reassess short-run constraints on policymaking, often crucial in determining the success of development plans, particularly in light of the prevailing Latin American version of stagflation; and 3) to consider the impact of conventional monetary and fiscal policy in the Latin American institutional framework and to examine some less conventional policies.

The conference on short-term macro policy in Latin America was held in November 1975 at Isla Contadora in Panama. This volume represents a selection of papers presented at that conference.

The first paper, by the coeditors, suggests some essential modifications that must be made in protytype, developed country econometric models before they are suitable for Latin American. Examples are taken from recent theoretical and econometric work and from the Behrman Chilean and the Behrman-Vargas Panamanian models.

First, particular attention must be paid to the wage-price-output nexus. The possibility of surplus labor, of disguised unemployment, and of poor unemployment figures should be taken into account. In inflationary economies various hypotheses regarding price and wage formation must be explored.

Second, the foreign sector cannot be treated cursorily, since it is of crucial importance in most developing economies. For example, early development plans tended to emphasize import substitution, treating exports as fixed and using an overvalued exchange rate and tariffs as policy instruments. Most recent work shows that major and minor exports respond significantly to price incentives. Thus, exports represented another avenue for growth which might have been exploited by alternative policies, in particular, maintaining more realistic exchange rates.

A third important and somewhat neglected interrelationship is the link between the government budget, monetary policy, and the balance of payments. Ambitious government spending programs must be financed, but limited taxing capacity and small local capital markets make this difficult, leaving either foreign borrowing or monetary emission as alternatives. These may have unintended and undesirable effects on the balance of payments. The structuralist school has also pointed out reverse linkages running from poor export performance and slow agricultural growth to rapid monetary expansion. Thus, neglect of this interrelationship leads to an overstatement of the available policy options, and returns us to the wage-price-output nexus mentioned earlier.

These problems are far from settled issues in developed country models. Indeed, they are increasingly becoming the subject of intense study in the Phillips curve-rational expectations debate, the monetary theory of the balance of payments literature, and the criticisms of passive or interest rate targeted monetary policy. Further study of developing countries can help resolve these issues as well as provide specific answers for Latin American policymakers.

The two economy-wide econometric models included in this volume not only meet the three objectives of the conference but also shed some light on the issues raised by the coeditors. The Behrman-Vargas study of Panama is the first medium sized, quarterly econometric model of a developing country and involved construction of quarterly output series as well as econometric estimation. The model tracks the major variables within the sample period, indicating the potential usefulness of similar exercises in other countries if reasonably good quarterly data can be obtained within a relevant time horizon. In general, agricultural production and exports seem responsive to price variables. Policy simulations provide slight support for the effectiveness of fiscal policy as exports move inversely to government spending, indicating supply bottlenecks. Even less support is found with the model for the effectiveness of monetary policy, as measured by variations in agricultural credit. Service exports, represented by net income from the Canal Zone, have a much larger multiplier.

These results seem to support a monetary model of the balance of payments, but the authors warn that the linkages yielding this result are not clear. They are particularly concerned with improving the specification of the capital account of the balance of payments, where the possible interest inelasticity of foreign loans casts some doubt on the applicability of fiscal policy results to large budget deficits. Moreover, the authors also point out that (unspecified) inventory variations, not imports, are used to close the model residually in the face of demand shocks, which also may not be a correct interpretation for large policy changes.

The Duran-Solis model of Nicaragua is less ambitious, being essentially an experiment in using a model of minimum complexity, based on GNP, domestic credit, and a few other variables, to track the economy. Domestic credit has a strong, positive effect on private investment and consumption, but a strong negative effect on the balance of payments, through imports and capital flows, reflecting a monetary approach to the balance of payments. The success of the exercise and the model's usefulness in illustrating the effects of exogenous shocks indicate that this approach may be fruitful for other countries.

The ability to track within sample data is only one measure of a model's effectiveness; perhaps its ability to forecast is even more important. However, most econometric models of developing countries are of recent origin and based on annual data. Thus, there is little data with which to evaluate their forecasting performance. An exception is Abel Beltran del Rio's Wharton-Mexico model; his paper provides a useful evaluation along these lines. As with other Wharton models, forecasting is done through a mixture of econometrics and expert opinion. The paper shows that there is some improvement in accuracy as the forecast horizon shortens; the use of expert opinion also reduced forecast errors. However, the paper also highlights the difficulty of forecasting when the government is a major source of expert opinion as well as an output consumer. According to Beltran del Rio the two areas that exhibited the worst errors in prediction—primary production and the trade balance—suffered from forecasts that shaded toward government predictions.

The following papers by Brodersohn, Barro, and Fernandez deal specifically with the wage-price-output nexus and, indirectly, with the effectiveness of monetary policy in the larger Latin American economies. Brodersohn estimates a traditional Phillips curve relation for Argentina and finds no significant relationship between the rate of wage change and unemployment, particularly when fairly rapid and full adjustment to inflation is taken into account. (Over 90 percent of the adjustment to errors in expectations occurs within one year and the coefficient of adaptive inflationary expectations does not differ significantly from one.) Changes in strike activity are also important in explaining wage inflation.

Brodersohn concludes that aggregate demand policies acting through changes in unemployment will not affect wage inflation, although policies that act on expectations will be important. He supports this conclusion by referring to the significant effect of the wage-price control policies of Campora-Peron-Gelbard period and of the budgetary restraint of the Ongania-Krieger Vasena period. However, the former case is a short period at the end of the time series, which preceded a major upsurge in inflation. In the latter case it is difficult to separate the usual effect of reduced aggregate demand on inflation and thereby on expectations from a direct effect on expectations.

