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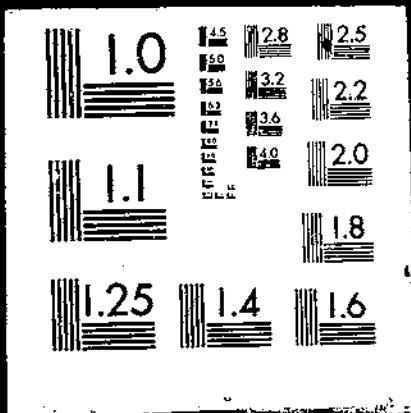
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ALTERNATIVE FUTURES FOR WORLD FOOD IN 1985. VOLUME 3; WORLD GOL MODEL STRUCTURE AND
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ALTERNATIVE FUTURES FOR WORLD FOOD IN 1985

VOLUME 3, WORLD GOL MODEL
STRUCTURE AND EQUATIONS

U.S. DEPARTMENT OF AGRICULTURE
ECONOMICS, STATISTICS, AND COOPERATIVES SERVICE
FOREIGN AGRICULTURAL ECONOMIC REPORT NO. 151

ALTERNATIVE FUTURES FOR WORLD FOOD IN 1985, VOLUME 3, WORLD GOL MODEL STRUCTURE AND EQUATIONS. By Anthony Rojko, Hilarius Fuchs, Patrick O'Brien, and Donald Regier; Foreign Demand and Competition Division; Economics, Statistics, and Cooperatives Service; U.S. Department of Agriculture, Foreign Agricultural Economic Report No. 151.

ABSTRACT

The structure of the world grain-oilseeds-livestock (GOL) projections model is described, base period data are defined, and the 930 mathematical equations used in the model are presented. Tables of elasticities are also presented to facilitate evaluation of particular coefficients used in the model's equations. The simultaneous solutions of the model use a linear programming computer technique.

The GOL model projects world patterns of production, consumption, trade, stocks, and prices for major grains, oilseeds, and livestock commodities for up to 28 major world countries and regions. The model is designed to quantify the impact of alternative assumptions regarding population growth, income growth, policy variations, and agricultural productivity growth rates. The mathematical relationships can be modified to evaluate additional alternatives.

Key words: Projections, agriculture, world food problems, economic model, grains, oilseeds, livestock products, trade.

Washington, D.C. 20250

June 1978

FOREWORD

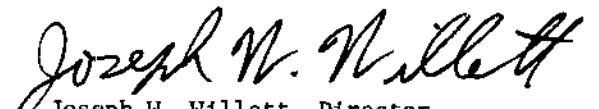
The Economics, Statistics, and Cooperatives Service (ESCS) is working on a continuing basis on projections of changes in world export markets, population, income, and resource and environment constraints and on their impact on the U.S. agricultural sector. The affected U.S. variables include production, consumption, trade, prices, farm costs, and farm incomes.

Major components of the projections program are world, regional, and country projections of production, demand, trade, and prices of major commodities important in agricultural trade. These projections are useful in evaluating the broad issues of future world food prospects.

The projections are made within the framework of a mathematical world grain-oilseeds-livestock (GOL) model. The model is designed to capture the main economic relationships of the three groups of commodities and to test the impact of different economic and policy assumptions on projected quantities and values.

Projections of U.S. agricultural exports generated by the GOL model are not official ESCS projections of U.S. trade in agricultural commodities. Rather, they are presented to aid users in evaluating the impact of different assumptions on world trade.

Structure and equations of the world GOL model are being presented in this volume. Together with the other GOL volumes, this volume provides the model documentation. The GOL model is one analytical tool used along with other ESCS computer programmed mathematical models for analyzing future food and agricultural trade prospects.



Joseph W. Willett
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Foreign Demand and Competition Division
Economics, Statistics, and Cooperatives
Service

PREFACE

This study reports on one phase of an ongoing research effort in the Economics, Statistics, and Cooperatives Service (ESCS) aimed at generating and maintaining up-to-date price, production, consumption, and trade projections for agricultural commodities in the major countries and regions of the world. The study assesses alternative world food prospects through the use of a mathematical model of the world's grain-oilseeds-livestock economies (GOL) model.

The study is being published in four volumes. Volume 1, an analytical report, discusses the output of the model's projections to 1985. Volume 2 contains detailed country and regional supply-distribution tables and related price and growth rate tables. Volume 3, the present report, describes and presents the mathematical equations used in the GOL model. Volume 4 will be a users' manual. Volume 2 is expected to be updated periodically to maintain a current set of alternative projections.

This research effort requires substantial ongoing teamwork from members of the Commodities Program Area working with others in the Foreign Demand and Competition Division (FDCD) of ESCS and with other ESCS divisions in the area of econometric model development and country-specific analysis. Under the overall direction of Anthony S. Rojko, significant inputs have been made by Donald Regier (livestock and derived feed), Patrick O'Brien (grains), Arthur Coffing (oilseeds), Robert Barry (rice), Myles Mielke (dairy), and Linda Bailey. Several people helped to develop the computer programs, beginning with Francis Urban in the early stages, Hilarius Fuchs during the main development stage, and Fenton Sands and Martin Schwartz in the later stages. The contribution of Angela Wray in editing the materials in this volume is also acknowledged.

While it is impossible to cite all the individuals in FDCD who contributed to this work, special recognition is given to Wayne Denney, Gene Hasha, John Link, and John Parker for their contribution to the productivity aspects of the developing world. Recognition is also acknowledged to James B. Johnson, Leroy Quance, and Allen Smith for their contribution to the U.S. sector.

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ALTERNATIVE FUTURES FOR WORLD FOOD IN 1985

VOLUME 3. WORLD GOL MODEL STRUCTURE AND EQUATIONS

by

Anthony Rojko, Hilarius Fuchs, Patrick O'Brien
and Donald Regier

WORLD GOL MODEL STRUCTURE

The relationships affecting production, consumption, trade, and prices of grains, oilseeds, and livestock products have long challenged analysts in this country and abroad. World models have been developed for individual commodities or small commodity groupings; in these models, the world is usually viewed as a number of regions. Multicommodity models have been developed for a given country, but they usually treat the rest of the world in a residual way.

The world grain-oilseeds-livestock (GOL) model presented here adopts both views. It contains a sufficient number of regions to capture regional detail. At the same time, a sufficient number of commodities are treated to trace out the impact of quantity and price changes for one commodity in a given region upon prices and availabilities of the same or other commodities elsewhere in the world.

The U.S. sector included in the GOL model is representative only. Full U.S. models are used along with the GOL model in ongoing projection work in the Economics, Statistics, and Cooperatives Service (ESCS) of USDA, especially to provide export projections which tie in with detailed domestic U.S. projections.

The GOL model can also provide an analytical framework for international agricultural and trade policy evaluations.

In matrix form, the world GOL model may be written as --

$$AX = H \quad (1)$$

where A is a square coefficient matrix of linear relationships containing 930 rows and columns, X is a vector of 930 endogenous variables, and H is a matrix of the exogenous part of the model. In general, A is not varied between projections runs. Variables in H, however, can take on different values or a different combination of variables, depending on the alternative assumptions about the future. Rewriting, equation (1) becomes

$$X = A^{-1}H \quad (2)$$

with equation (2) providing the projected values under different alternatives.

A, X, and H can be decomposed in various ways: by region (the GOL model contains 28), commodity (of which there are 14), and economic function (production, demand, price, trade, etc.). Price variables are further broken down by currency (dollar, peso, etc.) and by market level (retail, wholesale, producer, trade, etc). Most variables are specified within individual regions. However, prices and trade are by nature internationally linked. Physical equilibrium is defined in a twofold

sense: (1) at the regional level and (2) at the world level. At the regional level, excess supply or excess demand help determine net trade and price pressures. At the world level, exports and imports sum to zero; consequently, production equals consumption unless provision is made in a specific alternative for stock accumulations or drawdowns. Using population and income growth rates, supply and demand elasticities, physical input-output rates, and policy assumptions as inputs, the model develops projections of area, production, food and feed use, trade levels, and prices for several commodities by regions.

Within a region, the GOL model consists of seven major blocks of equations:

1. Demand block - Livestock products
2. Supply block - Livestock products
3. Demand block - Feed crops
4. Demand block - Food crops
5. Supply block - Crops
6. Price linkages within regions
7. Regional equilibrium

To relate and tie the regions together, two additional blocks of equations are needed:

8. Price equations linking regions
9. World equilibrium equations for each commodity

Figure 1 shows schematically the interrelationships tying these blocks together at the regional and world levels.

Typically, the equations in blocks 1 and 4, describing human demand for food commodities, contain (1) a set of endogenous variables, including direct price of the particular commodity and the prices of competing and complementary commodities, and (2) a set of exogenous variables, which includes per capita income, population, and sometimes a time trend describing shifts in tastes. Food crops typically include wheat, coarse grains, and rice. Livestock products include individual meats, beef and veal, pork, poultry, and mutton, as well as milk, cheese, butter, and eggs. Demand for table beef is identified in the United States. Soybeans are human food in some regions, notably Japan. But oilcake or meal is treated as livestock feed. The following are typical demand equations: 1/

- . Wheat demand for food = F(prices of wheat, corn, rice; per capita income, population, changing tastes)

1/ While the model has all endogenous variables on the left-hand side of the equality and exogenous on the right, the presentation shows a single endogenous variable as functions of other variables.

SUPPLY AND DEMAND SECTORS FOR A TYPICAL REGION IN GOL MODEL

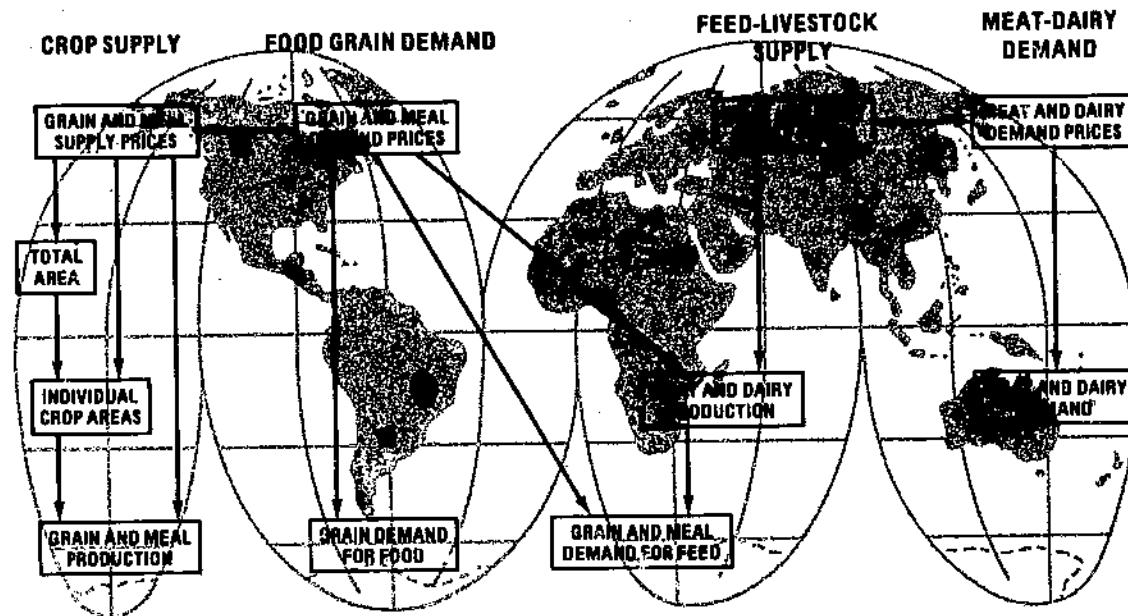


Figure 1

- . Beef demand = $F(\text{prices of beef, pork, poultry; per capita income, population, changing tastes})$

Block 2 defines livestock production. Meat production is shown as a function of individual meat prices to allow for competition between meats. The prices of individual feeds are also included to allow for the effect of production costs. A trend variable is included for improvements in productivity. These equations are typical:

- . Beef production = $F(\text{prices of beef, pork, poultry, coarse grain, oilmeal; productivity growth})$
- . Milk production = $F(\text{prices of milk, butter, coarse grain, oilmeal; productivity growth})$

Feed demand, the link between the livestock and crop sectors, is more complex. The basic link is a set of physical input-output rates expressing the tons of grain or oilseed meal used in producing a ton of a given livestock product. Feed prices and livestock product prices are used to adjust the effective input-output rates so that they are consistent with projected economic conditions. Typical equations are:

- . Grain demand for feed = $F(\text{physical production of beef, pork, poultry, milk; prices of pork, beef, corn, oilmeal; productivity growth})$

- Oilmeal demand for feed = $F(\text{physical production of beef, pork, poultry, milk; prices of pork, beef, corn, oilmeal; productivity growth})$

The supply block for both grains and oilseeds is determined within block 5. It includes (1) an area equation and (2) a production equation to represent yield. ^{2/} Changes in total cropped area are dependent on the prices of key crops and such factors as reclamation and technology. Individual crops share the available total area on the basis of historic shares, relative prices of competing crops, and rate of expansion of available area. Production is a function of area and direct and competing prices; prices reflect higher input use in response to higher crop prices. Typical crop supply equations are shown below:

- Total crop area = $F(\text{prices of wheat, corn, oilseeds; expansion of available area})$
- Wheat area = $F(\text{total crop area; prices of wheat, corn, oilseeds})$
- Wheat production = $F(\text{wheat area; price of wheat; physical input bundle})$

Price linkage equations in block 6 connect internal prices at different marketing levels as well as international trade prices. The following equation forms are typical:

- Supply price of beef = $F(\text{demand price of beef; productivity growth; policy factors})$
- Wholesale price of wheat = $F(\text{trade price of wheat})$

Price linkage equations in block 8 link the trade prices among regions. Regional equilibrium conditions comprising block 7 state the physical imbalance within a region, defining whether a region is an exporter or importer. The world equilibrium equations in block 9 provide for the summing up of all the regions to obtain world totals, with production equal to consumption, and with world exports equal to world imports except when stock changes are also included in the analysis.

For the developed countries, the GOL model captures the interaction of food demand, feed demand, and livestock production and consumption. However, for developing regions with only a modest livestock economy and little foreign trade in animal products, the livestock demand and supply blocks are not specified. Feed demand equations for these regions are direct functions of the exogenous factors affecting demand and supply of livestock products and of the livestock feeding rates:

- Feed demand for grain = $F(\text{prices of corn and oilmeal; per capita income, population, changing tastes; productivity growth})$

^{2/} A yield equation could not be used directly because the endogenous part of the model is linear and area times yield is nonlinear.

The economies of Eastern Europe, the Soviet Union, and the People's Republic of China present a different situation. In each region, for each commodity representing a significant quantity of foreign trade, a single equation has been synthesized to relate net foreign trade directly to the usual demand determinants and other factors. However, the production and consumption links associated with a particular trade alternative are determined outside the GOL model. This is a typical equation:

$$\text{Net imports of wheat} = F(\text{trade prices of wheat and corn; per capita income, population, changing tastes; productivity growth; policy factors})$$

While the matrix A must be linear, there is no such restriction on matrix H. The form of H depends on assumptions as to impacts expected of particular exogenous variables used. The general form of H is --

$$H = B (I + R)^T + CZ + DT + E$$

--where the impacts may take one or some combination of the following forms:

$$H_1 = B (I + R)^T + E_1$$

$$H_2 = CZ + E_2$$

$$H_3 = DT + E_3$$

H_1 , H_2 , and H_3 sum to H in the general form and E_1 , E_2 , and E_3 to E. In the first form, H_1 is a compound growth process, where B is a vector of bases to be compounded, R is a set of growth rates for particular exogenous variables, and T is the number of years over which compounding occurs. The second form, H_2 , represents a linear relationship to some exogenous variable, where C is the coefficient matrix and Z a vector of exogenous variables. The third form, H_3 , is simply an allowance for linear trends, where D is the matrix of trend increments and T is the span of years over which the trends operate.

All terms in H must be individually projected for each projection alternative before the solution can be calculated and the variations in the endogenous variables, X, determined.

As indicated above, the livestock sector is not specified for all regions of the world. Table 1 indicates those regions which (1) produce or consume mainly grain, (2) consume significant quantities of livestock products, (3) produce commercially important quantities of livestock products, (4) employ sufficient quantities of feedstuffs to justify incorporating feed demand equations into the GOL model, and (5) are represented in the world model structure, at this stage, only by net trade equations.

Table 2 sets out the definitions of the commodities used in the GOL model. Table 3 displays the currencies and exchange rates used in particular regions. Table 4 is a listing of the countries in each region of the world.

Table 1--Variables used in the world grain-oilseeds-livestock model

| Region | Wheat | Rice | Coarse grain | Oilseed meal | Milk | Cheese | Eggs | Beef cuts | Beef products | Pork | Poultry | Mutton and lamb |
|--|-------|------|--------------|--------------|------|--------|------|-----------|---------------|------|---------|-----------------|
| Developed countries: | | | | | | | | | | | | |
| United States | DF | PA | D | PA | DF | PA | F | PA | D | S | D | P |
| Canada | DF | PA | D | | DF | PA | F | PA | D | S | D | P |
| EC-6 | DF | PA | D | PA | DF | PA | F | PA | D | S | D | P |
| EC-3 | DF | PA | D | PA | DF | PA | F | PA | D | S | D | P |
| Other Western Europe | DF | PA | D | PA | DF | PA | F | PA | D | S | D | P |
| Japan | D | PA | DF | PA | DF | PA | DF | PA | D | S | D | P |
| Australia/New Zealand | DF | PA | D | PA | DF | PA | F | PA | D | S | D | P |
| South Africa | D | PA | D | | DF | PA | F | S | D | S | D | P |
| Centrally planned countries: | | | | | | | | | | | T | T |
| Eastern Europe | T | | T | | T | | T | | | | T | T |
| Soviet Union | T | | T | | T | | T | | | | T | |
| China | T | | T | | T | | T | | | | T | |
| Developing countries: | | | | | | | | | | | | |
| Middle America | DF | PA | D | PA | DF | PA | F | PA | | | D | P |
| Argentina | D | PA | D | PA | DF | PA | F | PA | | | D | P |
| Brazil | D | PA | D | PA | DF | PA | F | PA | | | D | P |
| Venezuela | D | PA | D | PA | DF | PA | F | PA | | | D | P |
| Other South America | D | PA | D | PA | DF | PA | F | PA | | | D | P |
| High-income North Africa and Middle East | D | PA | D | PA | DF | PA | F | | | | | |
| Low-income North Africa and Middle East | D | PA | D | PA | DF | PA | | S | | | | |
| East Africa | D | PA | D | PA | DF | PA | | | | | | |
| Central Africa | D | S | D | S | D | S | T | | | | | |
| India | D | PA | D | PA | DF | PA | F | PA | | | | |
| Other South Asia | D | PA | D | PA | D | PA | | | | | | |
| Thailand | D | | D | PA | DF | PA | | | | | | |
| Other Southeast Asia | D | | D | PA | DF | S | | | | | | |
| Indonesia | D | | D | PA | D | PA | D | PA | | | | |
| High-income East Asia | D | PA | D | PA | DF | PA | F | PA | | | | |
| Low-income East Asia | D | PA | D | PA | DF | PA | | S | | | | |
| Rest of world | | | | | | | T | | | T | T | T |

D = Demand, total or nonfeed
F = Derived demand for feed

P = Production
A = Area

S = Supply
T = Foreign trade, net

Table 2--World GOL model commodities

| Code | Commodity |
|------|---|
| N. | Each or all of the commodities modeled |
| T. | Crops, each or all |
| G. | Grains, each or all |
| W. | Wheat, product weight |
| R. | Rice, milled equivalent, product weight |
| C. | Corn and other coarse grains, product weight |
| K. | Oilseeds, meal equivalent, product weight |
| S. | Soybeans, meal equivalent, product weight |
| A. | Livestock products, each or all |
| M. | Meats, each or all |
| B. | Beef and veal, carcass weight |
| BT | Beef, table, carcass weight |
| BP | Beef, process, carcass weight |
| P. | Pork, carcass weight |
| Z. | Poultry, ready-to-cook weight |
| V. | Mutton, lamb, and other meat, carcass weight |
| L. | Milk and dairy products, fluid equivalent, product weight |
| LM | Fluid milk, product weight |
| LC | Cheese, product weight |
| LB | Butter, product weight |
| E. | Eggs, product weight |

Table 3--World GOL model currencies and exchange rates 1/

| Region | Currency code | Exchange rates |
|------------------------------|------------------|--|
| Developed countries: | : | |
| United States | : CD | U.S. dollar |
| Canada | : CC | 1 Canadian dollar = 1 dollar equivalent |
| European Community | : CU | 1 unit of account = 1 dollar equivalent |
| Other Western Europe | : CU | Dollar equivalent |
| Japan | : CY | 357.600 yen = 1 dollar equivalent |
| Australia/New Zealand | : CA | .897 Australian dollar ≈ 1 dollar equivalent |
| South Africa | : CE | Dollar equivalent |
| Centrally planned countries: | : | |
| Eastern Europe | : CE | Dollar equivalent |
| Soviet Union | : CE | Dollar equivalent |
| People's Republic of China | : CE | Dollar equivalent |
| Developing countries: | : | |
| Argentina | : CP | 3.75 new peso = 1 dollar equivalent |
| Others | : CE | Dollar equivalent |

1/ Exchange rates as of July 1972. Dollar equivalent = 1 U.S. dollar.

