Research Review

Crop Insurance for Agricultural Development: Issues and Experience

Peter Hazell, Carlos Pomareda, and Alberto Valdés (eds.). Baltimore: Johns Hopkins Press, 1986, 322 pp., $32.50.

By David Freshwater and David Trechter*

Many countries operate "multi-peril" crop insurance programs to compensate participating farmers when various environmental factors cause low yields. This book leaves one with the overwhelming impression that multi-peril crop insurance has been an expensive failure. The book, although primarily oriented toward crop insurance programs in developing countries, also examines crop insurance in developed economies. In both environments multi-peril crop insurance has received large government subsidies, serviced a limited clientele, and had marginal success in stabilizing farm income. This book addresses both theoretical arguments for establishing crop insurance (including potential impacts on producer and lender incentives) and historical experiences with such insurance. Roughly half the book has a theoretical or conceptual focus, the other half is devoted to case studies of particular programs.

Although each chapter is written by a different author or authors, the editors have done a good job of referring the reader to other chapters containing relevant material. The introductory and concluding chapters, written by the editors, provide a useful overview and briefly summarize major arguments and conclusions. Anyone with even a passing interest in the economics of multi-peril crop insurance should read these chapters.

The book has several shortcomings. The papers are grouped into three parts, one focusing on demand for crop insurance, one dealing with insurance as a policy instrument, and one examining the operation of selected crop insurance programs. The part examining insurance as a tool for policy is by far the least successful. It is not clear why some of the chapters are even in this section. In particular, the chapters on crop insurance programs in Mexico and Japan might better have been placed in the empirical part of the book. The biggest disappointment of this section, however, is that it fails to deal positively with the shortcomings of crop insurance. If crop insurance is a flawed tool, what changes could be made to improve its performance? If it is an inappropriate policy tool, are there alternatives that address the same objectives? The authors address such questions, if at all, in a superficial and unconvincing way. For example, the conclusion of the chapter analyzing Mexico's program states that crop insurance "increases incomes and employment in the farm sector and prevents a decline in aggregate production. Perhaps these effects might more simply be attained through price policy." But is this alternative politically feasible? Can a price policy also address other problems, such as stability of income or improved access to credit, which motivate crop insurance programs? The authors generally prefer to list alternatives without submitting them to the same degree of scrutiny given to the crop insurance program.

The other sections of the book are more successful. The authors tend to focus on a few common themes: (1) crop insurance works best as a mechanism to stabilize farm income when the principal factor affecting income is yield fluctuations, (2) multi-peril crop insurance schemes are expensive to operate and subject to moral hazard and adverse selection,[1] and (3) subsidized crop insurance programs may provide net social benefits, but may not be the most efficient means of achieving social goals. Conversely, crop insurance programs are considered useful in well-defined contexts, such as insuring yields against specific natural hazards. This technique can also be an effective way to foster the development of credit for farmers, since it protects lenders against a major cause of borrower default, particularly if the lender receives the crop insurance payment directly.

*The reviewers are agricultural economists with the Agriculture and Rural Economics Division, ERS.

[1]When insurance coverage alters a policyholder's incentive structure such that outcomes involving losses are encouraged, a moral hazard exists. Adverse selection arises when farmers with higher than average risks comprise a larger share of the insurance pool than forecast when premiums were set.

Those with an interest in U S agriculture will find the chapter by Gardner and Kramer particularly useful It gives an account of the development of the U.S crop insurance program, summarizes previous studies of program impacts, and analyzes demand for crop insurance and its influence on farmer behavior Other chapters use U S examples in their analysis In his chapter on the financial viability of agricultural insurance, Pomerada examines the U S experience in terms of administrative costs, indemnity to coverage ratios, and other operating variables

By focusing attention on all-risk crop insurance and the problems encountered with its use in developing countries, the book leaves the impression that crop insurance is a flawed tool However, the inevitability of this conclusion is unclear. Many problems described in the book arise either because crop insurance is asked to serve a function for which it is not well suited or because the information necessary for successful implementation is not available. The book does contain much useful information Better organization and a more comprehensive analysis in the policy section would have enhanced it greatly

