ANNOTATED BIBLIOGRAPHY ON PRICE, TRADE AND MARKET STABILIZATION POLICIES

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PROJECT ON AGRICULTURAL PLANNING AND POLICY ANALYSIS

IN LATIN AMERICA AND THE CARIBBEAN
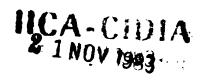
(PROPLAN/AP)

COLLECTION OF CONTRIBUTIONS

ANNOTATED BIBLIOGRAPHY ON PRICE,

TRADE AND MARKET STABILIZATION POLICIES

Lehman Fletcher (Ed.)

INTER-AMERICAN INSTITUTE FOR COOPERATION ON AGRICULTURE

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FOREWORD

The purpose of this collection is to present the work done by consultants, groups and institutions connected, now or in the past, with PROPLAN Projects of the Inter-American Institute for Cooperation on Agriculture (IICA).

IICA is an institution of technical cooperation. It's on-going concern is to improve the quality of its action in support of requesting member countries For this reason, as part of its effort to improve its own performance and skills, the Institute is interested in finding other organizations working in similar fields, in order to develop ties of cooperation. Thus IICA holds a number of agreements with different institutions working in the area of planning and management for development. These agreements covers joint research and documentation actions and sharing of experiences.

This document was written in 1980 specifically as a contribution to the Project on Agricultural Planning and Policy Analysis in Latin America and the Caribbean, PROPLAN/AP, by Lehman Fletcher and a group of researchers from Iowa State University, Department of Economics, as an annotated bibliography on price, trade and market stabilization policies.

The PROPLAN/AP Project is funded jointly by IICA and the Agency for International Development.

I. PRICE CONTROLS
AND
SUPPORT PRICES

Green, Richard D., Zuhair A. Hassan and Stanley R. Johnson. (1979) "Price
    Elasticity Estimates From Family Expenditure Data: An Application of
    the Extended Linear Expenditure System," Canadian Journal of Economics
    27(1), 41-52.

Cross section data have always been used for estimates of income effects
on family expenditures. Estimation of price elasticities has always been
done using time series data.

In this paper, the estimation of price elasticities is accomplished
using cross section data using a. specialization of the extended linear
expenditure system (ELES). This system treats the Engel curves as reduced
form equations and is utilized to simultaneously estimate price and income
elasticities of demand.

Lele, Uma (1976) "Considerations Related to Optimum Pricing and Marketing
    Strategies in Rural Development," a paper presented for presentation
    at the XVI International Conference of Agricultural Economists, Nairobi,
    Kenya, July 26-August 4, 1976.

The author advocates the use of price and supply stabilization programs
involving the fixation of maximum and minimum prices and buffer stocks.
The factors that need to be considered in the fixation of maximum and mini-
mum prices are discussed.

Due to the sensitive political conditions of the urban centers, govern-
ments commit themselves to controlling the level of prices and ensuring
adequate food supplies to urban centers. This can be accomplished by:
a) fix prices ranging from the farm gate to the consumer; b) use imports
to stabilize domestic prices and supplies; c) retail distribution (it has
been confined to urban centers).

The effects of the urban-oriented pricing and marketing strategies is
discussed. According to the author, government intervention has been destabi
lizing rather than stabilizing.

Finally, another objective of pricing policy followed by government is
to assure a minimum return to resource use.

Price stabilization is discussed as well as the considerations that
have to be examined. These are: costs of holding buffer stocks vis-a-vis
alternative uses of government resources; the effect of price stability on
production incentives; and the incidence of taxation and/or subsidy by
sectors and classes.

Mellor, John W. (1978) "Food Price Policy and Income Distribution in
    Low-Income Countries," _Economic Development and Cultural Change_, 27(1),
    October 1978, 1-26.

    The purpose of the paper is to delineate the component parts of a
general equilibrium analysis of the relation of food price policy to
income distribution.
    A given change in foodgrain prices causes a larger percentage change
in the real income of low income consumers and a larger absolute change
in the real income of high income consumers.
    As far as producers is concerned, the effect of a given change in
foodgrain prices falls on the producer with the largest marketing. When
prices and output are changing a policy of price stabilization will destabilize
small producers' income and stabilize consumers' income and large producers'
income.
    Change in relative prices play a limited role in the short run in
increasing agricultural production. It should be used in conjunction with
technological change in agriculture.

Merrill, William. (1967) "Setting the Price of Peruvian Rice," _American
    Journal of Agricultural Economics_, 49, May 1967, 389-402.

    The Peruvian government buys and sells most of the imported and
domestic rice. This paper deals with a methodology so that the goals
of high farm price, low consumer price, reduction of imports, and break
even on the government's wholesale operation can be analyzed and presented
to decision makers.

Nguyen, Dũng (1977) "Intersector-Distributional Implications of Agri-
cultural Technical Progress in an Open Economy: An Extension," American
Journal of Agricultural Economics, May, 1977, pp. 370-374.

The paper is concerned with intersectoral income distribution--producers
versus consumers. The akino and Hayami (A-H) and the Hayami and Hert (H-H)
models are extended to take into account an open economy where the market
price is subject to a ceiling and the government has to import a certain
amount in order to meet domestic demand.
The implications of different levels of ceiling prices as opposed to
market prices are analyzed by the author by looking at change in consumers'
surplus, change in producers' surplus, change in cost of production and
change in producers' revenues,
The paper contains estimates of average Annual Benefit in Japan for
rice breeding research.

Paul, Allen B. "Food Price Controls Reconsidered."

The author sets out to analyze the purpose and consequences of price

ceilings on food products and to explore some alternatives which have been

suggested.

Regulation of food prices can be accomplished in different manners:

1. Comprehensive ceilings on foods. This raises the problem of

interfering with relative prices. Some type of resource transfers could

be managed if selective price controls were exercised. Finally, price

ceilings do not improve the distribution of food according to equity

criteria.

2. Selective ceilings on foods. The problem here is the criteria

used to define the "food essentials" that are to be controlled.

3. Gross margins controls. The receipts of processor, wholesaler,

and retailer may not exceed the raw product cost plus a given mark-up

percentage in each accounting period.

Purcell, Wayne D. (1979) "A Case Against Mandatory Price Controls,"
    Cooperative Extension Service, U.S. Department of Agriculture,
    Virginia Polytechnic Institute and State University, Blacksburg,
    Virginia. January, 1979, No. 298.

The imposition of price ceilings on the beef industry has been counter-
productive. The purpose was to relieve consumers from high beef prices but,
in the '80's, limited supplies resulted in high prices.
The paper looks at what happened after the 1973 ceilings and the out-
look if they're imposed in 1979.

Rogers, George B. (1972) "Price Control Programs, 1917-71: Origins,
    Techniques, Effects on Food Prices," U.S. Department of Agriculture,
    Economic Research Service, Agricultural Economic Report No. 223.
    April, 1972.

This paper deals with the experience in U.S.A. with price control
programs. Usually, price control on food items is exercised by controlling
the margins at the wholesale and retail level. Farm prices are not directly
controlled.
Price controls are operated by setting pricing standards such as:
base period to be used, items to be excluded or included, permissible price
levels. Pricing techniques are: price freezes, formula pricing, controlled
margins or mark-ups, price ceilings.
The author indicates the following as the objective of the report:
    (1) effect of price controls on agriculture, with emphasis on
         food items;
    (2) circumstances that lead to the imposition of price controls;
    (3) provide the historical background to understand current events.

Saleh Afiff and C. Peter Timmer, "Rice Policy In Indonesia".

The paper provides an account of the price policies followed in Indonesia starting from 1950. Rice is the main staple in the country. The feasibility of various production plans is examined as well as the consumption feasibility of the amount produced. An analysis of expenditure elasticities for urban and rural Java is included.

This series of articles deals with the experience in U.S.A. with price controls during the war period.

Several issues are addressed among them: the effect of price controls on production, resource use, food distribution and rationing, etc. The different statutory arrangements and controls for prices are also discussed.

Paarlberg, Don. "Production and Distribution Problems Under Direct Price Controls."

Mehren, George L. "Stabilizing Supplies and Prices: Direct Price Control in Food and Agriculture."

Black, John D. (1943) "Agricultural Price Policy, January 1943," Journal of Farm Economics, Vol. XXV, No. 1, February 1943, 1-35.

Ady, P. (1968) "Supply Functions in Tropical Agriculture," Bulletin of Oxford Institute of Economics and Statistics, Vol. 30, No. 3, May, 155-187.

Dean, Edwin R. (1965) "Economic Analysis and African Responses to Price," Journal of Farm Economics, Vol. 47, May, 402-408.