Table 4--World GOL model regions

| Region | : Code : | Composition |
|---|----------|---|
| I. Developed Countries: | | |
| United States | US | United States |
| Canada | CN | Canada |
| EC-6 | C6 | Belgium, France, West Germany, Italy, Luxembourg, Netherlands |
| EC-3 | C3 | Denmark, Ireland, United Kingdom |
| Other Western Europe | WE | Austria, Finland, Greece, Iceland, Malta, Norway, Portugal, Spain, Sweden, Switzerland |
| Japan | JP | Japan |
| Oceania | AZ | Australia, New Zealand |
| South Africa | SF | Botswana, Lesotho, Namibia, Republic of South Africa, Swaziland |
| II. Centrally Planned Countries: | | |
| Eastern Europe | EE | Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Romania, Yugoslavia |
| Soviet Union | SV | Soviet Union |
| China | CH | People's Republic of China |
| III. Developing Countries: | | |
| Middle America | MC | Mexico, Bahamas, Bermuda, Costa Rica, Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, British Honduras, Jamaica, Nicaragua, Panama, Trinidad & Tobago, Other Caribbean Islands |
| Argentina | AR | Argentina |
| Brazil | BZ | Brazil |
| Venezuela | VN | Venezuela |
| Other South America | LA | Bolivia, Chile, Colombia, Ecuador, French Guiana, Paraguay, Peru, Surinam, Uruguay |

Continued

Table 4--World GOL model regions--Continued

| Region | : Code : | Composition |
|--|----------|---|
| High-income North Africa and Middle East | NH | Algeria, Bahrain, Cyprus, Iran, Iraq, Israel, Kuwait, Libya, Oman, Qatar, Saudi Arabia, United Arab Emirates |
| Low-income North Africa and Middle East | NL | Egypt, Jordan, Lebanon, Morocco, Sudan, Syria, Tunisia, Turkey, Yemen (Aden), Yemen (Sana) |
| East Africa | EF | Kenya, Malagasy Republic, Malawi, Mozambique, Rhodesia, Tanzania, Uganda, Zambia |
| Central Africa | CF | Angola, Burundi, Cameroon, Central African Empire, Chad, Congo, Ethiopia, Djibouti, Benin, Gabon, Gambia, Ghana, Guinea, Equatorial Guinea, Guinea-Bissau, Ivory Coast, Liberia, Mali, Mauritania, Mauritius, Niger, Nigeria, Reunion, Rwanda, Senegal, Sierra Leone, Somalia, Togo, Upper Volta, Zaire |
| India | ND | India |
| Other South Asia | OS | Afghanistan, Bangladesh, Bhutan, Nepal, Pakistan, Sri Lanka |
| Thailand | TH | Thailand |
| Other Southeast Asia | OE | Burma, Cambodia, Laos, South Vietnam <u>1/</u> |
| Indonesia | DO | Indonesia |
| High-income East Asia | EH | Hong Kong, Singapore, South Korea, Taiwan, Brunei |
| Low-income East Asia | EL | Malaysia, Philippine Islands |
| Rest of world | RW | North Korea, North Vietnam <u>1/</u> , Mongolia, Cuba, Pacific Islands, Papua-New Guinea |

1/ The model was designed before the reunification of North and South Vietnam into the People's Republic of Vietnam.

VARIABLE SPECIFICATION

An 8-place code is employed for specifying the price, quantity, and international trade interactions corresponding to 14 commodities, plus land area, for 28 regions of the world. The notation is standard for all commodities and regions.

In the code, the first and second characters identify region or country, the third and fourth designate function, such as demand or supply, the fifth and sixth identify the commodity, and the seventh and eighth specify the currency in which prices, incomes, or values are measured.

Endogenous Variables

The code for endogenous variables identifies region, economic function, commodity, and currency. The first two spaces (1 and 2) together constitute a regional code:

| | |
|-----|--|
| US- | United States |
| CN- | Canada |
| C6- | EC, Original Six |
| C3- | EC, New Three |
| WE- | Other Western Europe |
| JP- | Japan |
| AZ- | Oceania |
| SF- | South Africa |
| EE- | Eastern Europe |
| SV- | Soviet Union |
| CH- | People's Republic of China |
| MC- | Middle America |
| AR- | Argentina |
| BZ- | Brazil |
| VN- | Venezuela |
| LA- | Other South America |
| NH- | High-income North Africa and Middle East |
| NL- | Low-income North Africa and Middle East |
| EF- | East Africa |

CF- Central Africa
ND- India
OS- Other South Asia
TH- Thailand
OE- Other Southeast Asia
DO- Indonesia
EH- High-income East Asia
EL- Low-income East Asia
RW- Rest of world

The second two spaces (3 and 4) are functional indicators:

-HA- Area in hectares
-QD- Quantity demanded
-QS- Quantity supplied
-QT- Quantity traded internationally or interregionally, net. Imports are negative, exports are positive.
-PD- Demand price
-PS- Supply price
-PT- Trade price
-PL- Levy price (variable levy)
-CO- Consumption quantity
-EQ- Equilibrium condition
-DS- Demand-supply equilibrium
-SD- Supply-demand equilibrium
-RP- Regional price
-ST- Relationship between a supply price and a trade price
-DT- Relationship between a demand price and a trade price

The third two spaces (5 and 6) signify commodities. Space 5 gives the broad designation, with further breakdown indicated in space 6:

-B.- Beef, including veal
-BT- Beef, table

-BP- Beef, process
-P.- Pork
-Z.- Poultry
-V.- Mutton, including lamb and goat
-L.- Milk and dairy products
-LM- Fluid milk
-LB- Butter
-LC- Cheese
-E.- Eggs
-G..- Total grain
-GH- Grain for human demand
-GF- Grain for livestock feed
-W.- Wheat
-WH- Wheat for human demand
-WF- Wheat for livestock feed
-R.- Rice
-RH- Rice for human demand
-C.- Coarse grains
-CH- Coarse grains for human demand
-CF- Coarse grains for livestock feed
-K.- Oilseeds, meal equivalent, including principally soybeans
-KH- Oilseeds for human demand
-KF- Oilseeds for livestock feed
-S.- Soybeans, meal equivalent
-SH- Soybeans for human demand

In the context of land area (-HA-), spaces 5 and 6 have the following significance:

-T.- Total

The fourth two spaces (7 and 8) comprise a currency code, independently specified for each region:

-CD U.S. dollar
-CC Canadian dollar
-CU European Community unit of account (=U.S. dollar in 1970)
-CE Dollar equivalent
-CY Japanese yen
-CA Australian dollar
-CP Argentine new peso

Most regions are specified with dollar-equivalent prices.

The code for endogenous variables identifies region, function, commodity, and currency. An example might be useful in clarifying the employment of the code. Consider the code name, WEQDCF. From the above specification, it is evident that --

WE is Other Western Europe

QD is quantity demanded, and

CF is coarse grains used as livestock feed.

So, the variable name is decoded as: "The quantity of coarse grain demanded as livestock feed in the region called Other Western Europe (which is comprised of Austria, Finland, Greece, Iceland, Malta, Norway, Portugal, Spain, Sweden, and Switzerland)."

As an example of a price, consider the code name, THPDR.CE. The meanings of the elements can be looked up:

TH is Thailand,

PD is demand price,

R. is rice, and

CE is dollar equivalent.

Thus, the variable name has the meaning: "The demand price of rice measured in dollar-equivalent terms in Thailand (a region containing only one country)."

Alphanumeric suffixes are used sparingly to avoid confusion:

A, B, ... etc. are endings to avoid confusion.

1, 2, ... etc. are terminations used in price relationships to avoid confusion and to provide a count of the number of regions interrelated.

Exogenous Variables

Exogenous variables are indicated by special code names:

| | |
|----------|--|
| POP | Population, of all countries |
| POPD | Population, of a developed country |
| POPLD | Population, of a less developed country |
| INCOME | Per capita national income, of all countries |
| INCOMED | Per capita national income, of a developed country |
| INCOMELD | Per capita national income, of a less developed country |
| PRDVTYD | Productivity, index of physical production response in a developed country with respect to a specific commodity |
| PRDVTYLD | Productivity, index of physical production response in a less developed country with respect to a specific commodity |
| TRENDD | Time trend, annual increment, in a developed country |
| TRENDLD | Time trend, annual increment, in a less developed country |
| TIME | Compound growth factor |
| ZI | Index of cost of physical inputs in a developed country |
| PRI | Index of physical use of a bundle of agricultural inputs, such as fertilizers, insecticides, in a developing country |

EQUATION SPECIFICATION

The following pages present the mathematical equations used in alternative I. Tables 5 through 12 show the direct- and cross-price elasticities and income elasticities arrived at in the course of research and used in developing the equations. Tables 13 and 14 show the values for the 1970 base quantities and prices, respectively.

UNITED STATES -- US

Demand Equations

$$\begin{aligned} \text{USQDBT} + 1.922 \text{ USPDB} - .9235 \text{ USPTB} - .3629 \text{ USPDP} &= 2,381.35 + 5,952[1 + .4(.02921) + .00726]^T \\ \text{USQDBP} - .8932 \text{ USPDB} + 3.004 \text{ USPTB} - .2952 \text{ USPDP} - .5085 \text{ USPDZ} &= 967.48 + 4,841[1 + .3(.02921) + .00726]^T \\ \text{USQTBT} - .0217 \text{ USPDB} + .0365 \text{ USPTB} &= .003 + 47[1 + .0100]^T \\ \text{USQDP} - 1.151 \text{ USPDB} + 3.085 \text{ USPDP} - .6644 \text{ USPDZ} &= 1,897.0 + 6,325[1 + .10(.02921) + .00726]^T \\ \text{USQDZ} - .6119 \text{ USPDB} - .5467 \text{ USPDP} + 4.709 \text{ USPDZ} &= 2,241.42 + 4,483[1 + .8(.02921) + .00726]^T \\ \text{USQDLM} + 50.19 \text{ USPDLM} &= 6,712.91 + 33,566[1 + .1(.02921) + .00726]^T \\ \text{USQDLB} + .2306 \text{ USPDLB} &= 350.05 + 500[1 + .00726]^T \\ \text{USQDLC} + .4407 \text{ USPDLC} &= 531.48 + 1,063[1 + .5(.02921) + .00726]^T \\ \text{USQDWH} + 55.63 \text{ USPDW} &= 3,170.9 + 15,854[1 + .00726]^T \\ \text{USQDCH} + 57.11 \text{ USPDC} &= 3,012.55 + 15,064[1 + .00726]^T \\ \text{USQDRH} + .5103 \text{ USPDR} &= 262.8 + 1,314[1 + .2(.02921) + .00726]^T \\ \text{USQDWF} - .0420 \text{ USQDGF} + 150 \text{ USPDW} - 150 \text{ USPDC} &= 940.58 \\ \text{USQDGF} - 4.181 \text{ USQSB} - 6.431 \text{ USQSP} - 2.765 \text{ USQSZ} - .3273 \text{ USQL} - 2.912 \text{ USQSE} - 44.78 \text{ USPSB} - 81.48 \text{ USPSP} \\ &\quad + 1,037 \text{ USPDC} - 160.6 \text{ USPDK} = - 151,624.25 + 136,772[1 + .003]^T \\ \text{USQDCF} - \text{USQDGF} + \text{USQDWF} &= 0 \\ \text{USQDKF} - .2842 \text{ USQSB} - .4060 \text{ USQSP} - .7883 \text{ USQSZ} - .0301 \text{ USQL} - .4236 \text{ USQSE} - 2.711 \text{ USPSB} - 8.238 \text{ USPSP} \\ &\quad - 269.8 \text{ USPDC} + 89.22 \text{ USPDK} = - 24,717.55 + 14,234[1 + .01]^T \end{aligned}$$

Supply Equations

$$\begin{aligned} \text{USQSB} - 4.49 \text{ USPSB} + 38.15 \text{ USPDC} + 5.909 \text{ USPDK} &= - 502.68 + 10,063[1 + .016]^T \\ \text{USQSP} - 6.624 \text{ USPSP} + 47.21 \text{ USPDC} + 7.313 \text{ USPDK} &= 0 + 6,227[1 + .005]^T \\ \text{USQSZ} - 6.624 \text{ USPSZ} + 52.98 \text{ USPDC} + 10.94 \text{ USPDK} &= - 466.2 + 4,659[1 + .025]^T \\ \text{USQSE} - 4,077[1 + .00726]^T & \\ \text{USQL} - 168.5 \text{ USPSL} + 7.911 \text{ USPSA} + 302.3 \text{ USPDC} + 124.9 \text{ USPDK} &= 63,801.45 + 1,000 T \\ \text{USQLC} - .4940 \text{ USPDLC} + .3925 \text{ USPDLB} &= .051 + 993[1 + .5(.02921) + .00726]^T \\ \text{USQL} - \text{USQDL} - 20.9516 \text{ USQDLB} - 8.8469 \text{ USQLC} &= 335.23 \\ \text{USHAT} - 951.6 \text{ USPTW} - 2,168 \text{ USPTC} - 438.4 \text{ USPTS} &= - 153.3 \text{ USZI} - 138,017.06 \\ \text{USHAW} - 809.0 \text{ USPTW} + 603.0 \text{ USPTC} + 112.0 \text{ USPTS} - .243 \text{ USHAT} &= - 185.4 \\ \text{USHAC} + 585.6 \text{ USPTW} - 1,652 \text{ USPTC} + 361.8 \text{ USPTS} - .538 \text{ USHAT} &= - 18,355.2 - 487 T \\ \text{USHAR} - 4.414 \text{ USPTR} &= .0310 + 5 T \\ \text{USHAK} + 223.4 \text{ USPTW} + 1.049 \text{ USPTC} - 473.8 \text{ USPTS} - .219 \text{ USHAT} &= 18,540.6 + 487 T \\ \text{USQSW} - 2.144 \text{ USHAW} - 34.08 \text{ USPTW} &= 2,001.29 - 40.02 \text{ USZI} + 590 T \\ \text{USQSC} - 4.023 \text{ USHAC} - 290.5 \text{ USPTC} &= 16,582.15 - 331.7 \text{ USZI} + 4,260 T \\ \text{USQSR} - 3.657 \text{ USHAR} - 1.627 \text{ USPTR} &= - 287.92 + 51 T \\ \text{USQSK} - 1.193 \text{ USHAK} - 3.483 \text{ USPTS} &= - 400.19 + 872 T \end{aligned}$$

Continued

UNITED STATES --Continued

Regional Equilibrium Conditions

- USQSB + USQDBT + USQDBP + USQTB = 0
- USQSP + USQDP + USQTP = 0
- USQSZ + 1.0393 USQDZ = 0
USQDV + USQTV = 0
USQTV = 54[1 + .0470]^T
- USQSLB + USQDLB = 0
- USQSLC + USQDLC + USQTLIC = 0
- USQSW + USQDWI + USQDWF + USQTW = 0
- USQSC + USQDCH + USQDCF + USQTC = 0
- USQSR + USQDRH + USQTR = 0
- USQSK + USQDKF + USQTK = 0

Supply-Demand Price Equations

USPSB - .65 USPDB = - 756.7
USPSP - .40 USPDP = - 186
USPSZ - USPDZ = - 319
USPDLM = 133.75[1 + .05(.02921)]^T
USPDLB = .04773 USPDLB = 30.946
USPDLC = .11303 USPDLC = - 32.914
USPSL = .6314 USPDLM = .2034 USPSLB = .1652 USPSLC = 3.6170
USPTS - USPTK = 16.6

Demand-Trade Price Equations

USPDB = 1.0(1.0) USPTB = 909
USPDP = 1.0(1.0) USPTP = 76
USPDLC = .5 USPTLC = - 510
USPDW = 1.0(1.0) USPTW = - 1.73
USPDC = 1.0(1.0) USPTC = - 4.32
USPDR = 1.0(1.0) USPTR = 338.07
USPDK = 1.0(1.0) USPTK = - 13.15

CANADA -- CN

Demand Equations

$$\begin{aligned} \text{CNQDB} + .80 \text{ CNPDB} - .3954 \text{ CNPDP} - .3095 \text{ CNPDZ} = 136.8 + 912[1 + .6(.03009) + .01436]^T \\ \text{CNQDP} = .3459 \text{ CNPDB} + .5948 \text{ CNPDP} - .1995 \text{ CNPDZ} = 88.21 + 588[1 + .15(.03009) + .01436]^T \\ \text{CNQDZ} = .1888 \text{ CNPDB} - .1237 \text{ CNPDP} + .7747 \text{ CNPDZ} = 128.43 + 428[1 + .8(.03009) + .01436]^T \\ \text{CNQDLM} + 5.217 \text{ CNPDLM} = + 742.2 + 3,711[1 - .1(.03009) + .01436]^T \\ \text{CNQDLB} + .0717 \text{ CNPDLB} = + 103.53 + 148[1 - .3(.03009) + .01436]^T \\ \text{CNQDLC} + .0485 \text{ CNPDLC} = + 55.48 + 111[1 + .6(.03009) + .01436]^T \\ \text{CNQDWI} + 1.938 \text{ CNPDW} - 1.39 \text{ CNPDC} = 49.08 + 2,455[1 - .25(.03009) + .01436]^T \\ \text{CNQDCH} = 1.682 \text{ CNPDW} + 4.020 \text{ CNPDC} = 106.5 + 2,130[1 - .3(.03009) + .01436]^T \\ \text{CNQDRH} + .0773 \text{ CNPDR} = 18.01 + 60[1 + .15(.03009) + .01436]^T \\ \text{CNQDGF} = 4.6 \text{ CNQSB} - 6.5 \text{ CNQSP} - 2.9 \text{ CNQSZ} - .33 \text{ CNQSL} - 3.1 \text{ CNQSE} - 5.627 \text{ CNPSB} - 5.529 \text{ CNPSP} \\ + 115.5 \text{ CNPDC} - 12.90 \text{ CNPDK} = - 16,019.2 + 15,305[1 + .002]^T \\ \text{CNQDWF} = .145 \text{ CNQDGF} + 17.53 \text{ CNPDW} - 17.53 \text{ CNPDC} = 182.04 \\ \text{CNQDCF} + \text{CNQDWF} - \text{CNQDGF} = 0 \\ \text{CNQDKF} = .1 \text{ CNQSB} - .35 \text{ CNQSP} - .6 \text{ CNQSZ} - .03 \text{ CNQSL} - .35 \text{ CNQSE} - 1.132 \text{ CNPSP} - 41.05 \text{ CNPDC} \\ + 7.167 \text{ CNPDK} = - 3,027.88 + 870[1 + .005]^T \end{aligned}$$