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Instead of mounting surpluses, increasing storage costs, and Treasury expenditures for farm commodity programs, rising consumer food costs have become a principal concern of people interested in U S agricultural policy Associated with this changed emphasis is a renewed interest in foreign trade policy for agricultural commodities and the effects of liberalized trade on the U S food and fiber sector of the economy

James Vermeer, David W Culver,
J B Penn, and Jerry A. Sharples
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Linking Macroeconomic and Agricultural Policies for Adjustments with Growth: The Colombian Experience

Vinod Thomas and others. A World Bank Publication. Baltimore and London: Johns Hopkins Press, 1985, 252 pp., $32.50.

Reviewed by H. Christine Bolling*

The author and his collaborators are the World Bank's "old hands" on Colombia's economy and have produced several excellent World Bank reports. Using material taken from some of these publications, the authors have presented a study that is both a technically excellent and very readable account of Colombia's macroeconomic and agricultural policies and their effects Any students of Colombia's agriculture should read this book

The authors make several background points:

- Colombia has a relatively small modern sector superimposed on a broad traditional base It produces more than 90 percent of its own food, and agriculture is still a major industry

- Nearly half of Colombia's legal foreign exchange earnings are from coffee exports Colombia has diversified from coffee to protect itself from the wide swings characteristic of a primary product economy [But, in 1986, coffee will again provide the windfall foreign exchange earnings that will pull Colombia out of its current economic slump Colombia's economic boom of the late seventies was also due to a runup in international coffee prices]

- Colombia has a low foreign debt at a time when its neighbors, both rich and poor, have suffered the consequences of carrying a large debt load. Colombia's current debt situation is largely attributed to its conservative import policy.

- Colombia is a textbook case for policymakers because, at one time or another, the Government has tried nearly every type of intervention exchange rate manipulation, import taxes, export taxes, export subsidies, import licensing, and price controls through the Instituto de Mercadeo Agropecuario (Agricultural Marketing Institute (IDEMA))

*The reviewer is an agricultural economist with the International Economics Division, ERS

The book provides an analytical account of Colombia's policies. Some of the problems that Colombia has had to deal with are universal to developing countries· devaluation, inflation, and the vagaries of primary product markets Because Colombia has gotten through these problems more successfully than most developing countries, its experiences may be an object lesson to others

The authors stress that policymakers cannot make agricultural policy in isolation, nor can the macroeconomic policymakers ignore the effect their decisions have on the farm sector They often must make tradeoffs among sectors, and they may find themselves in a web of offsetting policies

In the chapter on export policy, the authors cover exchange rate management (through the "crawling peg" exchange rate), export loans, and subsidies They conclude that Colombia has benefited more from an export-oriented policy than from import substitution

In the import policy chapter, the authors develop a rationale for import tariffs and licensing They then show how these instruments cause increased domestic prices, inefficient allocation of resources, and losses in consumer welfare They also show the tradeoffs among policies For example, higher tariffs are used to compensate for overvaluation of the peso With a higher tariff, the importable sector grows partly at the expense of the exportable sector Moreover, increases in protection tend to depress overall economic activity The authors also note that trade liberalization should proceed in stages to reduce short-term dislocation (many policymakers choose to ignore this point)

The latter chapters pertain specifically to agriculture The authors use the price intervention chapter to discuss the role of IDEMA in Colombia's agricultural price-support program

The chapter on price stabilization is less country-specific Although price stabilization is a goal of Col-

-ombia's agricultural policy, the authors say that it is often unclear whether Colombia's policies stabilize prices, incomes, or some other economic factor Price stabilization may bring other problems distortions in production incentives and a failure to react to price signals in world markets

Coffee gets a special chapter because of its importance to Colombia's economy Although coffee exports raised export earnings, these windfall earnings had to be carefully managed to avoid excessive inflation The authors discuss current coffee production technology and the policy issues specific to coffee export taxes, mandatory deposits of export receipts in the Central Bank, stock and price policy, and diversification programs

Other chapters include Government expenditures on agriculture and input policies Finally, the authors sum up how these policies, whose aim is "to bring about economic adjustment while sustaining growth," are faring They show what policy issues Colombia will face in the near term.