Ghoshal, Animesh (1974) "The Supply Response of Liberian Rubber Farmers," Malayan Economic Review, Vol. 19, No. 2, 105-125.

Labys, Walter C. (1973) "A Lauric Oil Exports Model Based on Capital Stock Supply Adjustment," Malayan Economic Review, Vol. 18, No. 1, 1-10.

Gwyer, G. D. (1971) "Long- and Short-Run Elasticities of Sisal Supply," Eastern Africa Economic Review, Vol. 3, No. 3, 20-30.

Maitha, J. K. (1969) "A Supply Function for Kenyan Coffee," Eastern Africa Economic Review, Vol. 1, No. 2, 62-71.

Maitha, Joseph K. (1970) "Productivity Response to Price: A Case Study of Kenyan Coffee," Eastern Africa Economic Review, Vol. 2, No. 2, 31-37.

One of the main factors to be considered in any input policy is the effect that the policy will have on output. It is for this reason that estimating the supply function for the products which use the inputs needs to be included.

The articles on the supply functions contain real applications to countries dependent on a few products as a source for foreign exchange.

Bowbrick, P. (1976) "Market Margin Investigations and Price Control of Fruits and Vegetables," Ir. Journal of Agricultural Economics and Rural Sociology, Vol. 6, 9-20.

Clark, Ralph (1957) "The Economic Determinants of Jute Production," Monthly Bulletin of Agricultural Economics and Statistics, Vol. VI, No. 9, September, 1-10.

Dubey, V. (1963) "The Marketed Agricultural Surplus and Economic Growth in Underdeveloped Countries," The Economic Journal, Vol. LXXIII, No. 292, 689-702.

Hallberg, M. C. (1975) "Effects of Milk Control Studied in 83 Markets," Sci. Agric., Vol. 23, No. 1, page 16.

Houck, James P. (1973) "Some Aspects of Income Stabilization for Primary Producers," Australian Journal of Agricultural Economics, December, 1973, 200-215.

Houck, James P.; Ryan, Mary E. and Abraham Subotnik (1972) "Dynamic Supply and Demand Model of the Market for U.S. Soybeans and their Products," Soybeans and Their Products, University of Minnesota, Minneapolis, Minnesota.

Josling, T. E. and Donna Hamway (1972) "Distribution of Costs and Benefits of Farm Policy," Burdens and Benefits of Farm-Support Policies, Agricultural Trade Paper No. 1, Trade Policy Research Centre, London, England.

Kzray, Mübeccel and Jan Hinderink "Interdependencies between Agroeconomic Development and Social Change: A Comparative Study Conducted in the Cukurova Region of Southern Turkey."

Manchester, Alden C. (1978) "Dairy Price Policy: Setting, Problems, Alternatives," U.S. Department of Agriculture; Economics, Statistics, and Cooperatives Service, Agricultural Economic Report No. 402.

Mellor, John W. and Ashok K. Dar (1968) "Determinants and Development Implications of Foodgrains Prices in India, 1949-1964," American Journal of Agricultural Economics, Vol. 50, No. 4, 962-974.

Preston, Lee E. "Market Control in Developing Economies."

Robinson, K. L. (1963) "Market Structure--How Important in Explaining Long-Run Price and Output Behavior?" American Journal of Agricultural Economics, Vol. 45, November, 878-879.

Shafer, Carl E. (1968) "The Effect of a Marketing Order on Winter Carrot Prices," American Journal of Agricultural Economics, Vol. 40, No. 4, 879-887.

Tisdell, C. (1972) "Some Circumstances in Which Price Stabilization by the Wool Commission Reduces Incomes," Australian Journal of Agricultural Economics, August, 1972, 94-101.

Tolley, George S. and Peter A. Zadrozny (1975) Trade, Agriculture, and Development, Ballinger Publishing Company, Cambridge, Massachusetts.

"Direct Subsidies on Inputs"

The objectives of the paper are stated by the authors as being to provide a framework for examining the effects of government and marketing boards taxes and subsidies on land and labor utilization in the Nigerian agriculture.

By using a multicrop production function the authors examine the effects of taxes on resource allocation where initial quantities of resources used in the farm are utilized at the point where MVP equal their off-farm acquisition price. The same framework is later extended to analyze the situation where MVP of resources in the farm is between their salvage and acquisition price. Finally, a framework is provided using a Cobb-Douglass function to minimize the allocative distributions due to taxes on marketing board crops.

Empirical evidence is provided for the restricted model and a mathematical model is developed studying taxation of crops and subsidies on inputs.

Oi, Walter Y. (1961) "The Desirability of Price Instability Under Perfect Competitions," Econometrica 29, January, pp. 58-64.

This paper analyzes the behavior of a competitive firm faced with an uncertain demand, which takes the form of an instability in the price of the output, such that time price is taken to be a stochastic variable. The analysis reveals the conclusion that instability in prices will always result in greater total returns for the competitive firm under the assumption that firms maximize short run profits during each period of time, and the marginal cost of each firm is upward sloping throughout its relevant range, such that producers could make more profits when the price of the good varies, than when its price is stabilized at the arithmetic mean of variance.

Paish, F. W. and P. T. Bauer. (1952) "The Reduction of Fluctuations in the Incomes of Primary Producers," Economic Journal, 62(248), December, pp 750-80.

They presented a proposal for reducing the violence and magnitude of temporary fluctuations in the income of primary producers. They examined the supply restriction schemes in the inter-war period and the stabilization schemes of the post-war British Colonial Policy that were used. They tended to maintain or to raise producer incomes. They intended to show their adoptions were used in an incorrect way such that not only prolonged the difficulties the government intended to solve, but have also tended to restrict the supply.

Turnovsky, Stephen J. (1976) "The Distribution of Welfare Gains from

Price Stabilization: The Case of Multiplicative Disturbances,"

International Economic Review, Vol. 17, No. 1, February, 133-148.

  1. Introduction

  2. The Model

  3. The Distribution of Welfare Gains

  4. Conclusions

Massell, integrating the conclusions of Waugh and Oi and assuming

restrictively linear demand and supply curves with additive stochastic

disturbances, showed: (1) producers lose (gain) from price stabilization

if the source of instability is random shifts in demand (supply); (2) Con-

sumers lose (gain) from price stabilization if the source of instability

is random shifts in supply (demand); (3) Where both demand and supply are

random, the gains to each group are determined according to the relative

size of the variances and to the slopes of demand and supply curves;

(4) Total gains from stabilization are always positive (gainers compensating

losers) if the demand and supply curves are not perfectly elastic; if so,

all gains tend to zero. With only minor modifications, the same results

hold assuming non-linear functions as long as the stochastic disturbances

are still additive. Distribution conclusions have major modifications

when multiplicative stochastic disturbances are assumed. The author includes

in his partial equilibrium framework, assumptions of non-linear functions,

a self-liquidating buffer stock and ignore any storage and administrative

costs related to operating such stock. An important consideration is that

with random disturbances occurring in both sides of the market (supply and

demand) the stabilized price will differ from the mean of the fluctuating prices to have a self-liquidating buffer stock.

Assuming multiplicative random disturbances, the desirability of price stabilization does not depend upon the source of the price instability, which is the case when additive disturbances are assumed, but only upon e true shape of the deterministic components of the demand and supply curves. Generally, producers gain and consumers lose from stabilization if demand is elastic and supply inelastic; if demand is inelastic and supply is elastic, consumers tend to gain and producers tend to lose.

An example of log-linearity (constant elasticity functions) with multiplicative disturbances is illustrated. Under this functional specification, producers gain from stabilization only if the elasticity of demand exceeds unity, if not they lose, but consumers always gain from stabilization, irrespective of the underlying elasticities, the allocation of welfare gains in this specific case (of particular interest because it is the exact multiplicative analogue of Massell's linear-additive model) is asymmetric.

Another example is presented through a linear function specification, where producers lose from stabilization if the price elasticity of demand is less than half the price elasticity of supply. In this linear case, consumers lose if the supply curve is relatively inelastic compared to the demand curve. Reversing these elasticity relationships would also reverse the gaining and losing relationships.

The main conclusion the author states in this paper is the importance of the nature of the stochastic disturbances when assessing the distributional effects of stabilization policies: The assumption of multiplicative

disturbances can be justified as naturally as additive disturbances, with either assumption price stabilization will lead to a gain in total welfare.

Turnovsky, Stephen J. (1978) "The Distribution of Welfare Gains from
Price Stabilization: A Survey of Some Theoretical Issues," Stabi-
lizing World Commodity Markets, (F. G. Adams and S. A. Klein, eds.)
Lexington: Heath Lexington, pp. 119-48.