Supply Equations

$$\begin{aligned} \text{CNQSB} = .5182 \text{ CNPSB} + .1273 \text{ CNPSP} + 3.325 \text{ CNEDC} + .3713 \text{ CNPDK} = -44.05 + 881[1 + .035]^T \\ \text{CNQSP} + .1768 \text{ CNPSB} - .5211 \text{ CNPSP} + .2719 \text{ CNPDZ} + 4.537 \text{ CNPDC} + ,5066 \text{ CNPDK} = 180.32 + 601[1 + .019]^T \\ \text{CNQSZ} + .0631 \text{ CNPSB} + .1240 \text{ CNPSP} - .6794 \text{ CNPSZ} + 3.238 \text{ CNPDC} + .7232 \text{ CNPDK} = 85.81 + 429[1 + .0380]^T \\ \text{CNQSE} = 329[1 + .01436]^T \\ \text{CNQSL} = 20.57 \text{ CNPSL} + 62.53 \text{ CNPDC} + 13.97 \text{ CNPDK} = 2,485.66 + 8,284[1 + .019]^T \\ \text{CNQSLC} = .0530 \text{ CNPSLC} + .0420 \text{ CNPDLB} = + .02 + 101[1 + .6(.03009) + .01436]^T \\ \text{CNQSL} - \text{CNQDLM} = 23.25 \text{ CNQSLB} - 11.208 \text{ CNQSLC} = 0 \\ \text{CNHAT} = 79.42 \text{ CNPSW} - 218.2 \text{ CNPTW} = + 1,977.63 \\ \text{CNHAW} = 95.52 \text{ CNPSW} + 79.40 \text{ CNPSC} + 13.61 \text{ CNPSK} - .523 \text{ CNHAT} = - 817.0 - 75 T \\ \text{CNHAC} + 87.00 \text{ CNPSW} - 93.33 \text{ CNPSC} + 11.65 \text{ CNPSK} - .357 \text{ CNHAT} = 1,995.97 + 50 T \\ \text{CNHAK} + 8.52 \text{ CNPSW} + 13.93 \text{ CNPSC} - 25.26 \text{ CNPSK} - .120 \text{ CNHAT} = - 1,178.97 + 25 T \\ \text{CNQSW} = 48.57 \text{ CNPSW} - 1.75 \text{ CNHAW} = 805.1 - 32.2 \text{ CNZI} + 390 T \\ \text{CNQSC} = 55.99 \text{ CNPSC} - 2.20 \text{ CNHAC} = 861.86 - 34.6 \text{ CNZI} + 590 T \\ \text{CNQSK} = 2.576 \text{ CNPSK} - .487 \text{ CNHAK} = - 65.11 - 1.96 \text{ CNZI} + 30 T \end{aligned}$$

Regional Equilibrium Conditions

- $\text{CNQSB} + \text{CNQDB} + \text{CNQTB} = 0$
- $\text{CNQSP} + \text{CNQDP} + \text{CNQTP} = 0$
- $\text{CNQSZ} + 1.0023 \text{ CNQDZ} = 0$

Continued

CANADA --Continued

Regional Equilibrium Conditions (Continued)

$$\begin{aligned}- \text{CNQSLB} + \text{CNQDLB} + \text{CNQTLB} &= 0 \\- \text{CNQSLC} + \text{CNQDLC} + \text{CNQTLC} &= 0 \\- \text{CNQSW} + \text{CNQDWH} + \text{CNQDWF} + \text{CNQTW} &= 0 \\- \text{CNQSC} + \text{CNQDCH} + \text{CNQDCF} + \text{CNQTC} &= 0 \\ \text{CNQDRH} + \text{CNQTK} &= 0 \\- \text{CNQSK} + \text{CNQDKF} + \text{CNQTK} &= 0\end{aligned}$$

Supply-Demand Price Equations

$$\begin{aligned}\text{CNPSB} - \text{CNPDB} &= 0 \\ \text{CNPSP} - \text{CNPDP} &= 0 \\ \text{CNPSZ} - \text{CNPDZ} &= 0 \\ \text{CNPSW} - \text{CNPDW} &= - 13.61 \\ \text{CNPSC} - \text{CNPDC} &= - 6.64 \\ \text{CNPSK} - \text{CNPDK} &= - 17.33 \\ \text{CNPDLM} &= 142.27[1 + .05(.03009)]^T \\ \text{CNPSLB} - .0430 \text{ CNPDLB} &= 41.294 \\ \text{CNPSLC} - .08922 \text{ CNPDLC} &= 1.332\end{aligned}$$

Demand-Supply Price Equation

$$\text{CNPSL} - .4480 \text{ CNPDLM} - .4154 \text{ CNPSLB} - .1366 \text{ CNPSLC} = 0$$

Demand-Trade Price Equations

$$\begin{aligned}\text{CNPDB} - \text{CNPTB} &= 0 \\ \text{CNPDP} - \text{CNPTP} &= 0 \\ \text{CNPDW} - \text{CNPTW} &= 0 \\ \text{CNPDC} - \text{CNPTC} &= 0 \\ \text{CNPDK} - \text{CNPTK} &= 0 \\ \text{CNPDR} - \text{CNPTR} &= 0 \\ \text{CNPDLB} - .5 \text{ CNPTLB} &= 1,080.5 \\ \text{CNPDLG} - .5 \text{ CNPTLG} &= 528.5\end{aligned}$$

EUROPEAN COMMUNITY: ORIGINAL MEMBERS -- C6

Demand Equations

$$\begin{aligned}
 & C6QDB + 2.6972 C6PDB - 1.6403 C6PDP + .6907 C6PDZ = 1,448.4 + 4,828[1 + .6(.03263) + .00580]^T \\
 & C6QDP - 1.994 C6PDB + 4.528 C6PDP - .8590 C6PDZ = 890.3 + 4,997[1 + .5(.03263) + .00580]^T \\
 & C6QDZ - .5814 C6PDB - 1.0855 C6PDP + 2.934 C6PDZ = 363.88 + 1,917[1 + 1.0(.03263) + .00580 + .005]^T \\
 & C6QDV - .0276 C6PDB - .0392 C6PDP + .0594 C6PDV = - 11.46 + 231[1 + .00580]^T \\
 & C6QDLM + 76.52 C6PDLM = 7,881.6 + 31,526[1 + .2(.03263) + .00580]^T \\
 & C6QDLB + 4799 C6PDLB = 837.91 + 1,197[1 + .2(.03263) + .00580]^T \\
 & C6QDLC + .7591 C6PDLC = 1,099.2 + 1,832[1 + .5(.03263) + .00580]^T \\
 & C6QDWH + 44.46 C6PDW = 4,460.2 + 22,300[1 - .1(.03263) + .00580]^T \\
 & C6QDCH + 21.38 C6PDC = 1,964.8 + 9,825[1 + .1(.03263) + .00580]^T \\
 & C6QDRH + .5425 C6PDR = 181.19 + 604[1 + .2(.03263) + .00580]^T \\
 & C6QDGf - 1.3 C6QSB - 3.6 C6QSP - 2.7 C6QS2 - .25 C6QSV - .1248 C6QL - 3.1 C6QSE - 30.92 C6PSP \\
 & \quad + 253.67 C6PDC - 45.72 C6PDK = - 51,128.84 + 46,625[1 + .005]^T \\
 & C6QDWf - .185 C6QDGf + 20 C6PDW + 50 C6PTW - 50 C6PTC = 2,150.28 \\
 & C6QDCF + C6QDWf - C6QDGf = 0 \\
 & C6QDKf - .16 C6QSB - .67 C6QSP - 1.18 C6QS2 - .0326 C6QSL - .71 C6QSE - 17.8 C6PSP - 103.3 C6PDC \\
 & \quad + 25.40 C6PDK = - 30,474.74 + 10,546[1 + .004]^T
 \end{aligned}$$

Supply Equations

$$\begin{aligned}
 & C6QSB - 2.27 C6PSB + .8785 C6PSP - 6.431 C6PSL + 9.6104 C6PDC + 4.3307 C6PDK = - 441.6 + 4,416[1 + .02]^T \\
 & C6QSP + 1.952 C6PSB - 4.698 C6PSP + 3.098 C6PSL + 22.028 C6PDC + 9.926 C6PDK = 2,530.9 + 5,091[1 + .024]^T \\
 & C6QS2 + .494 C6PSB + .509 C6PSP - 2.743 C6PSL + 8.356 C6PDC + 5.649 C6PDK = 768.0 + 1,920[1 + .044]^T \\
 & C6QSV + .0376 C6PSB - .284 C6PSL + .3183 C6PDC - .0602 C6PSV = 165.74 \\
 & C6QSE = 2,576[1 + .00580]^T \\
 & C6QSL - 8.425 C6QSB - 252.9 C6PSL + 404.9 C6PDC + 218.9 C6PDK = - 3,721.96 + 74,412[1 + .003]^T \\
 & C6QLC = 1,859[1 + .5(.03263) + .010]^T \\
 & C6QL - C6QDLM - 22.935 C6QSLB - 7.105 C6QLC = 0 \\
 & C6HAT - 29.05 C6PSC = - 2,192.7 + 21,925[1 - .75(.03263) + .025]^T \\
 & C6HAW - 71.32 C6PSW + 91.67 C6PSC - .435 C6HAT = 347.41 - 80 T \\
 & C6HAC + 71.32 C6PSW - 91.67 C6PSC - .530 C6HAT = - 295.035 + 80 T \\
 & C6HAR - .2157 C6PSR = - 38.791 + 194[1 + .003]^T \\
 & C6QSW - 81.26 C6PSW - 3.19 C6HAW = - 1,574.99 - 63.07 C6ZI + 875 T \\
 & C6QSC - 156.18 C6PSC - 3.47 C6HAC = - 3,932.2 - 78.59 C6ZI + 1,260 T \\
 & C6QSR - .735 C6PSR - 3.41 C6HAR = 65.58 - 1.983 C6ZI + 6 T \\
 & C6QSK = 549 + 10 T
 \end{aligned}$$

Regional Equilibrium Conditions

$$\begin{aligned}
 & - C6QSB + C6QDB + C6QTB = 0 \\
 & - C6QSP + C6QDP + C6QTP = 0 \\
 & - C6QS2 + C6QDZ + C6QTZ = 0
 \end{aligned}$$

Continued

EUROPEAN COMMUNITY: ORIGINAL MEMBERS --Continued

Regional Equilibrium Conditions (Continued)

$- C6QTZ - C3QTZ = - 44.0$
 $- C6QSV + C6QDV + C6QTV = 0$
 $- C6QSLB + C6QDLB + C6QTLB = 0$
 $- C6QSLC + C6QDLC + C6QTLC = 0$
 $- C6QSW + C6QDWH + C6QDWF + C6QTW = 0$
 $- C6QSC + C6QDCH + C6QDCF + C6OTC = 0$
 $- C6QSR + C6QDRH + C6QTR = 0$
 $- C6QSK + C6QDKF + C6QTK = 0$

Supply-Demand Price Equations

$C6PSB - .7 C6PDB = 100.9 - 200[1 + .2(.03263)]^T$
 $C6PSP - .8 C6PDP = 197.6 - 150[1 + .2(.03263)]^T$
 $C6PSZ - .7 C6PDZ = 150.7 - 150[1 + .1(.03263)]^T$
 $C6PSV - C6PDV = 0$
 $C6PSL - .1324 C6PSB = - .3 T$
 $C6PSW - C6PDW = - 3.30$

Demand-Supply Price Equations

$C6PDLM - C6PSL = 0$
 $C6PDLB - 22.935 C6PSL = - 616.305$
 $C6PDLC - 7.105 C6PSL = 716.185$

Demand-Trade Price Equations

$C6PDB - C6PTB - C6PLB = 0 + 209[1 + .3(.03263)]^T$
 $C6PDP - C6PTP - C6PLP = - 150.0 + 150[1 + .3(.03263)]^T$
 $C6PDV - 1.2 C3PTV = 0 + 134.4[1 + .3(.03263)]^T$
 $C6PDW - C6PTW - C6PLW = - 21.82$
 $C6PDC - C6PTC - C6PLC = - 5.63 + .3 T$
 $C6PDR - C6PTR - C6PLR = 2.64$
 $C6PDK - C6PTK = 0$

Price Equations Variable Levy

$C6PLB + .2 C6PTB = 159.0 + 249[1 + .3(.03263)]^T$
 $C6PLP + .2 C6PTP = 117.2 + 297[1 + .3(.03263)]^T$
 $C6PLW + .2 C6PTW = 13.04 + 45[1 + .1(.03263)]^T$
 $C6PLC + .2 C6PTC = 12.36 + 29[1 + .1(.03263)]^T$
 $C6PLR + .2 C6PTR = 30.91 + 100[1 + .1(.03263)]^T$

Regional Price Equations

$C3PDZ - 1.4 C6PSZ = - 127.4 + 77.4 DVZ + 3 T$

EUROPEAN COMMUNITY: NEW MEMBERS -- C3

Demand Equations

$$\begin{aligned}
 C3QDB + 1.083 C3PDB - .3641 C3PDP - .2174 C3PDZ + .4361 C3PDV = 791.24 + 1,522[1 + .7(.01989) + .0041]^T \\
 C3QDP = .3954 C3PDB + 1.7722 C3PDP - .6614 C3PDZ - .4511 C3PDV = 462.98 + 1,852[1 + .45(.01989) + .0041]^T \\
 C3QDZ = .2295 C3PDB - .2314 C3PDP + .6911 C3PDZ = 0 + 645[1 + 1.0(.01989) + .0041]^T \\
 C3QDV = .0721 C3PDB - .0727 C3PDP - .1086 C3PDZ + .0871 C3PDV = - 121.58 + 608[1 - .30(.01989) + .0041]^T \\
 C3QDLM + 19.045 C3PDLM = 1,866.45 + 12,443[1 + .2(.01989) + .0041]^T \\
 C3QDLB + .3239 C3PDLB = 281.46 + 563[1 + .2(.01989) + .0041]^T \\
 C3QDLC + .2664 C3PDLC = 214.19 + 357[1 + .3(.01989) + .0041]^T \\
 C3QDWH + 17.17 C3PDW = 1,244.3 + 6,225[1 - .2(.01989) + .0041]^T \\
 C3QDCH + 19.35 C3PDC = 1,184.6 + 4,739[1 + .05(.01989) + .0041]^T \\
 C3QDRH + .2620 C3PPR = 43.49 + 145[1 + .2(.01989) + .0041]^T \\
 C3QDGF = 2.27 C3QSB - 4.22 C3QSP - 2.70 C3QS2 - .25 C3QSV - .21 C3QL - 3.1 C3QSE - 12.13 C3PSP \\
 + 165.68 C3PDC - 18.96 C3PDK = - 21,198.97 + 20,286[1 + .002]^T \\
 C3QDWF = .175 C3QDGF + 15 C3PDW - 15 C3PDC = 143.70 \\
 C3QDCF + C3QDWF = C3QDGF = 0 \\
 C3QDKF = .12 C3QSB - .55 C3QSP - 1.05 C3QS2 - .025 C3QSL - .6 C3QSE - 6.73 C3PSP - 49.46 C3PDC \\
 + 10.53 C3PDK = - 10,539.75 + 3,028[1 + .005]^T
 \end{aligned}$$

Supply Equations

$$\begin{aligned}
 C3QSB = .6329 C3PSB + .2394 C3PSP - 2.106 C3PSL + 4.358 C3PDC + 1.247 C3PDK = - 133.3 + 1,334[1 + .025]^T \\
 C3QSP = .3271 C3PSB - 1.539 C3PSP + .4923 C3PSZ + 12.009 C3PDC + 3.436 C3PDK = 367.57 + 1,838[1 + .029]^T \\
 C3QS2 + .1627 C3PSB + .1641 C3PSP - .8575 C3PSZ + 4.482 C3PDC + 1.924 C3PDK = 274.34 + 686[1 + .025]^T \\
 C3QSV + .0475 C3PSB - .4087 C3PSL + .6542 C3PDC - .1147 C3PSW = 226.95 \\
 C3QSE = 1,002[1 + .0041]^T \\
 C3QSL = 76.55 C3PSL + 67.88 C3PDC + 19.424 C3PDK = - 1,038.85 + 20,778[1 + .0073]^T \\
 C3QSLC = 281[1 + .3(.01989) + .0041]^T \\
 C3QL = C3QDLM - 21.478 C3QSLB - 8.719 C3QSLC = 0 \\
 C3HAT = 12.524 C3PSC = 4,892.0 + 20 T \\
 C3HAW = 9.614 C3PSW + 9.695 C3PSC - .211 C3HAT = - 60.06 + 5 T \\
 C3HAC = 9.614 C3PSW - 9.695 C3PSC - .789 C3HAT = 60.06 - 5 T \\
 C3QSW = 13.464 C3PSW - 4.20 C3HAW = - 10.21 C3ZID + 2.025 + 16 T \\
 C3QSC = 48.469 C3PSC - 3.68 C3HAC = - 33.41 C3ZID - 2.168 + 226 T \\
 C3QSK = 1.017 C3PSK = 533.12 + 10 T
 \end{aligned}$$

Regional Equilibrium Conditions

- C3QSB + C3QDB + C3QTB = 0
- C3QSP + C3QDP + C3QPP = 0
- C6QTZ - C3QTZ = - 44.0

Continued

EUROPEAN COMMUNITY: NEW MEMBERS --Continued

Regional Equilibrium Conditions (Continued)

- C3QSZ + C3QDZ + C3QTZ = 0
- C3QSV + C3QDV + C3QTV = 0
- C3QSLB + C3QDLB + C3QTLB = 0
- C3QSLC + C3QDLC + C3QTLC = 0
- C3QSW + C3QDWH + C3QDWF + C3QIW = 0
- C3QSC + C3QDCH + C3QDCF + C3QTC = 0
C3QDRH + C3QTR = 0
- C3QSK + C3QDKF + C3QTK = 0

Supply-Demand Price Equations

C3PSB - C3PDB = 0
C3PSP - C3PDP = 0
C3PSZ - C3PDZ = 0
C3PSV - C3PDV = 0
C3PSW - C3PDW = 3.36 - 13.36 C3DVW
C3PSC - C3PDC = 7.71 - 17.71 C3DVC
C3PSL - C3PDLM = - 3
C3PSK - C3PDK = 0