The authors have written this book cleverly Although they use empirical studies, they leave the mathematical modeling for the appendixes and footnotes Several of these appendixes are worthy of mention. Appendix A showcases economic models that support the authors' conclusions on the interaction of coffee prices, money supply, and inflation in Colombia. Models in appendix B illustrate how changes in international coffee prices affect the competitiveness of coffee with other import goods and nontradables in Colombia

Appendix C contains a model for predicting nominal interest rates in a semi-industrialized, semi-open country like Colombia with explanatory variables of money supply, real income, expected devaluation of the domestic currency, and a risk premium term Appendix F details Colombia's marketing system for coffee, emphasizing the price mechanism and coffee taxes Other appendixes graphically present the welfare cost of price stabilization and measure variability in international, producer, and consumer prices, producer gross incomes, and net profits for nine crops.

The book has a few minor weaknesses In discussing protection and efficiency (p 68), the authors take the easy way out in the calculation of nominal rates of protection by comparing farm gate with international prices for several commodities and then by noting in the text how prices should be more precisely identified The authors are long-time students of Colombian agriculture and presumably have more access to price, transportation cost, and marketing cost information than do most researchers

One of the contributing authors states: "it is necessary to increase the real quantity of money, requiring that an increase in the rate of growth in nominal money not be matched by higher equiproportional inflation (pp 190-91) This feat can be accomplished in the real world economy only in the very short run Although the authors criticize the Colombian coffee industry for carrying too large a stock, the country will benefit from windfall profits from that stock In early 1986, the Brazilian coffee industry suffered crop losses from drought, driving up international prices Such is the fate of an author's putting prediction into print These criticisms aside, the book is a worthwhile study of considerable breadth and depth.

Removal of Price Supports and Supply Controls for U.S. Tobacco: An Economic Analysis of the Impact

Daniel A. Sumner and Julian M. Alston, Washington, D.C.: National Planning Association, 1985, 60 pp. $8.00

Reviewed by Barbara Stucker*

Sumner and Alston have tackled a touchy subject: the consequences of removing price supports and supply controls for U.S. tobacco. The authors deserve credit for examining this sacred cow of farm commodity programs. In their own words, "Elimination or phasing out of the federal tobacco program would have impacts on the prices and quantities of several products and would significantly affect the income and well being of millions of people." Their analysis does not address the social issues and controversy over the conflicting Federal policies of farm support and public health. Theirs is not a social assessment of a shift in policy away from price supports and supply controls; it is an economic analysis of the change in the well-being of producers, the tobacco industry, and exporters. The book analyzes changes in prices, supply, and demand for tobacco that might result if protectionism were abolished or reduced.

The book begins with an extremely brief description of the U.S. tobacco program. Fifty years of history are condensed to a single page. No criticism is intended here, simply an observation that the authors are anxious to get into the analysis without becoming bogged down in historical legislation. They concentrate on the current program and its operation. They explain supply controls and support prices with the right degree of depth to give the reader a good understanding of the tobacco program and its peculiarities, but not in such detail as to slow the reader down.

Tobacco is a peculiar crop, and that's what makes this economic analysis unique. The authors must unravel a tangle of restrictions on producing and marketing tobacco before they can assess the "good and bad" of deregulation. They begin by examining who owns production rights—that is, how many quota holders produce tobacco, as opposed to how many producers lease the right to raise tobacco. Patterns of ownership vary by State, as do lease rates, occupation of owners, size of quotas, and number of allotments.

*The reviewer is an agricultural economist with the National Economics Division, ERS.