The purpose of this paper is to survey some of the most recent devel-
opments about this topic which were first stated by Waugh-Oi-Massell.
Here is considered the case where demand and supply functions are nonlinear
and the stochastic disturbances enter multiplicatively, such that this
specification lends to substantial modification of many of Massell's con-
clusions. (Massell's work deals with linear demand and supply curves and
additive disturbances.) It is also considered the welfare effects for
both producers and consumers of stabilizing prices in the case where firms
make their supply decisions on the basis of expected prices, before they
learn the actual market price, and are unable to modify these decisions
in the short run.

Briefly considered is how the Waugh-Oi-Massell model can be extended
to deal with the worldwide nature of current inflationary conditions. It
is also considered an alternative form of government intervention (like
government influences on movement of prices by announcing forecasts which
in turn influence the behavior of private producers) rather than entering
the market directly. Finally a general extension of the basic Waugh-Oi-
Massell model is considered through the multimarket situation in a multi-
commodity context.

One of the major conclusions is that even though price stabilization
always improves aggregate welfare, the distribution of these welfare gains

Turnovsky, Cont'd.

in the society is highly sensitive to the precise specification of the
model and the nature of the stochastic disturbances.

Waugh, Frederick V. (1944) "Does the Consumer Benefit from Price Instability?"
Quarterly Journal of Economics, August 1944, pages 602-614.

Waugh supports the idea that consumers benefit from price instability.
Using consumer surplus as an indicator he concluded that consumers will
enjoy a greater average consumer's surplus when prices are changing.

The analysis is presented using the price of one commodity and subse-
quently is extended to n commodities. The basic results are proven to hold
for the n commodities case.

Finally, the basic result is explained once more using indifference
curve analysis and in terms of money.

Waugh, Frederick V. (1966) "Consumer Aspects of Price Instability,"
Econometrica 34(2), April pp. 504-8.

In this article makes use of graphic tools to prove that welfare as-
pects of price stability depend upon the level at which the price is sta-
ilized and whether one is concerned with welfare of the consumer or of
the producer; such that if prices are stabilized at a very low level the
producer is harmed and the consumer benefits, but if the prices are sta-
bilized at a very high level, the opposite will occur.

Waugh, Frederick V. (1945) "Does the Consumer Benefit from Price Insta-

bility? Reply," <u>Quarterly Journal of Economics</u> 57, February, pp.

301-3.

He replied by saying that he certainly did not intend to conclude

that consumers would be harmed by any price stabilization, regardless of

level; but, however, he attempted to show that stabilizing the price of

a commodity at a level equal to, or higher than, the arithmetic mean of

the unstabilized prices is harmful to the consumer.

II. DOMESTIC AND INTERNATIONAL PRICE STABILIZATION

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Ady, P. (1953) "Fluctuation in Incomes of Primary Producers: A Comment," _Economic Journal_ 63, September, pp. 594-607.

Basically, Ady examined the formula given by Paish and Bauer, and she concludes that since the use of the formula depends so much on guess-work, its use is impracticable.

Bauer, P. T., and F. W. Paish. (1954) "The Reduction of Fluctuations in the Incomes of Primary Producers Further Considered," _Economic Journal_ 64, December, pp. 704-29.

he principal purpose of this article is to reply to P. Hill, P. Ady ind Milton Friedman. Bauer and Paish argue mainly that the inflation lem brought up by Hill and Ady is essentially irrelevant to the problem reducing fluctuations in producers incomes; and that the attempt to reduce fluctuations in incomes rather than merely in prices, as being suggested as preferable by the two ladies, is that violent accidental fluctuations in output with prices constant may have economic and social effect less frequent than violent fluctuations in prices with output constant, such will reduce instability. Also they think that there is no real problem in preventing year-to-year fluctuations in producers' prices and output such that the effects of inaccurate forecasts of output and price on the operation of their formula as discussed by Hill and Ady is also trivial. With respect to Professor Friedman the differences that they mainly appointed were about the functions of government in societies at different stages of development, such that in the case of underdevelopment economies is not true that free market concepts are better alternatives as suggested by Friedman.

Blandford, D. and J. M. Currie. (1975) "Price Uncertainty--The Case

for Government Intervention," Journal of Agricultural Economics

26(1), January, pp. 37-51.

This article presents the relevant features of the behavior of farm-
ers in the face of uncertainty about the price of the agricultural product.
Secondly is examined the effects.of guaranteed producer-price scheme on
the welfare of producers, consumers, and taxpayers. The authors conclude
that in the face of production lags and price uncertainty, there is likely
to be a misallocation of resources within the industry concerned; and in
the sense that farmers are predominantly risk adverse, it is doubtful that
the resulting industry output would be in any sense "socially optimal".
Therefore they suggested that in case of producers uncertainty, government
intervention should be considered, such as guaranteed price policy designed
to eliminate these types of problems.

Blandford, David and Lee, Sean. (1979) "Quantitative Evaluation of

Stabilization Policies in International Commodity Markets," American

Journal of Agricultural Economics, Vol. 61, No. 1, February, 1979,

128-134.

1. Empirical Application of Stabilization Theory

2. Simulation Analysis of Stabilization Policy

3. Optimization Analysis of Stabilization Policy

4. Some Problems in Modeling Instability

5. Concluding Comments

An overwhelming concentration on the single objective of price stabi-

lization and the general assumption that the policy maker behaves "optimally"

to stabilize the price at the mean, are limitations that have carried

analysts towards the development and use of more realistic market analogues

through which the temporal effects of various stabilization policies on

prices, incomes or economic surplus can be determined. The main analytical

method used has been situation where rules for market intervention are a

basic component. The most widely used are storage rules (quantity rules

and price rules) to determine the operation of a commodity reserve or

buffer stock. Econometric dynamic market models looking to explain mainly

demand and supply and price formation or inventory behavior are the most

interesting compared to most dynamic models. Even though simulation is a

flexible approach, mathematical optimization is necessary to identify

"optimal" policies, those that most efficiently achieve a given set of

objectives. The greatest potential of optimization lies in the application

of optimal control theory to the stabilization of dynamic commodity markets as a method for evaluating the effects of alternative stabilization objectives, instruments and decision rules in the presence of system disturbances, since the best is most times the most important source of variation in commodity markets. Models for empirical analysis of stabilization policy should reflect adequately the nature, source and transmission of instability in the market system. Two sources of fluctuations are usually incorporated in commodity models: systematic factors (predictable and frequently identified as "acceptable" market instability, examples are population, incomes and technology) and non-systematic factors (indeterminate or difficult to specify explicitly such as weather). Most attention has been focused on instability derived from the second factor mentioned and assumed to be reflected in residual error terms. There are two alternative methods of using these disturbances: first the actual residuals from least squares regression are used to assess the impact of policy response over a particular period. The other method uses the regression residuals to specify a probability distribution for system disturbances. Both methods raise interesting issues, the first one respect to heteroscedasticity of the true residuals even if the estimates are homoscedastic. The second method brings up questions respect to the validity of constant variance and normality assumptions, and the use of dummy variables to account for "outlier" in dependent variables (weather). Careful analysis of the residuals could permit a better decision when assuming either additive or multiplicative disturbances.

Candler, W. and Alastair McArthur. "Efficient Equalization Funds for

Farm Prices," American Journal of Agriculture Economics 50,

February 1968, pp. 91-110.

The article is complementary to one by Bauer and Paish. The author

considers the selection of mathematical functions for the determination

of the equalized price. The objective of an equalization fund is to accept

a series of market prices over a period of time and transform these into

equalized prices to farmers, so that the equalized prices have a lower

variance than the original market prices. Here it is shown that the sug-

gestion of an equalized price calculated as a moving average, with equal

weights of previous prices, is appropriate only if fluctuations in the

equalization fund are of no interest. Otherwise, the main purpose in the

study was to try to avoid excessive fluctuations in the equalization fund,

such that most of the market price should be paid out in the equalized

payment within the first or second years of receipt. Therefore, the math-

ematical function selected will also avoid any danger of a major separa-

bility between market price and equalized payout in the event of

change in market price levels.

Ezriel Brook, Enzo Grilli, and Jean Wallbroeck. (1978) "Commodity Price
Stabilization and the Developing Countries," reprinted from Banco
Nacionale del Lavoro Quarterly Review, No. 124, March, 79-99.

1. Commodity Price Stabilization: The Income Effects

2. Commodity Price Stabilization: The Welfare Effects

3. Integration of Income and Welfare Effects

4. The Income Effect of Price Stabilization: Empirical Analysis

5. Conclusions and Qualifications

After establishing the importance of price stabilization for LDCs,
the authors separate the effects of price stabilization on income effects
and welfare effects. Their contribution consists of the integration of
both effects. The entire analysis assumes linen demand and supply schedules
with additive stochastic disturbances based on a partial equilibrium model.
Export revenues (income effect) will be stabilized or destabilized according
to the origin of price instability, either from the demand or the supply.
Price elasticities are important for the size of the difference between
stabilized and unstabilized revenues but do not affect the general conclusions.