Regional Price Equations

C3PDB - C6PDB = - 410 + 410 C3DVW
C3PDP - C3PDP = - 47 + 47 C3DVP
C3PDV - C6PDV = - 274 + 274 C3DVP
C3PDW - C6PDW = - 27.85 + 27.85 C3DVW
C3PDC - C6PDC = - 30.68 + 30.68 C3DVC
C3PDR - C6PDR = - 168.00 + 168.00 C3DVR
C3PDLB - C6PDLB = - 877 + 877 C3DVLB
C3PDLC - C6PDLC = - 644 + 644 C3DVLC
C3PSL - C6PSL = - 8 + 8 C3DVL
C3PDK - C6PTK = 5.0

OTHER WESTERN EUROPE -- WE

Demand Equations

$$\begin{aligned} \text{WEQDB} + .5986 \text{WEPDB} - .2831 \text{WEPDP} - .1788 \text{WEPDZ} &= 375.1 + 1,250[1 + .7(.04161) + .00615]^T \\ \text{WEQDP} - .2370 \text{WEPDB} + 1.177 \text{WEPDP} - .4249 \text{WEPDZ} &= 445.32 + 1,485[1 + .6(.04161) + .00615]^T \\ \text{WEQDZ} - .0460 \text{WEPDB} - .1305 \text{WEPDP} + .6592 \text{WEPDZ} &= 287.91 + 576[1 + .9(.04161) + .00615]^T \\ \text{WEQDV} - .0383 \text{WEPDB} - .0544 \text{WEPDP} + .0823 \text{WEPDV} &= - 16.03 + 320[1 + .00615]^T \\ \text{WEQDLM} + 12.24 \text{WEPDLM} &= 2,594.9 + 12,971[1 + .3(.04161) + .00615]^T \\ \text{WEQDLB} + .0683 \text{WEPDLB} &= 121.92 + 244[1 + .3(.04161) + .00615]^T \\ \text{WEQDLC} + .1484 \text{WEPDLC} &= 222.0 + 370[1 + .6(.04161) + .00615]^T \\ \text{WEQDWH} + 21.46 \text{WEPDW} - 11.32 \text{WEPDC} &= 1,341.0 + 8,940[1 - .05(.04161) + .00615]^T \\ \text{WEQDCH} - 5.439 \text{WEPDW} + 16.73 \text{WEPDC} &= 755.14 + 3,777[1 + .10(.04161) + .00615]^T \\ \text{WEQDRH} - 1.104 \text{WEPDW} + 1.065 \text{WEPDR} &= 57.54 + 575[1 + .2(.04161) + .00615]^T \\ \text{WEQDGF} - 2.46 \text{WEQSB} - 4.6 \text{WEQSP} - 2.8 \text{WEQSZ} - .28 \text{WEQSL} - 10.70 \text{WEPSL} + 127.68 \text{WEPDC} &- 18.86 \text{WEPDK} \\ &\quad = 2.27 + 3,120[1 + .00615]^T \\ \text{WEQDWF} - .092 \text{WEQDGF} + 8.929 \text{WEPDW} - 9.418 \text{WEPDC} &= 190.11 \\ \text{WEQDCF} - \text{WEQDGF} + \text{WEQDWF} &= 0 \\ \text{WEQDKF} - .15 \text{WEQSB} - .65 \text{WEQSP} - 1.16 \text{WEQSZ} - .028 \text{WEQSL} - 3.914 \text{WEPSL} - 44.83 \text{WEPDC} &+ 5.517 \text{WEPDK} \\ &\quad = - 5,902.62 + 594[1 + .00615]^T + 30 T \end{aligned}$$

Supply Equations

$$\begin{aligned} \text{WEQSB} - .545 \text{WEPSB} + .2109 \text{WEPSL} + 2.684 \text{WEPDC} - 1.331 \text{WEPSL} + .9909 \text{WEPDK} &= - 105.93 + 1,060[1 + .031]^T \\ \text{WEQSP} + .3838 \text{WEPSB} - .9901 \text{WEPSL} + .6094 \text{WEPSZ} + 5.670 \text{WEPDC} + 2.094 \text{WEPDK} &= 522.6 + 1,493[1 + .020]^T \\ \text{WEQSZ} + .1373 \text{WEPSB} + .1416 \text{WEPSL} - .6539 \text{WEPSZ} + 2.028 \text{WEPDC} + 1.248 \text{WEPDK} &= 186.9 + 534[1 + .060]^T \\ \text{WEQSV} - .0526 \text{WEPSB} - .0843 \text{WEPSL} + .5184 \text{WEPDC} - 3,428 \text{WEPSL} &= - 41.01 + 273[1 + .006]^T \\ \text{WEQSL} - 54.55 \text{WEPSL} + 96.23 \text{WEPDC} + 20.30 \text{WEPDK} &= 3,258.2 + 21,720[1 + .015]^T \\ \text{WEQLC} - .1447 \text{WEPSLC} &= - 216.47 + 433[1 + .6(.04161) + .0075]^T \\ \text{WEQSL} - \text{WEQDLM} - 19.656 \text{WEQSLB} - 8.5843 \text{WEQLC} &= 0 \\ \text{WEHAT} - 32.50 \text{WEPSL} &= 11,903.98 + 21 T \\ \text{WEHAW} - 15.60 \text{WEPSL} + 16.65 \text{WEPSL} - .410 \text{WEHAT} &= - .748 - 49 T \\ \text{WEHAC} + 15.60 \text{WEPSL} - 16.65 \text{WEPSL} + .5095 \text{WEPSK} - .554 \text{WEHAT} &= 45.93 + 39 T \\ \text{WEHAR} - .1762 \text{WEPSR} &= 102.85 \\ \text{WEHAK} - .5095 \text{WEPSK} + .036 \text{WEHAT} &= 1,026.2 + 10 T \\ \text{WEQSW} - 25.27 \text{WEPSL} - 1.62 \text{WEHAW} &= - 989.64 + 213 T - 14.82 \text{WEZI} \\ \text{WEQSC} - 59.22 \text{WEPSL} - 2.195 \text{WEHAC} &= 2,712.6 + 250 T - 27.11 \text{WEZI} \\ \text{WEQSR} - .6553 \text{WEPSR} - 3.719 \text{WEHAR} &= 0 + 4 T - .675 \text{WEZI} \\ \text{WEQSK} - 1.000 \text{WEPSK} - .587 \text{WEHAK} &= 803.62 + 4 T - 1.605 \text{WEZI} \end{aligned}$$

Regional Equilibrium Conditions

- WEQSB + QDB + WEQTB = 0
- WEQSP + WEQDP + WEQTP = 0

Continued

OTHER WESTERN EUROPE --Continued

Regional Equilibrium Conditions (Continued)

- WEQSZ + .9271 WEQDZ = 0
- WEQSY + WEQDW + WEQTV = 0
- WEQSLE + WEQDLB + WEQLB = 0
- WEQSLC + WEQDLC + WEQTLC = 0
- WEQSW + WEQDWH + WEQDMF + WEQTW = 0
- WEQSC + WEQDCH + WEQDCF + WEQTC = 0
- WEQSR + WEQDRH + WEQTR = 0
- WEQSK + WEQDKF + WEQTK = 0

Supply-Demand Price Equations

WEPSB - .7 WEPDB = 100.9 - 200[1 + .2(.04161)]^T
WEPSP - .8 WEPDP = 197.6 - 150[1 + .2(.04161)]^T
WEPSZ - .7 WEPDZ = 150.7 - 150[1 + .1(.04161)]^T
WEPSV - WEPDV = 0
WEPSW - WEPDW = - 6.43
WEpsc - WEPDC = 12.57
WEPSR - WEPDR = - 59.0
WEPSK - WEPDK = 0
WEPSL - WEPDLM = - 92.56

Demand-Supply Price Equations

WEPDLC - WEPSLC = 0
WEQDLB - 19.656 WEPSL = - 562.71

Demand-Trade Equations

WEPDR - 1.0(1.0) WEPTR = 0
WEPDLC - 1.0(1.0) WEPTLC = - 59
WEQDLB - 1.0(1.0) WEPTLB = 0

Price Connections to C6

WEPDB - C6PDB = 0
WEPDP - C6PDP = 0
WEPDV - C6PDV = 0
WEPDW - C6PDW = 3.84
WEPDC - C6PDC = - 12.9
WEPDK - C6PDK = 5.0

JAPAN -- JP

Demand Equations

$$\begin{aligned} \text{JPQDB} + .2529 \text{ JPPDB} - .0812 \text{ JPPDP} - .1349 \text{ JPPDZ} &= 172.8 + 293[1 + 1.2(.05452) + .01073 + .02]^T \\ \text{JPQDP} - .096 \text{ JPPDB} + .640 \text{ JPPDP} - .0965 \text{ JPPDZ} &= 393.54 + 667[1 + .9(.05452) + .01073 + .02]^T \\ \text{JPQDZ} - .1759 \text{ JPPDB} - .0886 \text{ JPPDP} + .7078 \text{ JPPDZ} &= 210.32 + 489[1 + .6(.05452) + .01073 + .01]^T \\ \text{JPQDV} + .0475 \text{ JPPDB} - .0352 \text{ JPPDP} - .0651 \text{ JPPDZ} + .4330 \text{ JPPBV} &= 49.53 + 165[1 + .5(.05452) + .01073]^T \\ \text{JPQDLM} + 18.39 \text{ JPPDLM} &= 2,420.3 + 3,458[1 + .95(.05452) + .01073]^T \\ \text{JPQDLB} + .0484 \text{ JPPDLB} &= 31.85 + 45.5[1 + 1.0(.05452) + .01073]^T \\ \text{JPQDLC} + .1187 \text{ JPPDLC} &= 72.41 + 42.9[1 + 1.25(.05452) + .01073]^T \\ \text{JPQDWH} + 61.88 \text{ JPPDW} - 7.309 \text{ JPPDR} &= 1,257.7 + 5,030[1 + .2(.05452) + .01073]^T + 50 T \\ \text{JPQDCH} + 18.57 \text{ JPPDC} &= 466.66 + 1,867[1 + .2(.05452) + .01073]^T \\ \text{JPQDR} - 32.00 \text{ JPPDW} + 12.76 \text{ JPPDR} &= 585.47 + 11,706[1 - .2(.05452) + .01073]^T \\ \text{JPQDKH} - .8 \text{ JPQDSH} + .8 \text{ JPQSS} &= 0 \\ \text{JPQDSH} + 2.498 \text{ JPPDS} - .2215 \text{ JPPDP} &= - 103.88 + 1,039[1 + .8(.01073)]^T \\ \text{JPQDG} - 2.33 \text{ JPQSB} - 5.09 \text{ JPQSP} - 2.4 \text{ JPQSZ} - .2 \text{ JPQSL} - 2.4 \text{ JPQSE} - 19.01 \text{ JPPSP} + 242.4 \text{ JPPDC} \\ &\quad - 19.53 \text{ JPPDK} = - 10,119.9 + 10,153[1 + .005]^T + 200 T \\ \text{JPQDCF} - \text{JPQDF} - 700 \text{ JPQVC} &= - 905 \\ \text{JPQDKF} - .5 \text{ JPQSB} - 1.4 \text{ JPQSP} - 1.2 \text{ JPQSZ} - .08 \text{ JPQSL} - .7 \text{ JPQSE} - 17.537 \text{ JPPSP} - 142.6 \text{ JPPDC} \\ &\quad + 18.76 \text{ JPPDK} = - 10,482.84 + 3,124[1 + .01]^T \end{aligned}$$

Supply Equations

$$\begin{aligned} \text{JPQSB} - .2939 \text{ JPPSB} + .094 \text{ JPPSP} + .1307 \text{ JPPSZ} + 2.9964 \text{ JPPDC} - 1.0393 \text{ JPPSL} &= - 50.2 + 251[1 + .02]^T \\ &\quad + 25 T \\ \text{JPQSP} - 1.6648 \text{ JPPSP} + .6615 \text{ JPPSZ} + 10.107 \text{ JPPDC} + 2.4428 \text{ JPPDK} + 1.972 \text{ JPPSL} &= 158.75 + 635[1 + .02]^T \\ &\quad + 80 T \\ \text{JPQSZ} + .3558 \text{ JPPSP} - 1.7318 \text{ JPPSZ} + 7.5607 \text{ JPPDC} + 2.741 \text{ JPPDK} &= 95 + 475[1 + .05]^T \\ \text{JPQSE} &= 1,760[1 + .01073]^T \\ \text{JPQSL} - 77.80 \text{ JPPSL} + 46.73 \text{ JPPDC} + 27.10 \text{ JPPDK} &= - 1,174.5 + 4,697[1 + .050]^T \\ \text{JPQSLC} &= 9.83[1 + 1.25(.05452) + .01073]^T \\ \text{JPQSL} - \text{JPQDLM} - 25.36 \text{ JPQSLB} - 9.56 \text{ JPQSLC} &= 0 \\ \text{JPHAT} - 1.179 \text{ JPPSR} &= 3,456.07 - 52 T \\ \text{JPHAW} - .062 \text{ JPHAT} &= - .556 - 3.9 T \\ \text{JPHAC} - .073 \text{ JPHAT} &= - .574 - 1.8 T \\ \text{JPHAR} + 1.212 \text{ JPPSS} - .233 \text{ JPPSR} - .8160 \text{ JPHAT} &= 13.845 - 5.4 T \\ \text{JPHAS} - 1.212 \text{ JPPSS} + .233 \text{ JPPSR} - .049 \text{ JPHAT} &= - 12.715 + 11.1 T \\ \text{JPQSW} - 2.816 \text{ JPPSW} - 2.45 \text{ JPHAW} &= - 111.27 - .55 \text{ JPZI} + 4 T \\ \text{JPQSC} - 2.745 \text{ JPPSC} - 2.73 \text{ JPHAC} &= - 107.2 - .725 \text{ JPZI} + 3 T \\ \text{JPQSR} - 11.08 \text{ JPPSR} - 3.84 \text{ JPHAR} &= 573.13 - 22.8 \text{ JPZI} + 48 T \\ \text{JPQSK} - 1.881 \text{ JPPSK} &= 880.21 + 15 T \\ \text{JPQSS} - .8115 \text{ JPPSS} + 1.25 \text{ JPHAS} &= 0 - .3375 \text{ JPZI} + 5.1 T \end{aligned}$$

Continued

JAPAN --Continued

Regional Equilibrium Conditions

- JPQSB + JPQDB + JPQTB = 0
- JPQSP + JPQDP + JPQTP = 0
- JPQSZ + .9714 JPQZ = 0
- JPQDV + JPQTV = 0
- JPQSLB + JPQDLB + JPQTLB = 0
- JPQSLC + JPQDLC + JPQTLC = 0
- JPQSW + JPQDW + JPQTW = 0
- JPQSC + JPQDCH + JPQDCF + JPQTC = 0
- JPQSR + JPQDR = 106
- JPQSK + JPQDKH + JPQDKF + JPQTK = 0

Supply-Demand Price Equations

$$\begin{aligned} JPPSB &= .65 JPPDB + -476.5[1 + .1(.05452)]^T \\ JPPSP &= .8 JPPDP = -483.4[1 + .03(.05452)]^T \\ JPPSZ &= .7 JPPDZ = -340 \\ JPPSL &= JPPDLM = -83.31[1 + .1(.05452)]^T \\ JPPSW &= JPPDW = 22.02 \\ JPPSC &= JPPDC = 40.90 \\ JPPSR &= JPPDR = 16.69 \\ JPPSS &= JPPDS = 0 \\ JPPSK &= JPPDK = 0 \end{aligned}$$

Demand-Supply Price Equations

$$\begin{aligned} JPPDLB &= 25.36 JPPSL = -566.89 \\ JPPSS &= .8 JPPDK = 0 \end{aligned}$$

Demand-Trade Price Equations

$$\begin{aligned} JPPDB &= .4 JPPTB = 199.30 + 1,058[1 + .1(.05452)]^T \\ JPPDP &= .4 JPPTP = 768.35 \\ JPPDV &= 1.0 JPPTV = .09 \\ JPPDLB &= 1.0 JPPTLB = 411.97 \\ JPPDLC &= 1.0 JPPTLC = 392.22 \\ JPPDW &= 1.0 JPPTW = 13.06 \\ JPPDC &= 1.0 JPPTC = .398 \\ JPPDK &= 1.0 JPPTK = 0 \end{aligned}$$

OCEANIA (AUSTRALIA-NEW ZEALAND) -- AZ

Demand Equations

$$\begin{aligned} \text{AZQDB} + .5477 \text{ AZPDB} - .3554 \text{ AZPDV} &= 196.20 + 654[1 + .01769]^T \\ \text{AZQDP} - .0693 \text{ AZPDB} + .15 \text{ AZPDP} &= 41.43 + 207[1 + .1(.02913) + .01769]^T \\ \text{AZQDV} - .4047 \text{ AZPDB} + 1.3130 \text{ AZPDV} &= 241.60 + 604[1 - .3(.02913) + .01769]^T \\ \text{AZQDLM} + 6.589 \text{ AZPDLM} &= 643.02 + 3,215[1 + .1(.02913) + .01769]^T \\ \text{AZQDLB} + .0650 \text{ AZPDLB} &= 69.55 + 174[1 + .1(.02913) + .01769]^T \\ \text{AZQDLC} + .0272 \text{ AZPDLC} &= 17.98 + 60[1 + .5(.02913) + .01769]^T \\ \text{AZQDWH} + 5.841 \text{ AZPDW} &= 328.54 + 2,190[1 - .25(.02913) + .01769]^T \\ \text{AZQDCH} + 4.404 \text{ AZPDC} &= 147.75 + 985[1 - .2(.02913) + .01769]^T \\ \text{AZQDRH} + .0412 \text{ AZPDR} &= 6.14 + 61[1 + .1(.02913) + .01769]^T \\ \text{AZQDGF} - .3 \text{ AZQSB} - 3.4 \text{ AZQSP} - 3.0 \text{ AZQSZ} - .12 \text{ AZQSL} - 3.0 \text{ AZQSE} - 1.53 \text{ AZPSP} + 25.13 \text{ AZPDC} \\ &\quad = - 3,953.7 + 2,810[1 + .002]^T \\ \text{AZQDWF} + 4.321 \text{ AZPDW} - .29 \text{ AZQGF} &= 238.1 \\ \text{AZQDCF} + \text{AZQDWF} - \text{AZQDGF} &= 0 \\ \text{AZQDK} + .3478 \text{ AZPDK} &= 45.60 + 152[1 + .02]^T \end{aligned}$$