The authors then continue to wave their economic wands over the tobacco sector, eliminating price supports here, withdrawing allotments there, and voilà! Equilibrium is achieved, production expands, prices fall, exports rise, demand increases domestically, efficiency is attained in least-cost regions, and industry revenues bulge. Areas of expansion are blessed with increased income, whereas losers experience the contractionary costs of dislocation and lost income.

Perhaps the hand is quicker than the eye in this case. Of course, a change in price vis-a-vis a reduction in price supports would affect supply and demand. So would freedom of production. These are not enlightening results. But the degree of change presented by the authors is of such magnitude that both their results and the questions raised by those results are worth mentioning here:

- An increase in tobacco production of 50-100 percent,
- A reduction in the price of tobacco of 20-30 percent,
- An increase of 100 percent in U.S. tobacco exports,
- An increase in the quantity of U.S. tobacco demanded by 50-100 percent, and
- An increase of 15-60 percent or more in total revenue to the tobacco industry.

Aren't any negatives associated with deregulation of the tobacco industry? Yes, the authors illuminate them as well:

- A loss of up to 2-3 percent in personal income in counties with a high dependence on income from quota ownership,
- Elimination of the capital value of tobacco production rights and the consequent loss of about $800 million in annual income to quota owners,

- Major costs of dislocation and disruption if price supports and production restrictions were eliminated suddenly, and
- Some increase in price variability for tobacco relative to the 1950-80 period.

The results of the analysis elicit the question: why is deregulation dragging its feet, when the consequences seem to fit so well with current overall farm policy objectives? Despite the negative consequences associated with deregulation, they are negative mostly for landowners who, we should be reminded, are largely not the producers. Expansion in production that would be absorbed by regaining lost export markets is a dominant theme of farm policy in the eighties; here is a case where that policy could be successfully implemented.

The authors caution against immediate and swift deregulation for several reasons. First, postulating what the tobacco industry would look like in the absence of regulations is like painting a picture blindfolded. Tobacco has been regulated in varying degrees for more than half a century. No one can be sure of the results of deregulation, because no one has seen such an animal. It is no longer the tobacco industry of the thirties. Thus, the authors admit their confidence must be checked on this score.

Next, even if policymakers wished to redistribute wealth from nonfarming landowners to producers, the loss of wealth to individuals, to counties, and to regions which have come to depend on that wealth would be enormous, highly concentrated in a few areas, and devastating. Tobacco quota ownership is most concentrated in North Carolina, for example, providing over 5 percent of the State's total agricultural revenue. One county alone in North Carolina would, according to deregulation proposed here, lose $19 million, or about 14 percent of its total revenue from agriculture. When policymakers are faced with an equally pressing concern of alleviating financial stress, as they certainly have been thus far in the eighties, the gains from deregulation pale somewhat.

Still, the authors offer a compromise: phase out price supports and supply controls, if immediate deregulation is economically and otherwise unpalatable. The tradeoffs between slow and swift, they suggest, are smaller costs of disruption and smaller losses to quota owners at the expense of other people who would benefit from immediate elimination.

This book concludes with two reviews: one from a representative of the tobacco industry (James H. Starkey, Vice President of Universal Leaf Tobacco Company, Inc.), the other from a veteran agricultural economist (Harold F. Breimyer). Although both reviews commend the authors for their undertaking, the reviewers less than fully embrace the results of tobacco deregulation. Starkey suggests that the single biggest problem with the tobacco program is price, which has hampered the ability of U.S. tobacco to compete in world trade and led to disillusionment with the tobacco program on all fronts. Breimyer concedes the problems of the tobacco program, but also admits remembering the pre-1933 years, when "tobacco farmers were probably agriculture's poorest in the years just before the program began. Tobacco production was the refuge of the impoverished. Entry was so easy, jobs so scarce, and acreage so expandible." Breimyer concludes, as does this reviewer, that by exploring various issues in program-making for tobacco, Sumner and Alston have provided a useful service. Given the path on which U.S. agriculture is currently headed, policymakers can only welcome analyses that consider changes in farm commodity programs designed to speed agriculture on its path to recovery and strong performance in the years ahead.

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