The results of the earlier analysis by Waugh, Oi, and Massell are
summarized. According to the origin of price instability (shifts in either
demand or supply) determine if producers or consumers benefit from it. Net
gains are obtained when both sectors are considered together. With gains
compensatory losers, global welfare will always be positive and everybody
happier with price stability.

Massell's analysis was extended later by Hueth and Schmitz for inter-
national traded goods. Massell's results even for non-linear demand and

supply functions as long as additive stochastic disturbances are assumed; when multiplicative stochastic disturbances are assumed, some of these results do not hold any longer.

The decomposition of the welfare results obtained by Massell and by Hueth and Schmitz into pure welfare effects (expected difference between the costs of producing a commodity in a stabilized and non-stabilized market) are always positive for both producers and consumers. Complementarily, income effects are positive for producers when instability is originated by a supply shift and so consumers when by a demand shift. Income effects are negative for producers when a demand shift originates instability and so for consumers when a supply shift is the origin. Importance of the income effect for LDCs to make a decision with respect to market stability is stressed according to whether these countries are consumers (importers) or producers (exporters) of certain commodities.

For the empirical part of this paper, a sample of seventeen primary commodities (12 agricultural and 5 minerals and metals) were included; their eligibility was determined according to their technical suitability for buffer stock operation. Twenty observations, from 1954 to 1973, were used to estimate the regression coefficients. Quantity deviations from trends (in world exports and prices) were regressed against price (or export unit value) deviations from trends. Linear and semi-log forms were used.

Income effect of price stabilization on exporters and importers is ascertained from the sign of the regression coefficient. Conclusions are qualitative in nature, but empirically useful to make decisions. If the

regression coefficient is positive, the income effect is favorable to consumers (importers) and unfavorable to producers (exporters). If negative, the income effect is favorable to producers (their revenue is higher with stable than with unstable prices) and unfavorable to consumers (their expenditures in a stabilized market is larger than in an unstable market).

The authors draw two preliminary conclusions: There is only a limited number of primary commodities for which price stabilization can be assumed to be clearly beneficial (some agricultural products), and there seems to be no benefit for developing countries in terms of income by stabilizing prices of minerals and metals. Exclusive concentration on income and price welfare gains and losses within a partial equilibrium and linear demand and supply functions are explicitly stated as drawbacks of the analysis.

Falcon, Walter P. (1964) "Farmer Response to Price in a Subsistence

Economy: The Case of West Pakistan," Papers & Proceedings--Ameri-

can Economic Association 76, May, pp. 580-91.

The purpose of this paper is to examine the direction and magnitude

of farmer responses to price in a low income economy. The discussion

here is in the context of West Pakistan. The main conclusions arrived at

are that even in a low income region such as West Pakistan, there may be

significant acreage responses to changed relative prices. There is a

limited price response in the allocation of nonland factors (i.e. yield)

because changes in rainfall, irrigation water availability and other

geographic factors still are the major determinants on changes in yield.

The author also suggested that it is possible to shift the composition

of agricultural output by changing the relative prices within agriculture.

If there is a thoroughgoing reform in the services and facilities made

available to farmers, there will be response to economic incentives such

as higher price policies. It was also observed that uncertainty is a

major factor in farm planning and it is likely that price responses would

be higher if farmers were assured of guaranteed prices.

Friedman, Milton. (1954) "The Reduction of Fluctuations in the Incomes

of Primary Producers: A Critical Comment," Economic Journal 64,

December, pp. 698-702.

He concludes that the particular plan that Bauer and Paish recom-

mended is too arbitrary, introduces unnecessary uncertainty and has un-

desirable effects on incentives. He also mentioned that a free market

is a better alternative to government intervention as suggested by Bauer

and Paish.

Grubel, Herbert G. (1964) "Exchange Earnings and Price Stabilization

Schemes," The American Economic Review 54, June pp. 378-85.

This paper examines under what circumstances Rognon Nurkse's asser-

tion is valid that countries will fail to maximize foreign exchange earn-

ings if they do stabilize prices. The main conclusion that he arrived at

from his model is that the introduction of world primary commodity sta-

bilization schemes does not necessarily increase total foreign exchange

earning accruing to the producing countries. If demand is typically less

elastic during periods of high demand than it is during periods of de-

pression, buffer stock schemes are likely to decrease foreign exchange

earnings below what they would have been in the absence of such schemes;

because stable prices over the cycle forego the opportunity to exploit

the inelasticity of demand during boom periods. Under these circumstances

buffer stock schemes, therefore, lead to a conflict between stabilization

and earnings-maximization objectives pursued by government agencies. Given

the same demand conditions, however, buffer fund schemes do not present

such a conflict between objectives, because they allow foreign prices to

fluctuate and exploit the inelasticity of boom demand schedules.

Harris, Duane G. (1977) "Inflation-Indexed Price Supports and Land Values," American Journal of Agricultural Economics 59(3), pp. 489-95.

Harris developed a theoretical model of land value determination as a function of cost-indexed support prices. The analysis is within the framework price uncertain world, where policy makers are allowed to control the percentage of nonland operating cost and the percentage of land costs covered by a support price. The support-price mechanism is generalized to accommodate either a target price or loan rate program. Harris concludes that the particular scheme used to implement a general cost-indexed support-price policy is crucial to the resulting impact on future land values. It also will have an impact on the social cost of the farm program for years in which actual commodity price falls below the support price. Implementation of a policy that quaranteed a rate on land greater than the market capitalization rate could have substantial impact on land values before the policy authorities can make the necessary adjustments.

Hueth, Darrell and Andrew Schmitz. (1972) "International Trade in Inter-
mediate and Final Goods: Some Welfare Implications of Destabilized
Prices,[*]" The Quarterly Journal of Economics, Vol. LXXXVI, No. 3,
August, 351-365. ([*]Giannini Foundation Paper No. 316)

    1. Introduction

    2. The Massell Results

    3. Final Product Spatial Price Models

    4. International Welfare

    5. The Generalized Model

    6. Price Instability in Both Intermediate and Final Goods Trade

    7. Summary and Conclusions

B. Massell integrated the earlier results of the analyses done by
Waugh (supply shifts where producers have a net gain) and Oi (demand shifts
where consumers have a net gain) and now the authors extend their analysis
to internationally traded final and intermediate goods. Using excess
supply and demand curves, the authors show that the country in which the
price instability arises will always prefer stabilized prices in domestic
compensation is paid to losers by the gainers. Price instability generated
by a shift in the supply curve in the importing country only results in
net gains for producers and consumers in the exporting and so for consumers
in the importing country; if producers compensate consumers in the importing
country, both would prefer price stability. Price instability generated
by a shift in the supply curve of the exporting country and for stability
for the exporting country. Even though unfeasible in reality, compensation
paid between importing and exporting countries would make price stability
always preferable compared to instability.

This two-country (one exporter, one importer) one-commodity model is then generalized. Dealing with final and intermediate goods trade; if price instability generated from abroad affects only final goods causing the demand in the intermediate goods market to shift, results in gains for final goods producers while intermediate producers stay unaffected. If price instability generated from abroad affects the intermediate goods market causing the supply curve in the final goods market to shift, results in gains for both intermediate and final goods producers while consumers of final goods are unaffected.

Finally, this paper shows that the desirability of price stability depends critically on the source of price stability; this is what determines who gains and who loses.

Just, Richard E. (1977) "Theoretical and Empirical Possibilities for
Determining the Distribution of Welfare Gains from Stabilization,"
American Journal of Agricultural Economics, Vol. 59, No. 5, December,
912-917.

1. Non-linearities

2. The Form of Disturbances

3. Risk Response

4. Trade Controls and Institutional Considerations

5. Private Versus Public Storage

6. Choice of Stabilization Policy Controls

7. The Surplus Concept Used for Measuring Welfare Impacts

8. Conclusions

Adequate investigation on functional forms is required when empirical
work on stabilization is done because the assumed form of the supply and
demand curves will determine who gains and who loses, a small variation
for such forms could reverse completely the results. Even more, when we
consider only the "relevant range" when estimating these functions, being
that the entire curve determines the results using the standard welfare
measure.

The assumption of additive (Massell) or multiplicative (Turnovsky)
random disturbances influences the quantitative and qualitative results
obtained in empirical studies. As much information as possible on such
disturbances should be used to decide on the nature of the disturbances
otherwise considerable effects may occur.