Supply Equations

$$\begin{aligned} \text{AZQSB} - .9279 \text{ AZPSB} + .3764 \text{ AZPSV} &= - 415.5 + 1,385[1 + .03]^T \\ \text{AZQSP} + .03551 \text{ AZPSB} - .1152 \text{ AZPSP} + 1.2638 \text{ AZPDC} &= 0 + 212[1 + .005]^T \\ \text{AZQSZ} &= 153[1 + .7(.02913) + .01769]^T \\ \text{AZQSV} - .7163 \text{ AZPSV} &= - 263.6 + 1,318[1 + .022]^T \\ \text{AZQSE} &= 236[1 + .01769]^T \\ \text{AZQSL} - 133.3 \text{ AZPSL} + 81.91 \text{ AZPDC} &= - 2,749.21 + 13,741[1 + .01]^T \\ \text{AZQSLC} - .2693 \text{ AZPDLC} + .1664 \text{ APQDLB} &= .0407 + 178[1 + .5(.02913) + .01769]^T \\ \text{AZQSL} - \text{AZQDLM} &= 19.794 \text{ AZQSLB} - 9.539 \text{ AZQSLC} = 0 \\ \text{AZHAT} - 44.76 \text{ AZPSW} - 197.35 \text{ AZPTW} &= - .3487 + 193 T \\ \text{AZHAW} - 57.58 \text{ AZPSW} + 81.89 \text{ AZPSC} - .642 \text{ AZHAT} &= - 378.04 \\ \text{AZHAC} + 57.58 \text{ AZPSW} - 81.89 \text{ AZPSC} - .342 \text{ AZHAT} &= 378.3 - 11 T \\ \text{AZHAR} - .072 \text{ AZPSR} &= 33.33 + 2 T \\ \text{AZHAK} - .446 \text{ AZPSK} - .016 \text{ AZHAT} &= - 58.75 + 11 T \\ \text{AZQSW} - 25.91 \text{ AZPSW} - 1.20 \text{ AZHAW} &= .1399 - 14.13 \text{ AZZID} + 160 T \\ \text{AZQSC} - 24.18 \text{ AZPSC} - 1.30 \text{ AZHAC} &= - .04 - 8.112 \text{ AZZID} + 115 T \\ \text{AZQSR} - .3745 \text{ AZPSR} - 5.16 \text{ AZHAR} &= .08 - .191 \text{ AZZID} \\ \text{AZQSK} - .069 \text{ AZPSK} - .31 \text{ AZHAK} &= 3.50 - .06 \text{ AZZID} + 2.4 T \end{aligned}$$

Regional Equilibrium Conditions

- AZQSB + AZQDB + AZQTB = 0
- AZQSP + 1.024 AZQDP = 0
- AZQSV + AZQDV + AZQTB = 0

Continued

OCEANIA--Continued

Regional Equilibrium Conditions (Continued)

- AZQSLB + AZQDLB + AZQTBLB = 0
- AZQSLC + AZQDLC + AZQTLC = 0
- AZQSW + AZQDW + AZQDW + AZQIW = 0
- AZQSC + AZQDCH + AZQDCF + AZQTC = 0
- AZQSR + AZQDRH + AZQTR = 0
- AZQSK + AZQDK + AZQTK = 0

Supply-Demand Price Equations

- AZPSB - AZPDB = 0
- AZPSP - AZPDP = 0
- AZPSV - AZPDV = 0
- AZPSL - .2340 AZPDL - .6425 AZPSLR - .1236 AZPSLC = - 13.1981
- AZPSLB - .05052 AZPDLB = - 12.8064
- AZPSLC - .10483 AZPDLC = - 28.04
- AZPSW - AZPDW = - 1.71
- AZPSC - AZPDC = 0
- AZPSR - .3 AZPDR = + 6.6
- AZPSK - AZPDK = 0

Demand-Supply Equation

$$AZPDLM = 97.59[1 + (.02913)]^T$$

Demand-Trade Price Equations

- AZPDB - .6406 AZPTB = 0
- AZPDV - 1.0 AZPTV = 0
- AZPDLB - 1.0 AZPTLB = 443.9
- AZPDLC - 1.0 AZPTCL = 110.24
- AZPDW - .5 AZPTW = 31.50
- AZPDC - 1.0 AZPTC = - 2.65
- AZPDR - 1.0 AZPTR = 0
- AZPDK - 1.0 AZPTK = 30.636

SOUTH AFRICA -- SF

Demand Equations

$$\begin{aligned} SFQDWH + 1.878 SFPDW - 2.251 SFPDC &= 65.71 + 1,315[1 + .1(.02383) + .02964]^T \\ SFQDCH - 1.016 SFPDW + 4.870 SFPDC &= 177.82 + 3,556[1 - .05(.02383) + .02964]^T \\ SFQDRH + .1262 SFPTW - 11.00 SFPDW &= 11.54 + 77[1 + .1(.02383) + .02964]^T \\ SFQDCF + 11.68 SFPDC &= 682.35 + 2,274[1 + .25(.02383) + .02964]^T \\ SFQDKF - .1869 SFQDCF &= 0 \end{aligned}$$

Supply Equations

$$\begin{aligned} SFHAT - 13.96 SFPSC - 24.96 SFPTC &= 5,084.84 + 61 T \\ SFHAW - 6.124 SFPSW - .268 SFHAT &= - 732.87 + 15 T \\ SFHAC - 27.39 SFPTC + 17.71 SFPSK - .732 SFHAT &= - 3,446 - 3 T \\ SFQSW - 3.821 SFPSW - .75 SFHAW &= - 221.48 + 34 T - 1.46 SFZI \\ SFQSC - 44.92 SFPTC - 1.64 SFHAC &= - 1,742.8 + 150 T - 8.715 SFZI \\ SFQSK - .7600 SFPTK &= 615.6 + 15 T \end{aligned}$$

Regional Equilibrium Conditions

$$\begin{aligned} - SFQSW + SFQDWH + SFQTW &= 0 \\ - SFQSC + SFQDCH + SFQDCF + SFQTC &= 0 \\ SFQDRH + SFQDRH &= 0 \\ - SFQSK + SFQDKF + SFQTK &= 0 \end{aligned}$$

Supply-Demand Price Equations

$$\begin{aligned} SFPSW - SFPDW &= - 9.49 \\ SFPSC - SFPTC &= - 6.16 \end{aligned}$$

Demand-Trade Price Equations

$$\begin{aligned} SFPDW - SFPTW &= 43.18 \\ SFPDC - SFPTC &= .22 \end{aligned}$$

EASTERN EUROPE--EE

Trade Equations

$$\begin{aligned} \text{EEQTB} &= .0572 \text{ C6PTB} = -45.47 + 91[1 + .4(.0452) + .007]^T \\ \text{EEQTP} &= -.0435 \text{ C6PTP} = -25.49 + 51[1 + .3(.0452) + .007]^T \\ \text{EEQTW} + 17.03 \text{ USPTW} &= 5,261.17 - 200 T \\ \text{EEQTC} + 13.58 \text{ USPTC} &= 3,775.15 + 1,550[1 + .3(.0452) + .007]^T \\ \text{EEQTR} + .8366 \text{ THPTR} &= 128 + 256[1 + .3(.0452) + .007]^T \\ \text{EEQTK} + 15.26 \text{ USPTK} &= 2,666.06 + 250 T \end{aligned}$$

SOVIET UNION--SV

Trade Equations

$$\begin{aligned} \text{SVQTB} + .0566 \text{ C6PTB} &= -154.00 + 150[1 + .4(.0478) + .0103]^T \\ \text{SVQTW} - 25.54 \text{ USPTW} &= -1,970.36 \\ \text{SVQTC} + 13.14 \text{ USPTC} &= 12,192.40 \\ \text{SVQTR} + .6235 \text{ THPTR} &= 413.40 \\ \text{SVQTK} + 15.26 \text{ USPTK} &= 1,500.06 + 230 T \end{aligned}$$

CHINA--CH

Trade Equations

$$\begin{aligned} \text{CHQTP} &= 143.0 - 2 T \\ \text{CHQTW} + 33.33 \text{ USPTW} &= 4,342.57 + 3,915[1 + .0156]^T \\ \text{CHQTC} &= 100.0 + 500[1 + .3(.0239) + .0156]^T \\ \text{CHQTR} - 2.866 \text{ THPTR} &= 438.50 - 8 T \\ \text{CHQTK} &= -200.0 - 20 T \end{aligned}$$

MIDDLE AMERICA -- MC

Demand Equations

$$\begin{aligned}
 MCQDB + .3715 MCPDB - .0724 MCPD\bar{P} &= 207.55 + 692[1 + .7(.02946) + .03103]^T \\
 MCQDP - .0454 MCPDB + .1061 MCPD\bar{P} &= 67.61 + 338[1 + .6(.02946) + .03103]^T \\
 MCQDWH + 8.482 MCPDW - 1.252 MCPDR - 4.879 MCPDC &= 285.44 + 2,855[1 + .35(.02946) + .03103]^T \\
 MCQDCH - 4.280 MCPDW + 22.97 MCPDC &= 1,512.12 + 10,083[1 + .1(.02946) + .03103]^T \\
 MCQDRH - 1.447 MCPDW + 1.495 MCPDR - .4853 MCPDC &= 127.80 + 852[1 + .35(.02946) + .03103]^T \\
 MCQDCF - .3 MCQSB - 3.0 MCQSP - .6301 MCPSP + 6.863 MCPDC &= .1585 + 1,745[1 + .1(.02946) + .03103]^T \\
 MCQDWF - .0315 MCQDCF &= 0 \\
 MCQDKF + 1.277 MCPDK - 2.096 MCPDC &= .3054 MCQDCF = .18
 \end{aligned}$$

Supply Equations

$$\begin{aligned}
 MCQSB - .4526 MCPSB + .0882 MCPSP &= - 252.67 + 843[1 + .0380]^T + 15 T \\
 MCQSP + .0454 MCPSB - .1061 MCPSP + 1.540 MCPDC &= 67.57 + 338[1 + .0380]^T \\
 MCHAT - 39.96 MCPSC &= 10,309.6 + 95 T \\
 MCHAW - 4.616 MCPSW + 2.907 MCPSC + .3740 MCPSK - .0582 MCHAT &= - 96.10 - 8 T \\
 MCHAC + 3.023 MCPSW - 6.853 MCPSC + 1.534 MCPSK - .8575 MCHAT &= - .54 + 2 T \\
 MCHAR - .2685 MCPSR - .0417 MCHAT &= - 80.94 + 2 T \\
 MCHAK + 1.593 MCPSW + 3.946 MCPSC - 1.908 MCPSK - .0426 MCHAT &= 97.03 + 4 T \\
 MCQSW - 5.745 MCPSW - 2.80 MCHAW &= - 2,520.02 + 45 T + 2,100[1 + .75(0)]^T \\
 MCQSC - 14.03 MCPSC - 1.170 MCHAC &= - 13,833.43 + 400 T + 12,930[1 + .75(0)]^T \\
 MCQSR - .240 MCPSR - 1.339 MCHAR &= - 791.04 + 6 T + 719[1 + 1.125(0)]^T \\
 MCQSK - .2744 MCPSK - .7460 MCHAK &= - 449.8 + 7.75 T + 791[1 + .3(0)]^T
 \end{aligned}$$

Regional Equilibrium Conditions

- MCQSB + MCQDB + MCQTB = 0
- MCQSP + MCQDP + MCQTP = 0
- MCQSW + MCQDWH + MCQDWF + MCQTW = 0
- MCQSC + MCQDCH + MCQDCF + MCQTC = 0
- MCQSR + MCQDRH + MCQTR = 0
- MCQSK + MCQTK = 0

Supply-Demand Price Equations

$$\begin{aligned}
 MCPSB - MCPDB &= 0 \\
 MCPSP - MCPDP &= 0 \\
 MCPSW - MCPDW &= - 44.69 \\
 MCPSC - MCPDC &= - 23.28 \\
 MCPSR - MCPDR &= 72.00 \\
 MCPSK - MCPDK &= 0
 \end{aligned}$$

Demand-Trade Price Equations

$$\begin{aligned}
 MCPDB - 1.0 (1.0) MCPTB &= 0 \\
 MCPDP - 1.0 (1.0) MCPTP &= 0 \\
 MCPDW - 1.0 (1.0) MCPTW &= 49.78 \\
 MCPDC - 1.0 (1.0) MCPTC &= 11.19 \\
 MCPDK - 1.0 (1.0) MCPTK &= 0 \\
 MCPDR - 1.0 (1.0) MCPTR &= 0
 \end{aligned}$$

ARGENTINA -- AR

Demand Equations

$$\begin{aligned} \text{ARQDB} + .3179 \text{ ARPDB} &= 746.11 + 1,865[1 + .2(.03125) + .01265]^T \\ \text{ARQDP} - .0183 \text{ ARPDB} + .0628 \text{ ARPDP} &= 43.02 + 215[1 + .01265]^T \\ \text{ARQDV} - .0117 \text{ ARPDB} + .0323 \text{ ARPDV} &= 27.4 + 137[1 + .01265]^T \\ \text{ARQDW} + 2.371 \text{ ARPDW} - .9225 \text{ ARPDC} &= 211.26 + 4,225[1 - .1(.03125) + .01265]^T \\ \text{ARQDCH} - .3611 \text{ ARPDW} + .5620 \text{ ARPDC} &= 64.35 + 1,287[1 - .25(.03125) + .01265]^T \\ \text{ARQDRH} - .0455 \text{ ARPDW} + .0873 \text{ ARPDR} &= 24.28 + 162[1 + .15(.03125) + .01265]^T \\ \text{ARQDCF} - .5 \text{ ARQSB} - 3.6 \text{ ARQSP} - 1.128 \text{ ARPSP} + 6.744 \text{ ARPDC} &= 0 + 3,101[1 + .2(.03125) + .01265]^T \\ \text{ARQDK} - .0472 \text{ ARQDCF} + .5000 \text{ ARPDK} + 121.49 & \end{aligned}$$

Supply Equations

$$\begin{aligned} \text{ARQSB} - 1.169 \text{ ARPSC} &= - 1,252.0 + 2,503[1 + .0150]^T \\ \text{ARQSP} + .0206 \text{ ARPSC} - .0484 \text{ ARPSP} + .1930 \text{ ARPDC} &= 0 + 221[1 + .025]^T \\ \text{ARQSV} - .02157 \text{ ARPSC} &= - 36.6 + 183[1 + .002]^T \\ \text{ARHAT} - 23.61 \text{ ARPSC} - 35.11 \text{ ARPSC} &= 13.07 + 152 T \\ \text{ARHAW} - 9.881 \text{ ARPSC} + 5.959 \text{ ARPSC} - .326 \text{ ARHAT} &= - 400.7 - 20 T \\ \text{ARHAC} + 7.993 \text{ ARPSC} - 8.887 \text{ ARPSC} + 4.156 \text{ ARPSC} - .502 \text{ ARHAT} &= 397.6 + 18 T \\ \text{ARHAR} - .0873 \text{ ARPSC} - .006 \text{ ARHAT} &= - 15.84 \\ \text{ARHAK} + 1.888 \text{ ARPSC} + 2.928 \text{ ARPSC} - 4.156 \text{ ARPSC} - .166 \text{ ARHAT} &= - 2.8 + 2 T \\ \text{ARQSW} - 3.297 \text{ ARPSC} - 1.335 \text{ ARHAW} &= - 1.7 - 5.875 \text{ ARZI} + 138 T \\ \text{ARQSC} - 8.59 \text{ ARPSC} - 1.933 \text{ ARHAC} &= - 654.31 - 13.115 \text{ ARZI} + 125 T \\ \text{ARQSR} - .1863 \text{ ARPSC} - 2.667 \text{ ARHAR} &= - 23.22 - .232 \text{ ARZI} \\ \text{ARQSK} - .4263 \text{ ARPSC} - .462 \text{ ARHAK} &= - .72 - 1.036 \text{ ARZI} + 7 T \end{aligned}$$

Regional Equilibrium Conditions

$$\begin{aligned} - \text{ARQSB} + \text{ARQDB} + \text{ARQTB} &= 0 \\ - \text{ARQSP} + 1.028 \text{ ARQDP} &= 0 \\ - \text{ARQSV} + \text{ARQDV} + \text{ARQTV} &= 0 \\ - \text{ARQSW} + \text{ARQDW} + \text{ARQTW} &= 0 \\ - \text{ARQSC} + \text{ARQDCH} + \text{ARQDCF} + \text{ARQTC} &= 0 \\ - \text{ARQSR} + \text{ARQDRH} + \text{ARQTR} &= 0 \\ - \text{ARQSK} + \text{ARQDK} + \text{ARQTK} &= 0 \end{aligned}$$

Supply-Demand Price Equations

$$\begin{aligned} \text{ARPSC} - \text{ARPDC} &= 0 \\ \text{ARPSC} - \text{ARPDR} &= - 122.0 \\ \text{ARPSC} - \text{ARPDK} &= 0 \\ \text{ARPDB} - .57(3.75) \text{ ARPTB} &= - .12 \\ \text{ARPDV} - (3.75) \text{ ARPTV} &= 0 \\ \text{ARPDW} - (3.75) \text{ ARPTW} &= - 41.81 \\ \text{ARPDC} - (3.57) \text{ ARPTC} &= - 1.625 \\ \text{ARPDR} - (3.57) \text{ ARPTR} &= 0 \\ \text{ARPDK} - (3.75) \text{ ARPTK} &= 0 \end{aligned}$$

Supply-Demand Price Equations (Continued)

Demand-Trade Price Equations

$$\begin{aligned} \text{ARPTB} &= - .12 \\ \text{ARPTV} &= 0 \\ \text{ARPTW} &= - 41.81 \\ \text{ARPTC} &= - 1.625 \\ \text{ARPTR} &= 0 \\ \text{ARPTK} &= 0 \end{aligned}$$

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BRAZIL -- BZ

Demand Equations

Supply Equations

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BZQSB - 1.461 BZPDB = - 916.05 + 1,832[1 + .0325]T
BZQSP + .0974 BZPSB - .3703 BZPSP + 3.552 BZPDC + 1.095 BZPDK = 91.61 + 611[1 + .035]T
BZHAT - 99.60 BZPSC - 53.97 BZPSK = 11,035.18 + 800 T
BZHAW - 12.01 BZPSW + 34.88 BZPSC - .100 BZHAT = .49 - 39 T
BZHAC + 12.01 BZPSW - 84.48 BZPSC + 29.91 BZPSK - .566 BZHAT = 197.38 - 187 T
BZHAR + 13.22 BZPSC - 10.85 BZPSR - .265 BZHAT = - 481.16 - 109 T
BZHAK + 36.38 BZPSC - 29.91 BZPSK - .069 BZHAT = 4306.8 + 455 T
BZQSW - .8231 BZPSW - .96 BZHAW = - 1,854.7 + 52 T + 1,766[1 + .8(0)]T
BZQSC - 39.43 BZPSC - 1.40 BZHAC = - 16,016.15 + 405 T + 14,560[1 + 1.3(0)]T
BZQSR - 4.221 BZPSR - .973 BZHAR = - 5,129.1 + 4,749[1 + 1.2(0)]T + 60 T
BZOSK - 1.333 BZPSK - .807 BZHAK = - 1,116.55 + 207 T + 1,817[1 + .3(0)]T

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Regional Equilibrium Conditions

- BZQSB + BZQDB + BZQTB = 0
- BZQSF + 1.0016 BZQDP = 0
- BZQSW - BZQDW + BZQTW = 0
- BZQSC + BZQDH + BZQDCF + BZQTC = 0
- BZQSR + BZQDRH + BZQTR = 0
- BZQSK + BZQDKF + BZQTK = 0

Supply-Demand Price Equations

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BZPSB - BZPDB = 0
BZPSW - .6 BZPDW = 48.522
BZPSP - BZPDP = 0
BZPSC - BZPDC = - 14.67
BZPSR - BZPDR = - 114
BZPSV - BZPDW = - 15.54

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Demand-Trade Price Equations