Barro's and Fernandez's papers deal with the outprice-price nexus rather than the traditional Phillips curve. Both papers concentrate on the effectiveness of monetary policy and posit a link between money and prices and prices and output. Both papers also posit the rational expectations hypothesis that only unexpected changes in money-prices will affect output. Barro uses a simple autoregressive process to predict money, and thus, as he points out, it is difficult to separate the rational expectations hypothesis from one in which actual money growth has lagged effects. The Fernandez paper allows for more complex monetary process, involving past inflation as well as past monetary growth, by using Box Jenkins ARIMA estimates. Both he and Barro find relatively short autoregressive processes. They also experiment with other variables to predict monetary growth with little additional effect, except in Barro's study of Mexico.

Both papers find that unexpected changes in monetary policy are relatively ineffective. Most, if not all, (unexpected) monetary growth (80-90 percent) seems to lead to price changes; there is only a small feedback to higher output. This supports Lucas's hypothesis that response to nominal shocks should be less when such shocks are frequent.

Barro finds a significant effect only in the case of Mexico, where there is some doubt about the independence of money—the terms of trade, effective exchange rate, and U.S. variables are important variables in both equations. Barro's paper predicts 1974 and 1975 output reasonably accurately. Insignificant coefficients are the rule for Colombia and Brazil, though here the monetary processes are not well specified. Fernandez's paper also finds nearly insignificant coefficients for Brazil (quarterly data). He obtains small coefficients for Argentina, though here the data refer only to industrial output, there being no quarterly information on total output. Fenandez's simulations of cuts in money growth in Argentina produce periods of stagflation—prices rising and output falling—such as those that lead to claims that the "old" remedies don't work. However his model is one in which only the "old" remedies will work, with some lag.

Wachter's paper is also concerned with monetary policy, but with its formulation rather than its effectiveness. She tests a quasi structuralist model in which reductions in agricultural supply lead to rapid increases in relative prices of agriculture (because of rapidly clearing markets) and would cause urban unemployment in the face of downwardly rigid industrial prices, except for "passive" monetary policy on the part of the authorities. Using quarterly data Wachter finds a significant effect of agricultural prices on the Chilean CPI—other prices do not grow more slowly when agricultural prices rise—and some evidence of money reacting to past price changes, thus supporting the structuralist view. However, these effects are less pronounced in annual data.

The papers by Siri and Borts and Hanson deal with the foreign sector and its effect on the domestic economy. Siri presents a model that determines output in five Central American countries based on their major exports and intraregional trade. In general he finds significant responses to prices, in some cases with a lag, supporting the view of exports mentioned above. The multiplier effects of major exports range from 1.5 (Costa Rica) to about 1 (Guatemala). This is similar to Behrman and Vargas's Panamanian results for services exports. The model tracks each country's output reasonably well, indicating these countries' dependence on foreign markets. The significant and different time trends in the export supply equations of each country indicate much work remains to be done in explaining export supply.

The Borts-Hanson paper also is concerned with the foreign sector, but concentrates on its interrelationships with monetary and output growth. The paper uses a home goods–flow variant of the monetary model of the balance of payments. Changes in (flow) monetary emission produce changes in relative prices so that households feel they have more income since they do not "notice" the loss of reserves. Thus *all* of the extra monetary emission does not "leak" out and monetary policy has some effect on output. However, a flow loss in reserves does occur and thus eventually the flow emission has to be reversed or the effective exchange rate changed. The possibility of a (small) effect on output is consistent with Behrman's and Barro's results and seems borne out in the paper's empirical work on Panama. Panamanian prices do not move proportionately to import prices and domestic credit is shown to have small but significant effects on prices and output.

The final paper in the volume is Schydlowsky's study of excess capacity and policies to reduce it. Casual empiricism suggests there is plenty of idle capacity in Latin American manufacturing, but Schydlowsky shows just how prevalent it is and suggests reasons for its occurrence—implicit and explicit second shift premia, high user cost, and overvalued exchange rates, among others. He argues that changes in these policies could yield significant benefits in terms of additional output, employment, and improved balance of payments positions.

The papers in this volume represent a good sampling of work on Latin American macro problems and policies. They indicate that econometric forecasting is a useful exercise for Latin American countries, even if undertaken at a minimum level. They also point up the importance of exports to growth and the strong influence of price variables and effective exchange rates on exports.

The papers generally provide little support for the effectiveness of monetary policy. In small, open economies such as Panama there seems to be a large spillover into the balance of payments, while in closed, inflationary economies such as Brazil and Argentina the analyses seem to indicate that prices (and wages) react swiftly to changes in monetary growth with output only briefly affected. In medium sized economies such as Mexico there is a greater effect; but here the balance of payments again presents a constraint. Fiscal policy seems somewhat more effective in raising output, although its interrelationship with monetary policy and foreign loans may provide a constraint on its use. Nonconventional macro policies, such as removing constraints to high utilization rates, may be a more promising method of affecting output in the long as well as short run.

We wish to thank the sponsors that made this useful and provocative conference possible: the Latin American Institute for Economic and Social Planning, the Panamanian Ministry of Planning and Political Economy, and the National Bureau of Economic Research (as part of its Latin American Workshop Series). We hope that readers will find this conference volume helpful in understanding the current state of analysis of important short-run macroeconomic policy issues in Latin America and elsewhere in the developing world.