Gains from stabilization may be seriously biased downward (under

risk aversion) and optimal stabilization policy may be limited if risk

is not considered. Risk-responsiveness of farmers is more important than

.-ually assumed in empirical work.

Trade restrictions and institutional consideration affect heavily

the results of stabilization and empirically little or nothing has been

done here. Effects are different when tariffs are used as alternatives

to marketing boards as are those under competition compared to oligopoly

structures.

Only recently has empirical work been reported considering the impli-

cations of private storage when supply changes under stabilization policies.

Alternative stabilization controls considered empirically have been

price and quantity bands for buffer stock transactions but others such

as publically announced price forecasts, insurances, future market opera-

tions, and variable trade levies have not been yet.

Much criticism has been carried on with respect to the case of

consumer and producer surplus and since at this point it is the only feasible

measure available for welfare considerations. Deeper, better understanding

and application of these concepts is necessary. Interpretation of these

concepts are to be done for many specific situations.

The complexity of the issue of price stabilization is far beyond the

theoretical and technical capabilities we now possess for analyzing it.

The author considers that theoretical studies can be useful in showing

possible or potential consequences of particular aspects of problems that

occur in the real world. On the other side, empirical work deals with the real world situation deriving quantitative estimates relating the impact of present or suggested policies. Theoretical work is also a mean to identify important needs in empirical investigations.

Just, Richard, Ernst Lutz, Andrew Schmitz and Stephen Turnovsky. (1978)

"The Distribution of Welfare Gains from Price Stabilization: An Inter-

national Perspective,[*]"<u>Journal of International Economics</u>, Vol. 8,

No. 4, November, 551-563. ([*] Giannini Foundation Paper No. 467)

1. Introduction

2. The Model

3. The Distribution of Welfare Gains

    3.1 Gains to Producers

    3.2 Gains to Consumers

    3.3 Gains to Country

    3.4 Gains to World

4. Conclusions

This paper assumes non-linear demand and supply functions to examine

the benefits to producers and consumers in both exporting and importing

countries from stabilizing the price of internationally traded commodities

through buffer stocks. These functions are also assumed to have multi-

plicative stochastic disturbances, which in some cases is more realistic

than the additive nature assumed by Oi, Waugh, and Massell. The welfare

criterion of consumers' and producers' surpluses is used to assess welfare

gain from a stabilization scheme. The approach used here evaluates the

benefits from stabilization by considering the convexity or concavity

properties of their respective gain functions. This is done analyzing the

second partial derivatives of the gain function with respect to the various

random disturbances (one for each supply or demand function, foreign and

domestic). The authors include a table listing the welfare gains from

stabilization of the various stochastic disturbances (one for each supply and demand function, foreign and domestic). It is the convexity or concavity of the aggregate excess demand function that is relevant within this framework welfare effects of stabilization are in general intermediate so unambiguous conclusions can be drawn.

Producers will gain from stabilizing demand (whether they be foreign or domestic) if the domestic supply elasticity is low relative to the demand elasticities—if not, they will lose. Convexity of the excess demand function tends to result in smaller gains or greater losses from stabilization in either case; concavity has the opposite effect. Producers will lose if foreign supply is stabilized when the supply elasticity on either country is positive. Convexity of the aggregate excess demand functions tends to increase the desirability of stabilization for consumers both, in the case of demand and supply fluctuations, either of foreign or of domestic origin.

For an exporting country the desirability of stabilizing either domestic or foreign demand disturbances is uncertain. An importing country will lose from stabilizing foreign demand fluctuations. Stabilizing supply disturbances will reduce gains for the exporter and increase them for the importer when assuming, of course, convexity of the excess demand function. Considering that the aggregate excess demand function is not perfectly elastic (elasticity is an important determinant of the direction of welfare effects for all sectors involved), the world as a whole always gains from price stabilization, this, independently of the source of the random fluctuations. Gainers would compensate losers and still be better off than with price instability.

Konandreas, Panos A. and Andrew Schmits. (1978) "Welfare Implications of Grain Price Stabilization: Some Empirical Evidence for the United States," American Journal of Agricultural Economics 60, February, pp. 74-84.

Specifically the main purpose of this article has been to test whether or not grain price stabilization is a desirable policy from the point of view of the United States where instability in the grain market is created from both within and outside the country. It was shown that U.S. producers and consumers in the aggregate would benefit from feed grain price stabilization. However, the conclusion arrived at for wheat tended to suggest that price instability is desirable.

Labys, Walter C. (1980) "Commodity Price Stabilization Models: A Review and Appraisal," Journal of Policy Modeling, Vol. 2, No. 1, January, 1980, 121-136.

1. Theoretical Models

2. Empirical Models

3. Econometric Models

4. Improving Modeling Analysis

According to the theoretical models used until now, whether producers or consumers gain or lose will depend on: (1) the source of price instability, shifts in supply and demand curves, (2) the additive or multiplicative nature of the function disturbances, including their autoregressive properties, (3) the nature of producer response including the formation of expectations and risk, (4) the concept of surplus used, (5) the choice between partial and complete stabilization, (6) the identification of importing or exporting countries as distinct from consumers and producers. Empirical stabilization models normally use real-world data in estimating parameters and other calculations with a form of theoretical model. Their results respect to welfare and income gains perceived for different groups, countries, or commodities vary according to: (1) the estimated parameters used, specifically the price elasticities of demand and supply, (2) the choice between partial and complete price stabilization, (3) the source of price fluctuations, supply and demand shifts, (4) the nature of expectations and risk response, (5) the size of the assumed buffer stock, itself a function of the width of the price range to be defended, (6) the time period analyzed.

Stabilization studies have used basically four types of models:
(1) individual commodity models, (2) multi-commodity models, (3) single
commodity-single country models, (4) multiple-commodity-multiple country
models. Demand functions are typically dependent on prices and income,
supply on past prices and other production influences and prices on
excess demand or stock changes. This type of models are capable of
providing conflicting results, their outcomes and underlying quality depends
on: (1) the structural specification (disaggregation, detail, nonlinear
relationships), (2) the estimation method employed as well as the simu-
lation format, (3) the use of stochastic simulation (prices do not have
to necessarily be controlled 100 percent of the time), (4) the use of
stochastic control or other optimization techniques to optimize buffer
stock intervention rules, (5) the computation definition used for measuring
welfare effects, (6) the inclusion of financial aspects of buffer stock
operation (management, storage and capital stocking costs).

Aspects to be improved in commodity modeling are: incorporating a
general equilibrium approach, deepening of simple surplus analysis, care-
ful functional specification, including the nature of stockholding on
commodity market adjustments which would include simulation based on
stochastic processes, the use of partial stabilization schemes and a
closer look at the way disturbances affect the entire analysis.

Lovasy, Gertrud. (1945) "Does the Consumer Benefit from Price Insta-

bility?: Further Comment," Quarterly Journal of Economics 59,

February, pp. 296-300.

Miss Lovasy makes more comments about the article written by F. D.
Wough. She concludes that the mentioned statement seems to hold only so
long as prices do not all move in the same direction at the same time,
and the relative prices were thus different in different periods. Further-
more, there is no priori reason why prices should be stabilized at their
simple arithmetic average; such that what has been proved (by Levasy) is
not that stabilization as such is harmful for the consumer, but stabili-
zation at an arbitrarily defined level is.

Massell, Benton F. (1969) "Price Stabilization and Welfare," Quarterly

Journal of Economics 88, May, pp. 284-98.

This article has tried to reconcile the analyses presented by Walter
Oi and Frederick Waugh, concerning the gains to producers and consumers
resulting from a stable as compared to a fluctuating price. Using the
expected value of the change in producer and consumer surplus as a measure
of gain, it was shown that price stabilization, brought about by a buffer
stock provides a net gain to producers and consumers taken together.

Massell, Benton F. (1970) "Some Welfare Implications of International Price Stabilization," Journal of Political Economy 78, March-April pp. 404-417.

This paper deals with some welfare implications of price stabilization achieved by international buffer stock. Stabilization is taken to mean not a reduction overtime in price fluctuations, but a reduction in riskiness of this years's income as viewed by the producer of an agricultural commodity at planting time. (Income will depend in yield and price at the time of harvesting, which are stochastic variables.) Massell concludes that although a buffer stock may provide a large increase in welfare (to the producer) than would a forward contract, the former alternative is more expensive than the latter. The extent of a particular crop planted has positive relationship to the expected value of income earned from the sale of the crop and a negative relationship to variance of such income. Massell's framework is within the context of a linear model.

Niculescu, B. M. (1954) "Fluctuation in Incomes of Primary Producers: Further Comment," Economic Journal, 64, December, pp. 730-743.

Niculescu made more comments about the above articles, using again the Gold Coast cocoa example.