BZPDB - BZPTB = 0
 BZPDW - BZPTW = 25.17
 BZPDC - BZPTC = - 7.34
 BZPDR - BZPTR = 93
 BZPDK - BZPTK = 0

VENEZUELA -- VN

Demand Equations

$$\begin{aligned} \text{VNQDWH} + 3.333 \text{ VNPDW} - .4070 \text{ VNPDR} - 1.122 \text{ VNPDC} &= 70.73 + 707[1 + .35(.02687) + .02948]^T \\ \text{VNQDCH} - 1.756 \text{ VNPDW} + 2.956 \text{ VNPDC} &= 74.48 + 745[1 + .15(.02687) + .02948]^T \\ \text{VNQDRH} - .3583 \text{ VNPDW} + .0656 \text{ VNPDR} &= - 11.4 + 114[1 + .15(.02687) + .02948]^T \\ \text{VNQDCF} + 1.429 \text{ VNPDC} &= 90.03 + 300[1 + .4(.02687) + .02948]^T \end{aligned}$$

Supply Equations

$$\begin{aligned} \text{VNHAT} - .9135 \text{ VNPSC} &= 657.0 + 2.7 T \\ \text{VNHAC} - 1.143 \text{ VNPSC} + .4365 \text{ VNPSR} - .834 \text{ VNHAT} &= - 30.25 + 3 T \\ \text{VNHAR} + 1.143 \text{ VNPSC} - .4365 \text{ VNPSR} - .166 \text{ VNHAT} &= 30.25 - 3 T \\ \text{VNQSC} - 1.314 \text{ VNPSC} - 1.149 \text{ VNHAC} &= - 804.74 + 17 T + 700[1 + 1.5(0)]^T \\ \text{VNQSR} - .1408 \text{ VNPSR} - 1.083 \text{ VNHAR} &= - 150.69 + 4 T + 131[1 + 1.375(0)]^T \end{aligned}$$

Regional Equilibrium Conditions

$$\begin{aligned} \text{VNQDWH} + \text{VNQFW} &= 0 \\ - \text{VNQSC} + \text{VNQDCH} + \text{VNQDCF} + \text{VNQTC} &= 0 \\ - \text{VNQSR} + \text{VNQDRH} + \text{VNQDR} &= 0 \end{aligned}$$

Supply-Demand Price Equations

$$\begin{aligned} \text{VNPSC} - .5 \text{ VNPDC} &= 48.41 \\ \text{VNPSR} - \text{VNPDR} &= - 34.16 \end{aligned}$$

Demand-Trade Price Equations

$$\begin{aligned} \text{VNPDW} - \text{VSPTW} &= 4.91 \\ \text{VNPDC} - \text{VNPTC} &= - 3.91 \\ \text{VNPDR} - \text{VN PTR} &= 51.69 \end{aligned}$$

OTHER SOUTH AMERICA -- LA

Demand Equations

$$\begin{aligned} \text{LAQDW} + 13.43 \text{ LAPDW} - 1.587 \text{ LAPDR} - 9.943 \text{ LAPDC} &= + .33 + 3,840[1 + .3(.01925) + .02760]^T \\ \text{LAQDCH} - 6.449 \text{ LAPDW} + 13.93 \text{ LAPDC} &= 345.80 + 2,306[1 + .15(.01925) + .02760]^T \\ \text{LAQDRH} - 3.577 \text{ LAPDW} + 1.057 \text{ LAPDR} &= + .003 + 1,279[1 + .35(.01925) + .02760]^T \\ \text{LAQDCF} + .11.08 \text{ LAPDC} &= 641.86 + 1,604[1 + .2(.01925) + .02760]^T \\ \text{LAQDKF} + 1.070 \text{ LAPDK} - .21 \text{ LAQDCF} &= 106.46 \end{aligned}$$

Supply Equations

$$\begin{aligned} \text{LAHAT} - 14.59 \text{ LAPSC} &= 4,315.8 + 65 T \\ \text{LAHAW} - 2.654 \text{ LAPSW} + .959 \text{ LAPSC} - .268 \text{ LAHAT} &= - 218.92 - 11 T \\ \text{LAHAC} + 2.654 \text{ LAPSW} - 1.954 \text{ LAPSC} + .839 \text{ LAPSK} - .524 \text{ LAHAT} &= 222.69 - 18 T \\ \text{LAHAR} + .663 \text{ LAPSC} - .5777 \text{ LAPSR} - .134 \text{ LAHAT} &= - 58.495 + 30 T \\ \text{LAHAK} + .332 \text{ LAPSC} - .839 \text{ LAPSK} - .074 \text{ LAHAT} &= - 53.889 - 1 T \\ \text{LAQSW} - 1.791 \text{ LAPSW} - 1.35 \text{ LAHAW} &= - 2,145.77 + 28 T + 1,950[1 + 1(0)]^T \\ \text{LAQSC} - 2.387 \text{ LAPSC} - 1.25 \text{ LAHAC} &= - 3,707.82 + 67 T + 3,531[1 + 1.2(0)]^T \\ \text{LAQSR} - 1.119 \text{ LAPSR} - 1.936 \text{ LAHAR} &= - 1,612.04 + 9 T + 1,402[1 + .7(0)]^T \\ \text{LAQSK} - 3.843 \text{ LAPSK} - .75 \text{ LAHAK} &= 2,705.82 + 30 T + 300[1 + .2(0)]^T \end{aligned}$$

Regional Equilibrium Conditions

$$\begin{aligned} - \text{LAQSW} + \text{LAQDW} + \text{LAQTW} &= 0 \\ - \text{LAQSC} + \text{LAQDCH} + \text{LAQDCF} + \text{LAQTC} &= 0 \\ - \text{LAQSR} + \text{LAQDRH} + \text{LAQTR} &= 0 \\ - \text{LAQSK} + \text{LAQDKF} + \text{LAQTK} &= 0 \end{aligned}$$

Supply-Demand Price Equations

$$\begin{aligned} \text{LAPSW} - .5 \text{ LAPDW} &= 73.135 \\ \text{LAPSC} - .5 \text{ LAPDC} &= 45.005 \\ \text{LAPSR} - .7 \text{ LAPDR} &= 18.6 \\ \text{LAPSK} - \text{LAPDK} &= 0 \end{aligned}$$

Demand-Trade Price Equations

$$\begin{aligned} \text{LAPDW} - \text{LAPTW} &= 1.18 \\ \text{LAPDC} - \text{LAPTC} &= - 2.36 \\ \text{LAPDR} - \text{LAPTR} &= 0 \\ \text{LAPDK} - \text{LAPTK} &= 0 \end{aligned}$$

NORTH AFRICA AND MIDDLE EAST, HIGH INCOME -- NH

Demand Equations

$$\begin{aligned} \text{NHQDW} + 22.64 \text{ NHPDW} - 2.187 \text{ NHPDC} - 1.305 \text{ NHPDR} &= 1,861.56 + 9,306[1 + .25(.05864) + .03225]^T \\ \text{NHQDCH} - 5.318 \text{ NHPDW} + 6.423 \text{ NHPDC} - 1.277 \text{ NHPDR} &= - 273.26 + 2,733[1 + .15(.05864) + .03225]^T \\ \text{NHQDR} - 2.351 \text{ NHPDW} - .651 \text{ NHPDC} + 1.870 \text{ NHPDR} &= 103.14 + 1,334[1 + .3(.05864) + .03225]^T \\ \text{NHQDCF} + 2.933 \text{ NHPDC} - 249.60 + 832 [1 + .3(.05864) + .03225]^T \\ \text{NHQDKF} - .30 \text{ NHQDCF} + .9307 \text{ NFPDK} &= 187.19 \end{aligned}$$

Supply Equations

$$\begin{aligned} \text{NHHAT} - 19.32 \text{ NHPSW} &= 10,032.32 + 100 T \\ \text{NHHAW} - 9.089 \text{ NHPSW} + 3.125 \text{ NHPSC} + 2.499 \text{ NHPSR} - .706 \text{ NHHAT} &= - 361.0 + 16 T \\ \text{NHHAC} + 8.183 \text{ NHPSW} - 3.125 \text{ NHPSC} - .254 \text{ NHHAT} &= 527.01 - 17 T \\ \text{NHHAR} + .906 \text{ NHPSW} - 2.499 \text{ NHPSR} - .040 \text{ NHHAT} &= - 165.98 + 1 T \\ \text{NHQSW} - 3.636 \text{ NHPSW} - .80 \text{ NHHAW} &= 175 T - 6,997.24 + 6,664[1 + 1.2(0)]^T \\ \text{NHQSC} - 1.563 \text{ NHPSC} - .75 \text{ NHHAC} - 50 T - 2,362.5 + 2,250[1 + .6(0)]^T \\ \text{NHQSR} - 1.374 \text{ NHPSR} - 1.937 \text{ NHHAR} - 15 T - 1,053.6 + 916[1 + 1.5(0)]^T \end{aligned}$$

Regional Equilibrium Conditions

$$\begin{aligned} - \text{NHQSW} + \text{NHQDW} + \text{NHQTW} &= 0 \\ - \text{NHQSC} + \text{NHQDCH} + \text{NHQDCF} + \text{NHQTC} &= 0 \\ - \text{NHQSR} + \text{NHQDR} + \text{NHQTR} &= 0 \\ \text{NHQDKF} + \text{NHQTK} &= 0 \end{aligned}$$

Supply-Demand Price Equations

$$\begin{aligned} \text{NHPSW} - \text{NHPDW} &= - 11.13 \\ \text{NHPSC} - \text{NHPDC} &= - 13.10 \\ \text{NHPSR} - .5 \text{ NHPDR} &= - 7 \end{aligned}$$

Demand-Trade Price Equations

$$\begin{aligned} \text{NHPDW} - \text{NHPTW} &= 33.15 \\ \text{NHPDC} - \text{NHPTC} &= 20.82 \\ \text{NHPDR} - \text{NHPTR} &= 0 \\ \text{NHPDK} - \text{NHPTK} &= 0 \end{aligned}$$

NORTH AFRICA AND MIDDLE EAST, LOW INCOME -- NL

Demand Equations

$$\begin{aligned} \text{NLQDWH} + 61.62 \text{ NLPDW} - 31.31 \text{ NLPDC} - 23.72 \text{ NLPDR} &= - 988.07 + 19,771[1 + .05(.03301) + .02349]^T \\ \text{NLQDCH} - 22.02 \text{ NLPDW} + 37.30 \text{ NLPDC} - 7.538 \text{ NLPDR} &= .222 + 9,422[1 + .1(.03301) + .02349]^T \\ \text{NLQDRH} - 3,488 \text{ NLPDW} - 2,363 \text{ NLPDC} + 2.984 \text{ NLPDR} &= -.048 + 1,492[1 + .2(.03301) + .02349]^T \\ \text{NLQDCF} + 10.99 \text{ NLPDC} &= 694.02 + 4,628[1 + .1(.03301) + .02349]^T \end{aligned}$$

Supply Equations

$$\begin{aligned} \text{NLHAT} - 15.34 \text{ NLPSW} &= 22,766.5 + 115 T \\ \text{NLHAW} - 25.26 \text{ NLPSW} + 11.11 \text{ NLPSC} - .549 \text{ NLHAT} &= - 1,257.53 + 81 T \\ \text{NLHAC} + 25.12 \text{ NLPSW} - 11.11 \text{ NLPSC} - .428 \text{ NLHAT} &= 1,237.79 - 86 T \\ \text{NLHAR} + .14 \text{ NLPSW} - 1.282 \text{ NLPTR} - .023 \text{ NLHAT} &= - 148.2 + 5 T \\ \text{NLQSW} - 17.68 \text{ NLPSW} - 1.05 \text{ NLHAW} &= 405 T - 15,194.09 + 13,815[1 + .875(0)]^T \\ \text{NLQSC} - 10.31 \text{ NLPSC} - 1.30 \text{ NLHAC} &= 323 T - 13,991.13 + 13,325[1 + .6(0)]^T \\ \text{NLQSR} - 2.885 \text{ NLPTR} - 3.375 \text{ NLHAR} &= 6 T - 2,267.93 + 1,890[1 + .6(0)]^T \end{aligned}$$

Regional Equilibrium Conditions

$$\begin{aligned} - \text{NLQSW} + \text{NLQDWH} + \text{NLQTW} &= 0 \\ - \text{NLQSC} + \text{NLQDCH} + \text{NLQDCF} + \text{NLQTC} &= 0 \\ - \text{NLQSR} + \text{NLQDRH} + \text{NLQTR} &= 0 \end{aligned}$$

Supply-Demand Price Equations

$$\begin{aligned} \text{NLPSW} - \text{NLPDW} &= 13.96 \\ \text{NLPSC} - \text{NLPDC} &= 1.46 \end{aligned}$$

Demand-Trade Price Equations

$$\begin{aligned} \text{NLPDW} - \text{NLPTW} &= 1.27 \\ \text{NLPDC} - \text{NLPTC} &= 2.60 \\ \text{NLPDR} - \text{NLPTR} &= - 6.00 \end{aligned}$$

EAST AFRICA -- EF

Demand Equations

$$\begin{aligned} \text{EFQDH} + 1.992 \text{ EFPDW} - 1.638 \text{ EFPDC} - .3978 \text{ EFPDR} &= 56.54 + 20 T + 565[1 + .35(.01579) + .03030]^T \\ \text{EFQDCH} - 1.463 \text{ EFPDW} + 6.014 \text{ EFPDC} - .8765 \text{ EFPDR} &= 124.49 + 6,225[1 + .1(.01579) + .03030]^T \\ \text{EFQDRH} - .2762 \text{ EFPDW} - .6812 \text{ EFPDC} + .8272 \text{ EFPDR} &= 0 + 235[1 + .3(.01579) + .03030]^T \\ \text{EFQDCF} + 1.449 \text{ EFPDC} &= - 147.0 + 250[1 + .2(.01579) + .03030]^T \end{aligned}$$

Supply Equations

$$\begin{aligned} \text{EFHAT} - 19.04 \text{ EFPSC} &= 5,034.6 + 36.5 T \\ \text{EFHAW} - .3035 \text{ EFPSW} - .036 \text{ EFHAT} &= - 19.73 + 1 T \\ \text{EFHAC} - 17.58 \text{ EFPSC} - .924 \text{ EFHAT} &= - 823.13 - .3 T \\ \text{EFHAR} - .6702 \text{ EFPSR} - .040 \text{ EFHAT} &= - 46.52 - .7 T \\ \text{EFQSW} - .2795 \text{ EFPSW} - 1.84 \text{ EFHAW} &= - 415.4 + 5.9 T + 396[1 + .9(0)]^T \\ \text{EFQSC} - 13.60 \text{ EFPSC} - 1.16 \text{ EFHAC} &= - 6,979.78 + 100 T + 6,345[1 + .525(0)]^T \\ \text{EFQSR} - .4520 \text{ EFPSR} - .899 \text{ EFHAR} &= - 246.06 + 1.8 T + 214[1 + 1.6(0)]^T \end{aligned}$$

Regional Equilibrium Conditions

$$\begin{aligned} - \text{EFQSW} + \text{EFQDH} + \text{EFQIW} &= 0 \\ - \text{EFQSC} + \text{EFQDCH} + \text{EFQDCF} + \text{EFQTC} &= 0 \\ - \text{EFQSR} + \text{EFQDRH} + \text{EFQTR} &= 0 \end{aligned}$$

Supply-Demand Price Equations

$$\begin{aligned} \text{EFPFW} - \text{EFPDW} &= - 14.24 \\ \text{EFPSC} - \text{EFPDC} &= - 5.09 \\ \text{EFPWR} - \text{EFPDR} &= 0 \end{aligned}$$

Demand-Trade Price Equations

$$\begin{aligned} \text{EFPDW} - \text{EFPTW} &= - 1.84 \\ \text{EFPDC} - \text{EFPTC} &= - 1.80 \\ \text{EFPDR} - .5 \text{ EFPTR} &= - 27.98 \end{aligned}$$

CENTRAL AFRICA --- CF

Demand Equations

$$\begin{aligned} CFC\emptyset G &= 3,829[1 + .15(.0220) + .02759]^T \\ CFQDWH + CFQDCH - CFC\emptyset G &= 0 \\ CFQDCH - CFQSC &= 0 \\ CFQDRH + 5.70 CFPDR + 712.625 + 3,563[1 + .1(.02220) + .02759]^T \end{aligned}$$

Supply Equations

$$\begin{aligned} CFQSW &= 634 + 9 T \\ CFQSC &= 2,925 + 40 T \\ CFQSR - 8.435 CFPSR &= 2,294.42 + 75 T \end{aligned}$$

Regional Equilibrium Conditions

$$\begin{aligned} - CFQSW + CFQDWH + CFQIW &= 0 \\ - CFQSC + CFQDCH + CFQTC &= 0 \\ - CFQSR + CFQDRH + CFQTR &= 0 \end{aligned}$$

Supply-Demand Price Equation

$$CFPSR - .5 CFPDR = 5.5$$

Demand-Trade Price Equation

$$CFPDR - CFPTR = 3.0$$

Export Equation

$$CFQTK - 3.162 CFPTK = 11.44.84 + 30 T$$

INDIA -- ND

Demand Equations

$$\begin{aligned} \text{NDCCW} + 112.57 \text{ NDPDW} - 35.53 \text{ NDPDR} - 34.44 \text{ NDPDC} = 3,374.7 + 22,500[1 + .7(.01364) + .0247]^T \\ \text{NDQDW} = .8 \text{ NDCCW} + .2 \text{ NDQSW} + .5 \text{ NDCCRH} - .5 \text{ NDQSR} \\ \text{NDQDCH} = 30.65 \text{ NDPDW} + 25.79 \text{ NDPDR} - 131.26 \text{ NDPDC} + 3,674.7 + 24,501[1 + .2(.01364) + .0247]^T - 210 \text{ T} \\ \text{NDCCRH} = 53.76 \text{ NDPDW} + 180.98 \text{ NDPDR} - 6.58 \text{ NDPDC} = 12,465.1 + 42,983[1 + .7(.01364) + .0247]^T \\ \text{NDQDRH} = .2 \text{ NDCCRH} + .8 \text{ NDQSR} \\ \text{NDQDCF} = .15 \text{ NDQSC} - 6.196 \text{ NDPDC} = 3,253.1 + 1,012[1 + .4(.01364) + .0247]^T \\ \text{NDQDKF} = - 6.495 \text{ NDPDK} + 547.8 + 2,739[1 + .1(.01364) + .0247]^T \end{aligned}$$

Supply Equations

$$\begin{aligned} \text{NDHAT} = 33.41 \text{ NDPSW} - 40.5 \text{ NDPSR} = 106,164.37 + 195 \text{ T} \\ \text{NDHAW} = 50.09 \text{ NDPSW} + 31.1 \text{ NDPSC} + 40.48 \text{ NDPSR} - .150 \text{ NDHAT} = 327.8 + 538 \text{ T} \\ \text{NDHAC} + 22.48 \text{ NDPSW} - 116.42 \text{ NDPSC} + 52.07 \text{ NDPSR} + 32.02 \text{ NDPSK} - .386 \text{ NDHAT} = 1,688.14 + 150 \text{ T} \\ \text{NDHAR} + 19.54 \text{ NDPSW} + 57.67 \text{ NDPSC} - 107.85 \text{ NDPSR} - .333 \text{ NDHAT} = 3,204.73 + 280 \text{ T} \\ \text{NDHAK} + 8.07 \text{ NDPSW} + 27.65 \text{ NDPSC} + 15.3 \text{ NDPSR} - 32.02 \text{ NDPSK} - .131 \text{ NDHAT} = 1,208.8 + 346 \text{ T} \\ \text{NDQSW} = 16.42 \text{ NDPSW} - 1.23 \text{ NDHAW} = - 22,489.9 + 625 \text{ T} + 20,825[1 + 1.2(0)]^T \\ \text{NDQSC} = 14.98 \text{ NDPSC} - .56 \text{ NDHAC} = - 23,365.06 + 630 \text{ T} + 24,386[1 + .55(0)]^T \\ \text{NDQSR} = 34.94 \text{ NDPSR} - 1.108 \text{ NDHAR} = - 44,668.85 + 600 \text{ T} + 41,755[1 + .95(0)]^T \\ \text{NDPSK} = 6.15 \text{ NDPSK} - .234 \text{ NDHAK} = - 3,981.9 + 19.5 \text{ T} + 3,458[1 + .25(0)]^T \end{aligned}$$