Richardson, R. A. and P. L. Farris. (1973) "Farm Commodity Price Stabili-
zation Through Futures Markets," American Journal of Agricultural
Economics 55(2), May, pp. 225-30.

This paper examines Houthakker's proposal using historical data on
soybeans. (Houthakker has suggested a program to stabilize commodity
prices through government operations in key future markets.) The con-
clusions arrived at are that implementation of Houthakker's proposal would
have caused more fluctuation in annual soybean prices during the 1953-1967
period than actually occurred. The proposal also fails to consider possi-
ble side effects on the future market. Finally the authors suggested that
if there are adverse effects, the government operations in the future
markets would not solve price instability problems.

Zucker, Albert. (1965) "On the Desirability of Price Instability: An
Extension of the Discussion," Econometrica 33, April, pp.437-41.

This article presents a further analysis on this topic first stated
by Walter Oi and Clem Tisdell (1963). He showed that under the assumption
of constant elasticity of supply, no advantage accrues to the firm from
the demand variability. However if the elasticity of supply is not approx-
imately constant in the relevant region, then the result depends on the
shape of the marginal cost curve (i.e. if MC curve is linear between 2
points P_1 and P_2, then the results depend on the elasticity of supply at
P_1; if $e_s = 1$, then profit remains unchanged; if $e_s > 1$, demand insta-
bility is favored; if $e_s < 1$, demand stability receives preference.)
Therefore if $r_s = kte$ and revenue (Pr Q) rather then (Pr) is stabilized,
producers don't lose anything and may gain since fluctuating price may
require costs to manage output effectively.

III. FOREIGN TRADE
POLICIES

EXCHANGE RATES

Dornbusch, Rodiger   (1975)   "Exchange Rates and Fiscal Policy in a Popular Model of International Trade," The American Economic Review, Vol. 64, No. 4, December, 859-871.

Hause, John C.   (1966)   "The Welfare Cost of Disequilibrium Exchange Rates," The Journal of Political Economy, Vol. 74, No. 4, August, 333-352.

Helliwell, John F.   (1979)   "Policy Modelling of Foreign Exchange Rates," Journal of Policy Modeling, Vol. 1, No. 3, September, 425-444.

Lewis, Jr., Stephen R.   (1968)   "Effects of Trade Policy on Domestic Relative Price: Pakistan, 1951-64," The American Economic Review, Vol. 58, No. 1, March, 60-78.

Penna, Julio Alberto   (1974)   "Optimal Storage & Export Levels of a Tradeable Product and Their Relationship with Annual Price Variability: The Case of Corn in Brazil," Ph. D. dissertation, Purdue University.

Porter, M. G.   (1978)   "External Shocks and Stabilization Policy in a Small Open Economy: The Australian Experience," Weltwirtschaftliches Archiv., Vol. 144, No. 4, 709-735.

Ritson, Christopher   (1970)   "The Use of Home Resources to Save Inputs: A New Look," Journal of Agricultural Economics, Vol. 21, January, 121-131.

Velga, Alberto   (1974)   "The Impact of Trade Policy on Brazilian Agriculture, 1947-1967 (Volumes I and II), Ph.D. dissertation, Purdue University.

EXPORTS

Ffrench, Ricardo F. and M. Davis (1968) "Export Quotas and Allocative Efficiency Under Market Instability," American Journal of Agricultural Economics, Vol. 50, August, 643-659.

Ihimodu, Isaiah Ifeyon (1977) "The Impact of Government Taxation and Control of the Marketing of Five Major Agricultural Exports of Nigeria," Ph.D. dissertation, University of Pennsylvania.

Just, Richard E.; Schmitz, Andrew and David Zilberman (1979) "Price Controls and Optimal Export Policies Under Alternative Market Structures," The American Economic Review, Vol. 69, No. 3, September, 706-714.

Leff, Nataniel H. (1969) "The "Exportable Surplus" Approach to Foreign Trade in Underdeveloped Countries," Economic Development and Cultural Change, Vol. 17, No. 3, April, 346-355.

Nzekio, Ernest P. (1973) "Stability, Export Taxation, and Economic Development: The Role of Cocoa Marketing Boards and Cocoa Stabilization Funds in Nigeria, Ghana, Ivory Coast, and Cameroun," Ph.D. dissertation, The University of Wisconsin.

Ohly, Jr., John Hallowell (1975) "Some Effects of Export-Policy in the Short-Run Distribution of Real Income in Post-World War II Argentina," Ph.D. dissertation, Boston University.

Van Duyne, Carl J. (1976) "Export Controls and Commodity Prices," Ph.D. dissertation, Stanford University.

Van Duyne, Carl J. (1975) "Commodity Cartels and the Theory of Derived Demand," Kyklos, Vol. 28, Fasc. 3, 597-612.

IMPORTS

(Cost of Protection)

Corden, W. M.   (1957)   "The Calculation of the Cost of Protection," Economic Record, Vol. 33, May, 29-51.

Dardis, Rachel   (1967)   "The Welfare Cost of Grain Protection in the United Kingdom," Journal of Farm Economics, Vol. 49, August, 597-609.

Dardis, Rachel   (1967)   "Intermediate Goods and the Grain from Trade," Review of Economics and Statistics, Vol. 49, November, 502-509.

Dardis, Rachel and J. Dennisson   (1969)   "The Welfare Cost of Alternative Methods of Protecting Raw Wool in the United States," American Journal of Agricultural Economics, Vol. 52, No. 2, May, 303-319.

Dardis, Rachel and E. Learn   (1967)   "Measures of the Degree and Cost of Economic Protection of Agriculture in Selected Countries," Technical Bulletin - United States Department of Agriculture, No. 1384, 1-69.

Dean, G. and N. Collins   (1967)   "World Trade in Fresh Oranges: An Analysis of the Effect of European Economic Community Tariff Policies," Giannini Foundation Monographs, No. 18, 1-70.

Dean, Gerald W. and Norman R. Collins   (1966)   "Trade and Welfare Effects of EEC Tariff Policy: A Case Study of Oranges," Journal of Farm Economics Vol. 48, No. 4, Part I, November, 826-846.

Johnson, Harry G.   (1966)   "Optimal Trade Intervention in the Presence of Domestic Distortions," in Trade, Growth and the Balance of Payments essays in honor of Gottfried Harberler, edited by Robert E. Baldwin et al., Chicago, Rand McNally.

Josling, T. E.   (1969)   "A Formal Approach to Agricultural Policy," Journal of Agricultural Economics, Vol. 20, No. 2, May, 175-195.

Mussa, Michael   (1974)   "Tariffs and the Distribution of Income: The Importance of Factor Specificity, Substitutability, and Intensity in the Short- and Long-Run," Journal of Political Economy, Vol. 82, No. 6, November/ December, 1191-1203.

Snape, R. H.   (1969)   "Sugar: Costs of Protection and Taxation," Economica, Vol. 36, February, 29-41.

Snape, R. H.   (1963)   "Some Effects of Protection in the World Sugar Industry," Economica, Vol. 30, February, 63-73.

Zusman, P.; Melamed, A., and I. Katzir   (1969)   "Possible Trade and Welfare Effects of EEC and "Reference Price" Policy on the European-Mediterranean Market for Winter Oranges," Giannini Foundation Monographs, No. 24, 1-41.

IV. BUFFER STOCKS
AND
BUFFER FUNDS

Abbott, John C. (1967) "Agricultural Marketing Boards in the Develop-
ing Countries," Journal of Farm Economics 49(3), August pp. 705-22.

Six types of boards are distinguished: advisory and promotional
boards, regulatory boards, boards stabilizing prices without engaging in
trade, boards stabilizing prices by trading alongside other enterprises,
export monopoly marketing boards, and domestic monopoly marketing boards.
Abbott gives a list of some boards for some countries, according to these
six categories. He also raises up the critical problems of board effic-
iency and gives some consideration to analyzing marketing board perfor-
mance. This is a good article for those who wish an introduction to the
theory of marketing boards.

Abbott, J. C. and H. Creupelandt (1967) "Agricultural Marketing Boards
in the Developing Countries: Problems of Efficiency Appraisal,"
Monthly Bulletin of Agricultural Economics and Statistics 16(9)
September pp. 1-9.

This article draws its attention to the difficulties involved in
the estimation of the efficiency of marketing boards in the developing
countries, and to the importance of devising effective ways of doing this.
The authors conclude that since marketing boards are a vital means of
implementing government policy, it is essential that these boards be a
dynamic agency for research and innovation to stimulate production and
provide guidelines for the whole process of marketing.

Abbott, J. C. and H. Creupelandt. (1969) "Stabilization of Internal
Markets for Basic Grains: Implementation Experience in Developing
Countries," Monthly Bulletin of Agricultural Economics and Sta-
tistics, 18(2), February pp. 1-9.

This article is concerned with the operation of limited buffer-
stock schemes by an organization which buys and sells grain in the mar-
ket in competition with private traders (i.e. World Food Programme WF?).
The authors conclude that the absence of incentives to increase agricul-
tural commodities supply for domestic consumption, pressures coming from
rapidly growing urban population and the effects of widely fluctuating
price levels on social welfare and political stability are inducing
governments in developing countries to seek effective intervention in
this field. Organizations such as the type above mentioned can make
a value contribution to control price fluctuations of agricultural
products on the domestic markets.

Bigman, D. and Shlomo Relitlinger. "Food Price and Supply Stabilization:

National Buffer Stocks and Trade Policies," Working paper, World Bank,

Washington, D.C., May, 1978.

This article is part of a study undertaken by the World Bank on

various aspects of food stabilization policies in developing countries.

The authors agree that not always will free trade in food commodities

provide instability in domestic markets and protectionist policies such

as buffer stock schemes will encourage food production and domestic mar-

ket stability in times of poor domestic harvest and/or high prices for

imported grain. Avoidance of protectionist trade policies, therefore,

can be a far more powerful instrument for stabilizing domestic grain

prices and ensuring the continuity of supplies than any reasonably sized

buffer stock. They also argue that the proposition arising from the

Waugh-Oi-Massell type analysis is only one among several objectives of

stabilization policy; and in most of the countries, rather than being

the combined and producer surplus the primary objectives of buffer stocks

and other stabilization policies, the primary objective is that to ensure

a regular flow of supplies to consumers and to meet the needs of vulner-

able sections of the population. Their assertion is based in FAO studies

that show that most countries rate this insurance of a continous flow of

supply as the main objective of their cereal stock policies. For their

work they make use of a stochastic simulation model. This model is an

open economy model, mainly concerned with examing stabilization policies

for food grains, and it examines explicitly random fluctuations in a

country's production and international price of grain. The model was

Bigman Cont'd.

used to evaluate the impact of trade and stock policies on stabilization.
Their main conclusion from their analysis was that in most cases, trade
and buffer stocks are strong substitutes for stabilizing a country's
food grain supply and price and the choice of any type of policy should
be made on this basis of cost effectiveness.

Chaiprauat, Olarn. "International Rice Buffer Stock Operations: A Sim-
ulation Study," in Adams and Klein (eds.), Stabilizing World Commodity
Markets, D. C. Health & Co. 1978, pp. 63-82.

The objectives of this study are: (1) To make stochastic simulations
of the world rice markets and resulting world prices of rice during a
20 year period from 1978 to 1979. (2) To estimate possible sizes and re-
source requirements of the international rice buffer stock operations in
order to stabilize the world price within given ranges around its long
term, normal trend, and (3) To assess profitability of the international
buffer stock operations at various rates of interest and other changes.
An econometric model of the world rice market was used to generate sto-
chastic international buffer stock simulations under the assumption that
the relative magnitude of weather-induced random distrubances on future
world rice output will be roughly the same as that of the past 20 years,
even though exact inter-temporal sequences of these shocks are allowed
to vary. Chaiprauat concludes that without the buffer stock arrangement,
the world price of rice will fluctuate rather widely around its long
term normal value depending on the particular sequences of the random
shocks. The international buffer stock authority can be established with
a minimum initial stock of its own rice in order to make sure that it
will not run out of accumulated stock in the early years of its operation.
Adequate financial resources at relatively low interest rates are neces-
sary to implement successful and profitable international buffer stock
operation since there is a possibility that although the operations of

Chaiprauat Cont'd.

the fund are sucessful, the authority may suffer a loss at the end of its
stipulated lifetime if the rate of interest on borrowed fund, storage and
other charges are too high compared with the normal rate of world price
increase.

Gislason, Conrad. (1960) "Grain Storage Rules," American Journal of Agriculture Economics 42, August pp. 576-595.

In this article two general types of models in the economic analysis of grain storage are developed. The private speculators' storage rule and a farmer's benefit storage rule in the group of a two-year time horizon model is first developed and second the mathematical problems inherent in predicting the effect of a storage rule in the unlimited time horizon model is introduced.

The private speculators' storage model assumes a known demand and some type of rational expectation in regard to the rise of next year's crop. This storage rule represents theoretically the actions in the aggregate of private speculators' storing for gain in a private economy. The farmer's benefit storage model examines the maximum benefits possible to obtain by farmers when storage is conducted on the basis of taking advantage of a change in price. The unlimited time horizon model differs from the two-year time horizon model in requiring a complete specification of the probability distribution of storage stocks. The basic assumptions of these two models are: Demand is assumed to be known, the distribution of crop sizes is assumed to be known, all the grain produced is assumed to be consumed either immediately or after storing, and the physical costs of storage are assumed to be of such a nature that the marginal costs are equal to average costs and are not affected by the level of storage undertaken.

Hawkins, E. K. (1958) "Marketing Boards and Economic Development in

Nigeria and Ghana," The Review of Economic Studies 26(1), October

pp. 51-62.

This paper has limited the discussion to the contributions made by

the boards in Nigeria and Ghana (established between 1947 and 1949) to

development. The analysis is through the use of the financial reports

of both the Ghana and Nigerian Boards up to the end of the year 1954.

Helleiner, Gerald K. (1966) "Marketing Boards and Domestic Stabilization

in Nigeria," The Review of Economics and Statistics 48, February

pp. 69-78.

This paper assesses the impact of three types of domestic stabili-

zation policies made by the Nigerian Marketing Boards for mainly five

crops of this country between 1947 to 1961. These three types of domes-

tic stabilization objectives are (1) Stability of export producer prices

(intra- and inter-season stability), (2) stability of income for the

producer farmer and (3) stability of the overall regional economy. Hell-

einer found that the intra-season producer price stability was a success-

ful program reducing the speculative activity, improving product quality

and orderly the marketing. The inter-seasonal instability of money pro-

duced prices was also successfully reduced for the   of cocoa. The

marketing boards had less success with the stabilization of farmer in-

comes than with producer prices.

Labys, Walter C. and Yves Perrin. (1976) "Multivariate Analysis of
Price Aspects of Commodity Stabilizations," Weltwirtschaftliches
Archives 112, pp. 556-64.

This paper presents empirical results of multivariate analysis of prices which reflect upon the potential for the financial success of the multi-commodity stabilization price scheme designed by UNCTAD based on the Keynesian plan for an international multi-commodity buffer stock program.

Sarris, A. H. and L. Taylor. "Buffer Stock Analysis for Agricultural

Products: Theoretical Murk or Empirical Resolution?" in Adams

and Klein (eds.), Stabilizing World Commodity Markets, D. C. Health

& Co., 1978, pp. 149-159.

The authors made a review of the theoretical reasons why it is im-

possible to state a priori who will benefit or be hurt by international

price stabilization and illustrate the relevance of these reasons in the

contexts of world wheat and feed grain markets. The work's outcome con-

cludes that the determination of which economic group would gain or lose

from price stabilization depends on empirical characteristics of the de-

mand curve, such that the degree of nonlinearity of the curve appears to

affect fundamentally the distribution of benefits. If trade is restricted,

then allocation of benefits among countries depends on the detailed dif-

ferences among their internal excess demand curves and the extent to which

they segregate their domestic markets from the rest of the world. If pro-

ducers' behavior is considered within the context of a linear free trade

model, it can be shown that contrast among countries is important in de-

termining whether they are helped or hurt by stabilization. Finally they

conclude that not all countries can expect to benefit from stabilization.

Since international compensation is unlikely, potential political obsta-

cles to international agreement on stabilization are forseeable.

Snape, R. H. and B. S. Yamey. (1963) "A Diagrammatic Analysis of Some Effects of Buffer Fund Price Stabilization," Oxford Economic Papers 15, July pp. 95-106.

The article is concerned with the analysis of buffer fund schemes on producer receipts and export receipts. The general conclusion is that a successful price stabilizing buffer fund scheme may have favorable, neutral, or unfavorable effects on total producer receipts or on total export receipts, depending on the particular circumstances of supply and demand. Two general approaches were taken on the analysis; first when the buffer fund operations affect neither the supply schedule nor the home demand schedule for the commodity and second when it affects the supply schedule, that it affects the home demand for the commodity and that it does not aim at complete producer price stabilization over the stabilization period. It is also assumed in this article that it is the prescribed price (the stabilized price) which matters to producers. In equilibrium, the home market price of the commodity is equal to the prescribed price (a producer has no course to sell to the buffer fund when the prescribed price is lower than the home market price). Then a buffer fund scheme can affect total producer receipts and total export receipts in several ways, because it alters relative prices confronting producers and home consumers of the commodity. Unless the elasticity of supply is zero, the quantity produced in each year is affected. The price per unit and the quantity taken in the home market is affected, and hence, also the quantity available for export and except where export demand is infinitely elastic, the price per unit of export sales is affected.