Regional Equilibrium Conditions

$$\begin{aligned} & - \text{NDQSW} + \text{NDQDW} + \text{NDQTW} = 0 \\ & - \text{NDQSC} + \text{NDQDCH} + \text{NDQDCF} + \text{NDQTC} = 0 \\ & - \text{NDQSR} + \text{NDQDRH} + \text{NDQTR} = 0 \\ & - \text{NDPSK} + \text{NDQDKF} + \text{NDQTK} = 0 \end{aligned}$$

Supply-Demand Price Equations

$$\begin{aligned} \text{NDPSW} - \text{NDPDW} &= 21.45 \\ \text{NDPSC} - \text{NDPDC} &= 0 \\ \text{NDPSR} - \text{NDPDR} &= - 11.35 \\ \text{NDPSK} - \text{NDPDK} &= 0 \end{aligned}$$

Demand-Trade Price Equations

$$\begin{aligned} \text{NDPDW} - .7 \text{ NDPTW} &= 28.171 \\ \text{NDPDC} - .4 \text{ NDPTC} &= 37.522 \\ \text{NDPDR} - .4 \text{ NDPTR} &= 30.82 \\ \text{NDPDK} - \text{NDPTK} &= 0 \end{aligned}$$

OTHER SOUTH ASIA -- OS

Demand Equations

$$\begin{aligned}\phi_{SCDW} + 32.65 \phi_{SPDW} - 17.06 \phi_{SPDR} - .9454 \phi_{SPDC} = & + 1,222.52 + 8,735[1 + .7(.00409) + .03023]^T \\ \phi_{SQDW} - .8 \phi_{SCDW} - .2 \phi_{SQSW} - .5 \phi_{SCDR} + .5 \phi_{SQSR} = & 0 \\ \phi_{SQDC} - 1.297 \phi_{SPDW} - 1.445 \phi_{SPDR} + 2.002 \phi_{SPDC} = & - 138.77 + 925[1 + .2(.00409) + .03023]^T \\ \phi_{SCDR} - 30.323 \phi_{SPDW} + 38.023 \phi_{SPDR} - 5.268 \phi_{SPDC} = & 1,135.67 + 16,223[1 + .7(.00409) + .03023]^T \\ \phi_{SQDR} - .2 \phi_{SCDR} - .8 \phi_{SQSR} = & 0\end{aligned}$$

Supply Equations

$$\begin{aligned}\phi_{SHAT} - 4.880 \phi_{SPSR} - 11.24 \phi_{SPSW} = & 19,969.92 + 226 T \\ \phi_{SHAW} - 6.538 \phi_{SPSW} + 1.288 \phi_{SPSC} + 3,843 \phi_{SPSR} - .291 \phi_{SHAT} = & - 170.97 - 3 T \\ \phi_{SHAC} + 4.414 \phi_{SPSW} - 1.288 \phi_{SPSC} - .079 \phi_{SHAT} = & 306.26 - 4 T \\ \phi_{SHAR} + 2.124 \phi_{SPSW} - 3.843 \phi_{SPSR} - .630 \phi_{SHAT} = & - 135.29 + 7 T \\ \phi_{SQSW} - 3.661 \phi_{SPSW} - 1.12 \phi_{SHAW} = & 260 T - 7,344.1 + 6,994[1 + .9(0)]^T \\ \phi_{SQSC} - .1948 \phi_{SPSC} - .53 \phi_{SHAC} = & 30 T - 919.0 + 900[1 + .9(0)]^T \\ \phi_{SQSR} - 5.40 \phi_{SPSR} - 1.170 \phi_{SHAR} = & 316 T - 16,309.72 + 15,834[1 + .75(0)]^T\end{aligned}$$

Regional Equilibrium Equations

$$\begin{aligned}- \phi_{SQSW} + \phi_{SQDW} + \phi_{SQTW} = & 0 \\ - \phi_{SQSC} + \phi_{SQDC} + \phi_{SQTC} = & 0 \\ - \phi_{SQSR} + \phi_{SQDR} + \phi_{SQTR} = & 0\end{aligned}$$

Supply-Demand Price Equations

$$\begin{aligned}\phi_{SPSW} - \phi_{SPDW} = & - 11.48 \\ \phi_{SPSC} - \phi_{SPDC} = & 0 \\ \phi_{SPSR} - \phi_{SPDR} = & - 40.00\end{aligned}$$

Demand-Trade Price Equations

$$\begin{aligned}\phi_{SPDW} - .7 \phi_{SPTW} = & 55.221 \\ \phi_{SPDC} - .7 \phi_{SPTC} = & 43.726 \\ \phi_{SPDR} - .4 \phi_{S PTR} = & 80.00\end{aligned}$$

THAILAND -- TH

Demand Equations

$$THQDWH + .0464 THPDW - .1614 THPDR = - 10.35 + 69[1 + .2(.04392) + .03298]^T$$

$$THQDC + .3735 THPDC - .4912 THPDR = - 111.0 + 300[1 + .2(.04392) + .03298]^T$$

$$THQDR - 1.302 THPDC + 4.281 THPDR = 292.81 + 7,321[1 + .1(.04392) + .03298]^T$$

Supply Equations

$$THHAT - 19.05 THPSR - 19.33 THPTC = 4,952.4 + 100 T$$

$$THHAC - 1.368 THPSC - .1004 THHAT = - 76.47 + 13 T$$

$$THHAR - 4.284 THPSR - .8996 THHAT = - 342.77 - 13 T$$

$$THQSC - 3.486 THPSC - 2.549 THHAC = - 2,145.0 + 42 T + 1,950[1 + .35(0)]^T$$

$$THQSR - 11.12 THPSR - 1.2975 THHAR = - 9,782.66 + 120 T + 8,893[1 + .45(0)]^T$$

Regional Equilibrium Conditions

$$THQDWH + THQTW = 0$$

$$-THQSC + THQDC + THQTC = 0$$

$$-THQSR + THQDR + THQTR = 0$$

Supply-Demand Price Equations

$$THPSR - THPDR = - 5.50$$

$$THPSC - THPDC = - .29$$

Demand-Trade Price Equations

$$THPDW - THPTW = 0$$

$$THPDC - THPTC = - 2.88$$

$$THPDR - .8 THPTR = - 36.9$$

OTHER SOUTHEAST ASIA -- OE

Demand Equations

$$\begin{aligned}\phi_{EQDWH} + .4138 \phi_{EPTW} - .4322 \phi_{EPDR} &= -14.55 + 291[1 + .2(.01182) + .02364]^T \\ \phi_{EQDCH} &= 85[1 + .15(.01182) + .02364]^T \\ \phi_{EQDRH} - 1.617 \phi_{EPTW} + 5.629 \phi_{EPDR} &= 454.81 + 11,371[1 + .1(.01182) + .02364]^T \\ \phi_{EQDCF} - 1.523 \phi_{TPTC} &= 390.02 + 45 T + 300[1 + .2(.01182) + .02364]^T\end{aligned}$$

Supply Equations

$$\begin{aligned}\phi_{EHAR} - 22.24 \phi_{EPSR} &= 9,008.2 + 45 T \\ \phi_{EQSC} - 1.015 \phi_{TPTC} &= -60 + 55 T + 300[1 + .45(0)]^T \\ \phi_{EQSR} - 25.87 \phi_{EPSR} - 1.163 \phi_{EHAR} &= -12,804.62 + 250 T + 11,640[1 + .4(0)]^T\end{aligned}$$

Regional Equilibrium Conditions

$$\begin{aligned}\phi_{EQDWH} + \phi_{EQTW} &= 0 \\ - \phi_{EQSC} + \phi_{EQDCH} + \phi_{EQDCF} + \phi_{EQTC} &= 0 \\ - \phi_{EQSR} + \phi_{EQDRH} + \phi_{EQTR} &= 0\end{aligned}$$

Supply-Demand Price Equations

$$\phi_{EPSR} - .5 \phi_{EPDR} = -5.50$$

Demand-Trade Price Equations

$$\phi_{EPDR} - \phi_{EPTR} = -3.00$$

INDONESIA -- DO

Demand Equations

$$DOCOWH + 3.546 DOPDW - 3.298 DOPDR - 3.498 DOPDC = - 424.73 + 531[1 + .55(.025) + .02641]^T + 5 T$$

$$DOQDWH - DOCOWH - .4 DOCORH + .4 DOQSR = 0$$

$$DOQDCH - .7996 DOPDW - 4.463 DOPDR + 11.833 DOPDC = - 71.9 + 2,395[1 + .3(.025) + .02641]^T + 50 T$$

$$DOCORH - 5.611 DOPDW + 19.573 DOPDR - 6.228 DOPDC = 2,268.8 + 12,605[1 + .45(.025) + .02641]^T$$

$$DOQDRH - .6 DOCORH - .4 DOQSR = 0$$

$$DOQDK + .6757 DOPDK = 37.6 + 188[1 + .3(.025) + .02641]^T$$

Supply Equations

$$DOHAT - 14.95 DOPSR = 9,626.1 + 70 T$$

$$DOHAC - 5.043 DOPSC + 5.157 DOPSK - .239 DOHAT = - 106.2 - 20 T$$

$$DOHAR - 10.13 DOPSR + 3.187 DOPSC - .678 DOHAT = - 1,386.6 + 22 T$$

$$DOHAK + 1,856 DOPSC - 5.157 DOPSK - .083 DOHAT = - 193.2 - 2 T$$

$$DOQSC - 1.778 DOPSC - .95 DOHAC = - 2,863.0 + 160 T + 2,730[1 + .8(0)]^T$$

$$DOQSR - 7.377 DOPSR - 1.456 DOHAR = - 13,065.7 + 140 T + 11,877[1 + .575(0)]^T$$

$$DOQSK - .1804 DOPSK - .24 DOHAK = - 238.04 + 9.4 T + 502[1 + .25(0)]^T$$

Regional Equilibrium Conditions

$$DOQDWH + DOQTW = 0$$

$$- DOQSC + DOQDCH + DOQTC = 0$$

$$- DOQSR + DOQDRH + DOQTR = 0$$

$$- DOQSK + DOQDK + DOQTK = 0$$

Supply-Demand Price Equations

$$DOPSC - .7 DOPDC = 34.286$$

$$DOPSR - DOPDR = 0$$

$$DOPSK - DOPDK = 0$$

Demand-Trade Price Equations

$$DOPDW - DOPTW = 0$$

$$DOPDC - DOPTC = 1.60$$

$$DOPDR - DOPTR = - 4.55$$

$$DOPDK - DOPTK = 0$$

OTHER EAST ASIA, HIGH INCOME -- EH

Demand Equations

$$\begin{aligned} \text{EHCOWH} + 10.640 \text{ EHPDW} - 1.8 \text{ EHPDC} - 2.953 \text{ EHPDR} &= 190.25 + 3,175[1 + .1(.05607) + .01948]^T \\ \text{EHQDWH} - \text{EHCOWH} - .4 \text{ EHCORH} + .4 \text{ EHQS} &= 0 \\ \text{ENQDCH} - 1.978 \text{ EHPDW} + 7.524 \text{ EHPDC} - 1.647 \text{ EHPDR} &= -.148 + 1,770[1 + .05(.05607) + .01948]^T \\ \text{EHCORH} - 13.070 \text{ EHPDW} - 5.5260 \text{ EHPDC} + 10.880 \text{ EHPDR} &= 779.60 + 7,799[1 + .05(.05607 + .01948)]^T \\ \text{EHQDRH} - .6 \text{ EHCORH} - .4 \text{ EHQS} &= 0 \\ \text{ENQDCF} + 13.39 \text{ EHPDC} &= 944.93 + 1,890[1 + .4(.05607) + .01948]^T \\ \text{EHQDKF} + 2.181 \text{ EHPDK} &= 236.66 + 789[1 + .3(.05607) + .01948]^T \end{aligned}$$

Supply Equations

$$\begin{aligned} \text{EHHAT} - 4.022 \text{ EHPSR} &= 2,933.59 + 4 T \\ \text{EHHAW} - .1999 \text{ EHPSW} + .1700 \text{ ERPSR} - .042 \text{ EHHAT} &= - 6.77 + 2.9 T \\ \text{EHHAR} + .1999 \text{ EHPSW} - 2.1745 \text{ EHPSR} + 1.073 \text{ EHPSC} + .1503 \text{ EHPSK} - .564 \text{ EHHAT} &= - 134.9 - 4.6 T \\ \text{EHHAC} + 1.350 \text{ EHPSR} - 1.534 \text{ EHPSC} + .9077 \text{ EHPSK} - .269 \text{ EHHAT} &= 47.67 \\ \text{EHHAK} + .6545 \text{ EHPSR} + .461 \text{ EHPSC} - 1.058 \text{ EHPSK} - .125 \text{ EHHAT} &= 94.0 + 1.7 T \\ \text{EHQSW} - .352 \text{ EHPSW} - 2.20 \text{ EHHAW} &= - 409.24 + 2.8 T + 341[1 + 1.0(0)]^T \\ \text{EHQSC} - 2.127 \text{ EHpac} - 2.08 \text{ EHHAC} &= - 2,458.63 + 15.3 T + 2,049[1 + .75(0)]^T \\ \text{EHQS} - 5.215 \text{ EHPSR} - 3.07 \text{ EHHAR} &= - 7,299.71 + 11.3 T + 6,340[1 + .6(0)]^T \\ \text{EHQSK} - .0273 \text{ EHPSK} - .31 \text{ EHHAK} &= - 145.25 + 1.4 T + 148[1 + .4(0)]^T \end{aligned}$$

Regional Equilibrium Conditions

$$\begin{aligned} - \text{EHQSW} + \text{EHQDWH} + \text{EHQTW} &= 0 \\ - \text{EHQSC} + \text{EHQBCH} + \text{EHQDCF} + \text{EHQTC} &= 0 \\ - \text{EHQS} + \text{EHQDRH} + \text{EHQTR} &= 0 \\ - \text{EHQSK} + \text{EHQDK} + \text{EHQTK} &= 0 \end{aligned}$$

Supply-Demand Price Equations

$$\begin{aligned} \text{EHPSW} - .5 \text{ EHPDW} &= 149.125 \\ \text{EHPSC} - .5 \text{ EHPDC} &= 157.395 \\ \text{EHPSR} - .5 \text{ EHPDR} &= 74.85 \\ \text{EHPSK} - \text{EHPDK} &= 0 \end{aligned}$$

Demand-Trade Price Equations

$$\begin{aligned} \text{EHPDW} - \text{EHPTW} &= 21.87 \\ \text{EHPDC} - \text{EHPTC} &= 2.37 \\ \text{EHPDR} - .5 \text{ EHPTR} &= 138.0 \\ \text{EHPDK} - \text{EHPTK} &= 0 \end{aligned}$$

OTHER EAST ASIA, LOW INCOME -- EL

Demand Equations

$$\begin{aligned} \text{ELQDWH} + 5.111 \text{ELPTW} - 1.172 \text{ELPTR} - 3.025 \text{ELPDC} &= .02 + 930[1 + .35(.00271) + .03297]^T \\ \text{ELQDCH} - 1.696 \text{ELPTW} - 2.723 \text{ELPTR} + 8.783 \text{ELPDC} &= 107.94 + 2,160[1 + .2(.00271) + .03297]^T \\ \text{ELQDRH} - 3.975 \text{ELPTW} + 9.360 \text{ELPTR} - 4.118 \text{ELPDC} &= 607.54 + 5,063[1 + .2(.00271) + .03297]^T \\ \text{ELQDCF} + 1.220 \text{ELPDC} &= - 175 + 250[1 + .2(.00271) + .03297]^T \end{aligned}$$

Supply Equations

$$\begin{aligned} \text{ELHAT} - 14.41 \text{ELPSR} &= 5,306.35 + 77 T \\ \text{ELHAC} - 3.696 \text{ELPSC} + 3.677 \text{ELPSR} - .383 \text{ELHAT} &= - 1.08 + 28 T \\ \text{ELHAR} + 3.696 \text{ELPSC} - 3.677 \text{ELPSR} - .617 \text{ELHAT} &= 1.08 - 28 T \\ \text{ELQSC} - 1.570 \text{ELPSC} - .85 \text{ELHAC} &= 70 - 2,133.03 + 2,031[1 + 1.125(0)]^T \\ \text{ELQSR} - 5.525 \text{ELPSR} - 1.165 \text{ELHAR} &= 136 T - 4,847.87 + 4,489[1 + 1.4(0)]^T \\ \text{ELQSK} - .4539 \text{ELPTK} &= 175 + 20 T \end{aligned}$$

Regional Equilibrium Conditions

$$\begin{aligned} \text{ELQDWH} + \text{ELQTW} &= 0 \\ - \text{ELQSC} + \text{ELQDCH} + \text{ELQBCF} + \text{ELQTC} &= 0 \\ - \text{ELQSR} + \text{ELQDRH} + \text{ELQTR} &= 0 \\ - \text{ELQSK} + \text{ELQTK} &= 0 \end{aligned}$$

Supply-Demand Price Equations

$$\begin{aligned} \text{ELPSC} - \text{ELPDC} &= 3.19 \\ \text{ELPSR} - \text{ELPTR} &= - 54.00 \end{aligned}$$