V. SUPPLY CONTROLS

Branson, R. E. (1961) "Supply Controls and Acreage Controls: A Proposed Synthesis," American Journal of Agricultural Economics 43, May, pp. 278-85.

In this paper Branson proposes a combination of acreage controls and supply controls for agricultural products. The "synthesis" mentioned here may be a good alternative for both cases which either alone has serious inherent defects. One particular aspect of interest in his proposal is that of the abandon of price support programs and government storage programs, since he believes that the annual supply quota (for the nation) would clear the market at a price determined by demand in the competitive marketplace. Mainly this statement is based in the Marshallian theory, where cost of production (supply) alone controlled price and that demand alone determined price opened the way out of an impasse. He concludes that a program of synthesized supply and acreage controls probably could assist to hold production to desired levels, stabilize agricultural income by having an administered market supply, return prices to a free market determination which will "provide" a continued incentive for progress in production technology of the farm. A dynamic time model was introduced for the proposed work which is too restrictive such that arise serious doubts about its validation.

Dennis, Carleton C. (1963) "Supply Management-Potential Effect on Tart Cherry Producer Incomes," American Journal of Agricultural Economics 45, November pp. 770-79.

This paper explores the probable short and long run effects of supply management on returns to producers of tart cherries, which production was characterized by large annual production fluctuations but where total value has varied relatively less than quantity. From his anlysis the author concludes that the effect of supply controls on producer incomes is one of the policies that should be effective in achieving increased producer incomes.

Hillman, J. S. and S. Loveday. (1964) "Surplus Disposal and Supply Control," American Journal of Agricultural Economics 46(3), August pp. 593-602.

The authors argue that the proposed combination of surplus disposal and domestic supply control for agricultural commodities suggested by Willard Cochrane may be unsuccessful to achieve minimum cost objectives for the application of such government programs, because the existential nature of a surplus disposal program predisposes the government to rationalize an expanded production. Instead, they suggested that an enlarged and better food-aid-for-economic development program should be combined with surplus disposal program.

Nerlove M. and F. V. Waugh. (1961) "Advertising Without Supply Control:
Some Implications of a Study of the Advertising of Oranges," Journal
of Farm Economics 43(4), November, pp. 813-37.

This paper deals with the study of cooperative advertising where the
cooperative has no direct control over output on price, but may affect
them in an indirect way. For this purpose the authors developed a static
theoretical model of cooperative advertising for the analysis of the ul-
timate effects in the long run of advertising on demand and supply. This
model was applied for a statistical analysis of advertising by orange
growers and covered only the demand for oranges. Their results are highly
conjectural,as they also "recognize," because of the absence of the elas-
ticity of supply estimation, and the effects of external economies and
diseconomies, and alternative forms of investment. However regardless
of these difficulties, they make a good contribution in the knowledge of
the theory of cooperative advertising concerned with the economically
optimal expenditure on advertising aspects.

Welch, Finis. (1967) "Supply Control With Marketable Quotas: The Cost of Uncertainity," American Journal of Agricultural Economics 49(3), August, pp. 584-96.

This article brings up the importance of risk and uncertainty in the consideration supply control. The author concludes that ignoring uncertainty leads to an underestimate of the social cost of the mentioned policy. The method used here is based on a comparison between the market analysis without production uncertainty and with production uncertainty. He pointed out that under competition, surplus inventories are free to vary between production periods; but under supply control they are restricted such that in a competitive market, if realized production equals expected production and both the demand and supply function are stationary, at least part of the existing surplus will be sold. However to the extent that supply controls result in excess storage, a social loss occurs.

VI. VOLUNTARY DIVERSION
PROGRAMS

Johnson, Paul R. (1965) "The Social Cost of the Tobacco Program,"

Journal of Farm Economics, Vol. 47, May, 242-55.

Marshallian devices of consumer and producer surplus was used in this article for the calculation of the social gains and losses from the tobacco program in the U.S.A. and its long run implications within the context of welfare theory. The U.S. has been in a strong monopoly position in world trade. This advantage allowed the U.S. government to affect the traditional welfare losses associated with price support programs in tobacco. The author mainly argues that even though the social cost of the tobacco program has been relatively small, the long run implications are that transferring income to tobacco producers will become more costly in terms of lost producer and consumer surplus. The conclusion arrived from the Marshallian analysis, however, showed that in the decade of the 50's the social cost of operating the tobacco program was quite small. Thus the transfer of income to tobacco producers was not as costly as it might have been.

Houck, J. P. and M. E. Ryan. (1972) "Supply Analysis for Corn in the

United States: The Impact of Changing Government Programs," American Journal of Agricultural Economics 54(2), May, pp. 184-91.

This paper analyzed the acreage supply relationships for corn in the United States for 1948-70. Emphasis is devoted to empirical measurement and analysis of the effects of government feed grain policy since 1948. A general theoretical model was developed for evaluating farm commodity program effectiveness.

Hushak, Leroy J. (1971) "A Welfare Analysis of the Corn Diversion Pro-
gram, 1961 to 1966," _American Journal of Agricultural Economics_ 51(2),
May, pp. 173-81.

Welfare effects of the voluntary corn diversion program are analyzed
in this paper. Under this program, the government buys or sells enough
corn to maintain the price and also make direct payments to producers for
taking land out of production. Hushak developed a three sector (corn,
other crops, and the rest of the economy) supply-demand model which in-
corporates substitution in production and consumption between corn and
other crops. This analysis is within the voluntary corn diversion pro-
gram in 1961 to 1966 period. Free market equilibrium is also estimated.
The net welfare costs and income transfers are computed from the two equi-
librium points. The analysis shows that the net welfare costs are small.
The major effect of the program was on the transfer of income from con-
sumers to producers.

Ryan, M. E. and M. E. Abel. (1972) "Corn Acreage Response and the Set-Aside Program," _Agricultural Economics Research_ 24(4), October, pp. 102-12.

This paper adapts and modifies a model previously developed for the empirical evaluation of the impact of commodity price support programs on corn acreage. The model is used to analyze the effects of the set-aside program on corn plantings. The main objective of this research has been to develop reliable tools for policy advisers to use for estimating the aggregate acreage consequence of changes in government commodity program provisions. The emphasis of this work has been devoted to empirical measurement and analysis of the effects of policy variables on acreage planted. These policy variables are the support price weighted by planting restrictions, and the payments for diverting land from corn production. The corn acreage planted in the U.S. is expressed as a function of the above mentioned policy variables and the supply determinants and random factors. Through the calculation of these policy variables, the authors finally predicted the rise of corn (in acres) planted for 1972, to reflect the set-aside provisions as offered in 1972 corn programs by the U.S. government.

Ryan, M. E. and M. E. Abel. (1973) "Supply Response of U.S. Sorghum Acreage to Government Programs," <u>Agricultural Economics Research</u> 25(2), April, pp.45-55.

This paper presents estimated acreage supply functions for sorghum in the United States for 1957-1971. It was used as a model previously developed for empirical evaluation of the impact of commodity support programs on corn acreage. It was found that both policy variables supported price and the payments for diverting land from sorghum production are highly significant to represent the supply response on sorghum acreage planted in the U.S.

Ryan, M. E. and M. E. Abel. (1973) "Supply Response of U.S. Sorghum Acreage to Government Programs," <u>Agricultural Economics Research</u> 25(2), April, pp.45-55.

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Ryan, M.E. and M. E. Abel. (1973) "Oats and Barley Acreage Response to Government Programs," Agricultural Economics Research 25(4), October, pp. 105-14.

This article completes a series of estimates of supply relationships since World War II for the four major feed grain—corn, sorghum, oats and barley—which together account for about 95% of the grain fed to U.S. livestock.

Vogelsang, D. L. and J. O. Dunbar. (1963) "A Method for Analyzing the Effects of Voluntary Land-Retirement Programs," Journal of Farm Economics 45, November, pp. 789-98.

This paper outlines a graphic model which has been used to analyze the effects of voluntary land-retirement programs. Under these programs the government would offer payments to farmers in amounts that at least are equal to the net value product from the crops that otherwise would be grown, such that given a sufficient incentive payment farmers would then retire land from production (in a voluntary way). The objective of these programs is to raise prices of agricultural products so that the farmer's income will increase.

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Fecha Devolución	Nombre del solicitante