Demand-Trade Price Equations

$$\text{ELPDC} - \text{ELPTC} = - .98$$

REST OF WORLD -- RW

$$RWQTB = 254 [1 + .3(.025) + .027]^T$$

$$RWQTP = 147 [1 + .3(.025) + .027]^T$$

$$RWQTV = 117 [1 + .015]^T$$

$$RWQTLB + .1464 AZPTLB = 107.65$$

PRICE EQUATIONS LINKING REGIONS

Beef

$$CNPTB - .65 USPTB = -157.85$$

$$MCPTB - .65 USPTB = -92.85$$

$$BZPTB - .65 USPTB = -210.85$$

$$USPTB - AZPTB = 250.00$$

$$JPPTB - .8 AZPTB = 96.80$$

$$ARPTB - AZPTB = 61.00$$

$$C6PTB - .65 ARPTB = 80.00$$

Pork

$$USPTP - 1.6 C6PTP = 626.40$$

$$CNPTP - .6 USPTP = 246.40$$

$$MCPTP - .6 C6PTP = 17.60$$

$$JPPTP - 1.25 C6PTP = 453.50$$

Mutton

$$C6PTV - AZPTV = 287.70$$

$$JPPTV - AZPTV = 15.70$$

$$ARPTV - C6PTV = -245.47$$

Butter

$$CNPTLB - AZPTLB = 29.00$$

$$WEPTLB - AZPTLB = 587.00$$

$$JPPTLB - AZPTLB = -10.00$$

Cheese

$$USPTLC - CNPTLC = 161.00$$

$$WEPTLC - CNPTLC = 324.00$$

$$CNPTLC - AZPTLC = 617.00$$

$$JPPTLC - AZPTLC = -5.00$$

Wheat

$$C6PTW - USPTW = 6.47$$

$$JPPTW - USPTW = 7.04$$

$$SFPTW - USPTW = 3.10$$

$$DOPTW - USPTW = 31.13$$

$$ELPTW - USPTW = 4.95$$

$$OEPTW - USPTW = 11.60$$

$$NDPTW - USPTW = 15.24$$

$$OSPTW - USPTW = 15.24$$

$$NHPTW - USPTW = 10.90$$

$$NLPTW - USPTW = 4.17$$

$$EFPTW - USPTW = 28.20$$

$$MCPTW - USPTW = 9.29$$

$$LAPTW - USPTW = 11.60$$

$$CNPTW - C6PTW = -1.87$$

$$ARPTW - C6PTW = -6.53$$

$$AZPTW - JPPTW = -10.61$$

$$ERPTW - AZPTW = 12.46$$

$$THPTW - AZPTW = 19.18$$

$$BZPTW - ARPTW = 14.09$$

Coarse grains

$$C6PTC - USPTC = 4.73$$

$$JPPTC - USPTC = 12.08$$

$$DOPTC - USPTC = 2.04$$

$$EHPTC - USPTC = 11.12$$

$$ELPTC - USPTC = 5.38$$

Continued

PRICE EQUATIONS LINKING REGIONS--Continued

Coarse grains--Continued

NDPTC - USPTC = 12.44
 OSPTC - USPTC = 12.44
 NHPTC - USPTC = 7.20
 NLPTC - USPTC = 3.47
 MCPTC - USPTC = 19.51
 VNPTC - USPTC = 9.83
 LAPTC - USPTC = 3.21
 CNPTC - C6PTC = -8.82
 SFPTC - C6PTC = -3.61
 EFPTC - C6PTC = -8.26
 ARPTC - C6PTC = -.31
 AZPTC - JPPTC = -28.80
 THPTC - JPPTC = -10.05
 BZPTC - LAPTC = -1.35

Rice

CNPTR - USPTR = 56.07
 SFPTR - USPTR = 6.07
 AZPTR - USPTR = -11.94
 NHPTR - USPTR = 37.07
 CFPTR - USPTR = -54.93
 MCPTR - USPTR = 51.07
 EHPTR - THPTR = 1.00
 ELPTR - THPTR = -34.00
 NDPTR - THPTR = 7.45
 OSPTR - THPTR = -33.00
 EFPTR - THPTR = 45.00
 VNPTR - LAPTR = -120.00

Rice--Continued

LAPTR - USPTR = 65.07
 USPTR - C6PTR = 22.43
 OEPTR - C6PTR = -50.50
 NLPTR - C6PTR = -23.50
 BZPTR - C6PTR = -43.50
 ARPTR - C6PTP = -55.57
 C6PTR - THPTR = 1.50
 WEPTR - THPTR = 9.00
 DOPTR - THPTR = 12.55

Oilseeds

CNPTK - USPTK = 20.33
 C6PTK - USPTK = 3.67
 JPPTK - USPTK = 47.09
 AZPTK - USPTK = 13.70
 EHPTK - USPTK = 10.21
 NHPTK - USPTK = 10.00
 MCPTK - USPTK = 45.81
 LAPT K - USPTK = -2.69
 SFPTK - C6PTK = -11.97
 ELPTK - C6PTK = -46.32
 NDPTK - C6PTK = -17.63
 CFPTK - C6PTK = -11.47
 BZPTK - C6PTK = -18.27
 ARPTK - C6PTK = -37.17
 DOPTK - JPPTK = -89.74

WORLD EQUILIBRIUM CONDITIONS

Beef

$$\sum_{i=1}^{10} QSB - \sum_{i=1}^9 QDB - \sum_{i=1}^1 QDBT - \sum_{i=1}^1 QDBP + \sum_{i=1}^{13} QTB = 0$$

Pork

$$\sum_{i=1}^8 QSP - \sum_{i=1}^6 QDP + \sum_{i=1}^{11} QTP = 0$$

Poultry

$$\sum_{i=1}^2 QSZ - \sum_{i=1}^2 QDZ + \sum_{i=1}^2 QTZ = -44$$

Mutton

$$\sum_{i=1}^5 QSV - \sum_{i=1}^7 QDV + \sum_{i=1}^7 QTV = 0$$

Butter

$$\sum_{i=1}^6 QSLB - \sum_{i=1}^6 QBLB + \sum_{i=1}^7 QTLB = 0$$

Cheese

$$\sum_{i=1}^7 QSLC - \sum_{i=1}^7 QDLC + \sum_{i=1}^7 QTLB = -19$$

Wheat

$$\sum_{i=1}^{19} QSW - \sum_{i=1}^6 QDW - \sum_{i=1}^{18} QDWH - \sum_{i=1}^7 QDWF + \sum_{i=1}^{27} QTW = 0$$

Coarse Grains

$$\sum_{i=1}^{24} QSC - \sum_{i=1}^2 QDC - \sum_{i=1}^{22} QDCH - \sum_{i=1}^{20} QDCF + \sum_{i=1}^{27} QTC = 0$$

Rice

$$\sum_{i=1}^{21} QSR - \sum_{i=1}^3 QDR - \sum_{i=1}^{21} ODRH + \sum_{i=1}^{26} OTR = -106$$

Oilmeal

$$\sum_{i=1}^{16} QSK - \sum_{i=1}^3 QDK - \sum_{i=1}^1 QDKH - \sum_{i=1}^{12} QDKF + \sum_{i=1}^{21} QTK = -1,184$$

Notes

General: The summation count is across regions, and the region count is indicated.

Beef: Includes Rest of world as a separate region to balance world trade.

Pork: Includes Rest of world as a separate region to balance world trade.

Poultry: Trade specified only between C3 and C6.

Mutton: Includes Rest of world as a separate region to balance world trade.

Butter: Includes Rest of world as a separate region to balance world trade.

Wheat: Feed use related directly to livestock production in only 7 regions.

Coarse grains: Feed use related directly to livestock production in only 10 regions.

Oilmeal: Feed use related directly to livestock production in only 9 regions.

Table 5 --Demand elasticities for meat

| Item | Elasticity with respect to price of | | | | | Income elasticity |
|---------------------------|-------------------------------------|-------|------|---------|--------|----------------------|
| | Beef | | Pork | Poultry | Mutton | |
| | Finished | Other | | | | |
| United States: | | | | | | |
| Beef, finished | -.7 | .2 | .1 | | | .4 |
| Beef, other | .4 | -.8 | .1 | .1 | | .3 |
| Pork | .4 | | -.8 | .1 | | .1 |
| Poultry | .3 | | .2 | -1.0 | | .8 |
| Mutton | | | | | | |
| Canada: | | | | | | |
| Beef | | -.6 | .3 | .15 | | .7 |
| Pork | | .4 | -.7 | .15 | | .15 |
| Poultry | | .3 | .2 | -.8 | | .9 |
| Mutton | | | | | | |
| EC-6: | | | | | | |
| Beef | | -.7 | .3 | .1 | | .6 |
| Pork | | .5 | -.8 | .12 | | .5 |
| Poultry | | .38 | .5 | -1.07 | | 1.0 |
| Mutton | | .15 | .15 | | -.25 | 0 |
| EG-3: | | | | | | |
| Beef | | -.6 | .2 | .08 | -.2 | .7 |
| Pork | | .18 | -.8 | .2 | .17 | .45 |
| Poultry | | .3 | .3 | -.6 | | 1.0 |
| Mutton | | .1 | .1 | .1 | -.1 | 0 |
| Other Western Europe: | | | | | | |
| Beef | | -.6 | .2 | .1 | | .7 |
| Pork | | .2 | -.7 | .2 | | .6 |
| Poultry | | .1 | .2 | -.8 | | .9 |
| Mutton | | .15 | .15 | | -.25 | 0 |
| Japan: | | | | | | |
| Beef | | -1.2 | .26 | .35 | | 1.2 |
| Pork | | .20 | -.90 | .11 | | .9 |
| Poultry | | .50 | .17 | -1.10 | | .6 |
| Mutton | | -.4 | .2 | .3 | -.4 | .5 |
| Oceania: | | | | | | |
| Beef | | -.5 | | | .2 | 0 |
| Pork | | .2 | -.4 | | | .1 |
| Poultry | | | | | | |
| Mutton | | .4 | | | -.8 | 0 |
| Mexico & Central America: | | | | | | |
| Beef | | -.4 | .1 | | | .7 |
| Pork | | .1 | -.3 | | | .6 |
| Poultry | | | | | | |
| Mutton | | | | | | |
| Argentina: | | | | | | |
| Beef | | -.4 | | | | .3 |
| Pork | | .2 | -.4 | | | 0 |
| Poultry | | | | | | |
| Mutton | | .2 | | | -.4 | 0 |
| Brazil: | | | | | | |
| Beef | | -.6 | .3 | | | .4 |
| Pork | | .2 | -.6 | | | .4 |
| Poultry | | | | | | |
| Mutton | | | | | | |

Table 6 --Demand elasticities for dairy products

| Item | Elasticity with respect to price of | | | Income elasticity |
|-----------------------|-------------------------------------|--------|--------|----------------------|
| | Milk | Butter | Cheese | |
| United States: | | | | |
| Milk, fluid | -.2 | | | -.1 |
| Butter | | -.7 | | |
| Cheese | | | -.5 | .5 |
| Canada: | | | | |
| Milk, fluid | -.2 | | | -.1 |
| Butter | | -.7 | | -.3 |
| Cheese | | | -.5 | .6 |
| EC-6: | | | | |
| Milk, fluid | -.25 | | | .2 |
| Butter | | -.7 | | .2 |
| Cheese | | | -.6 | .5 |
| EC-3: | | | | |
| Milk, fluid | -.15 | | | .2 |
| Butter | | -.5 | | .2 |
| Cheese | | | -.6 | .3 |
| Other Western Europe: | | | | |
| Milk, fluid | -.2 | | | .3 |
| Butter | | -.5 | | .3 |
| Cheese | | | -.6 | .6 |
| Japan: | | | | |
| Milk, fluid | -.7 | | | .95 |
| Butter | | -.7 | | 1.0 |
| Cheese | | | -1.69 | 1.25 |
| Oceania: | | | | |
| Milk, fluid | -.2 | | | .1 |
| Butter | | -.4 | | -.1 |
| Cheese | | | -.3 | .5 |

Table 7 --Supply elasticities for meat

| Item | Elasticity with respect to price of | | | | | | |
|--------------------------|-------------------------------------|------|---------|--------|------|------|---------|
| | Beef | Pork | Poultry | Mutton | Milk | Corn | Oilcake |
| United States: | | | | | | | |
| Beef | .3 | | | | | -.2 | -.05 |
| Pork | | .5 | | | | -.4 | -.1 |
| Poultry | | | .9 | | | -.6 | -.2 |
| Mutton | | | | | | | |
| Canada: | | | | | | | |
| Beef | .4 | -.1 | | | | -.2 | -.05 |
| Pork | -.2 | .6 | -.2 | | | -.4 | -.1 |
| Poultry | -.1 | -.2 | -.7 | | | -.4 | -.2 |
| Mutton | | | | | | | |
| EC-6: | | | | | | | |
| Beef | .4 | -.15 | | | .15 | -.2 | -.1 |
| Pork | -.3 | .7 | -.3 | | | -.4 | -.2 |
| Poultry | -.2 | -.2 | .7 | | | -.4 | -.3 |
| Mutton | -.15 | | | .3 | .15 | -.15 | |
| EC-3: | | | | | | | |
| Beef | .4 | -.15 | | | .15 | -.2 | -.1 |
| Pork | -.15 | .7 | -.15 | | | -.4 | -.2 |
| Poultry | -.2 | -.2 | .7 | | | -.4 | -.3 |
| Mutton | -.15 | | | .3 | .15 | -.15 | |
| Other Western Europe: | | | | | | | |
| Beef | .4 | -.15 | | | .15 | -.2 | -.1 |
| Pork | -.2 | .5 | -.2 | | | -.3 | -.15 |
| Poultry | -.2 | -.2 | .6 | | | -.3 | -.25 |
| Mutton | -.15 | | | .3 | .15 | -.15 | |
| Japan: | | | | | | | |
| Beef | .5 | -.1 | -.1 | | .2 | -.3 | |
| Pork | | .7 | -.2 | | | -.4 | |
| Poultry | | -.2 | .7 | | | -.4 | -.3 |
| Mutton | | | | | | | |
| Oceania: | | | | | | | |
| Beef | .4 | | | | -.1 | | |
| Pork | -.1 | .3 | | | | -.2 | |
| Poultry | | | | | | | |
| Mutton | | | | | .2 | | |
| Mexico & Central America | | | | | | | |
| Beef | .4 | -.1 | | | | | |
| Pork | -.1 | .3 | | | | | |
| Poultry | | | | | | | |
| Mutton | | | | | | | |
| Argentina: | | | | | | | |
| Beef | .5 | | | | | | |
| Pork | -.1 | .3 | | | | | |
| Poultry | | | | | | | |
| Mutton | | | | | | | |
| Brazil: | | | | | | | |
| Beef | .5 | | | | | | |
| Pork | -.1 | .4 | | | | | |
| Poultry | | | | | | | |
| Mutton | | | | | | | |

Table 8--Supply elasticities for dairy products

| Item | Elasticity with respect to price | | | | | Elasticity of joint output with beef |
|-----------------------|----------------------------------|--------|--------|------|---------|--|
| | Milk | Butter | Cheese | Corn | Oilcake | |
| United States: | : | | | | | |
| Milk, total | : | .4 | | | | -.3 |
| Cheese | : | | -.6 | .6 | | -.2 |
| Canada: | : | | | | | |
| Milk, total | : | .30 | | | | -.40 |
| Cheese | : | | -.6 | .6 | | -.20 |
| EC-6: | : | | | | | |
| Milk, total | : | .35 | | | | -.5 |
| Cheese | : | | | .4 | | -.3 |
| EC-3: | : | | | | | .5 |
| Milk, total | : | .35 | | | | -.2 |
| Cheese | : | | | .4 | | -.1 |
| Other Western Europe: | : | | | | | |
| Milk, total | : | .3 | | | | -.35 |
| Cheese | : | | | .5 | | -.1 |
| Japan: | : | | | | | |
| Milk, total | : | .8 | | | | -.25 |
| Cheese | : | | | | | -.3 |
| Oceania: | : | | | | | |
| Milk, total | : | .4 | | | | -.2 |
| Cheese | : | | -1.0 | 1.0 | | |

Table 9--Factors affecting use of grain as livestock feed

| Explanatory factors 1/ | United States | Canada | EC-6 | EC-3 | Other Western Europe | Japan |
|--|---------------|--------|--------|------|----------------------|-------|
| <u>Kg. grain use per kg. product</u> | | | | | | |
| <u>Input-output rates:</u> | | | | | | |
| Beef, finished 2/ | 5.74 | | | | | |
| Beef, other 2/ | 2.02 | 4.60 | 1.30 | 2.27 | 2.46 | 2.33 |
| Pork | 6.43 | 6.50 | 3.60 | 4.22 | 4.60 | 5.09 |
| Poultry | 2.76 | 2.90 | 2.70 | 2.70 | 2.80 | 2.40 |
| Lamb and Mutton | (1.86) | | .25 | .25 | | |
| Milk | .33 | .33 | .125 | .21 | .28 | .20 |
| Eggs | 2.91 | 3.10 | 3.10 | 3.10 | | 2.40 |
| <u>Percentage change in grain use per unit percent price change</u> | | | | | | |
| <u>Price elasticities:</u> | | | | | | |
| Beef, finished 2/ | .22 | | | | | |
| Beef, other 2/ | .03 | .25 | | | | |
| Pork | .25 | .25 | .50 | .50 | .40 | .50 |
| Corn | -.40 | -.40 | -.50 | -.50 | -.50 | -.60 |
| Oilseed cake | .10 | .10 | .10 | .10 | .10 | .10 |
| <u>Kg. grain use per kg. product</u> | | | | | | |
| <u>Input-output rates:</u> | | | | | | |
| Beef 2/ | .30 | | 2.80 | 3.00 | | .30 |
| Pork | 3.40 | | 4.60 | 5.00 | 2.0 | 3.00 |
| Poultry | 3.00 | | 3.00 | 3.50 | 1.0 | |
| Milk | .12 | | .30 | .30 | | |
| Eggs | 3.00 | | (3.10) | 3.50 | | |
| <u>Percentage change in grain use per unit percent price change</u> | | | | | | |
| <u>Price elasticities:</u> | | | | | | |
| Beef 2/ | | | | | | .20 |
| Pork | .30 | | .25 | | | -.20 |
| Corn | -.30 | -.30 | -.25 | | | |
| <u>Percentage change in grain use per unit percent income change</u> | | | | | | |
| <u>Income elasticity:</u> | | | | | | |
| Income per capita | | .25 | | | | .10 |

Continued

Table 9--Factors affecting use of grain as livestock feed--Continued

| Explanatory Factors 1/ | Argentina | Brazil | Venezuela | Other South America | N. Africa-High | N. Africa-Middle East |
|--|-----------|--------|-----------|---------------------|----------------|-----------------------|
| <u>Kg. grain use per kg. product</u> | | | | | | |
| <u>Input-Output Rates:</u> | | | | | | |
| Beef 2/ | .50 | 1.50 | | | | |
| Pork | 3.60 | 3.60 | | | | |
| <u>Percentage change in grain use per unit percent price change</u> | | | | | | |
| <u>Price elasticities:</u> | | | | | | |
| Pork | .30 | .30 | | | | |
| Corn | -.30 | -.40 | -.30 | -.40 | -.30 | -.15 |
| Oilseed cake | | | .10 | | | |
| <u>Percentage change in grain use per unit percent income change</u> | | | | | | |
| <u>Income elasticity:</u> | | | | | | |
| Income per capita | .20 | .20 | .20 | .20 | .30 | .10 |
| <u>Percentage change in grain use per unit percent price change</u> | | | | | | |
| <u>Price elasticities:</u> | | | | | | |
| Corn | -.30 | | -.40 | -.20 | -.1 | -.3 |
| <u>Percentage change in grain use per unit percent income change</u> | | | | | | |
| <u>Income elasticity:</u> | | | | | | |
| Income per capita | .20 | .15 | .40 | .20 | .1 | .2 |
| <u>Grain use as a proportion of commodity supply</u> | | | | | | |
| <u>Market shares:</u> | | | | | | |
| Commodity supply feed grain | | | | .15 | | |
| <u>Percentage change in grain use per unit percent price change</u> | | | | | | |
| <u>Price elasticities:</u> | | | | | | |
| Corn | -.30 | | -.50 | | -.30 | |
| <u>Percentage change in grain use per unit percent income change</u> | | | | | | |
| <u>Income elasticity:</u> | | | | | | |
| Income per capita | .30 | | .40 | | .20 | |

Note: Absence of terms indicates omission from the GOL model.

1/ Factor categories include (1) input-output rates, (2) price elasticities, (3) income elasticities, and (4) market shares. Suppression of any factor heading in the table signifies omission from the GOL model for the regions concerned.

2/ "Finished beef" is only identified in the U.S. "Other beef" in the U.S. is comparable to "beef" in all other regions.

Table 10--Factors affecting use of oilseed meal as livestock feed

| Explanatory factors 1/ | United States | Canada | EC-6 | EG-3 | Other Western Europe | Japan |
|---|---------------|----------------|--------------|-------|------------------------|-------|
| <u>Kg. oilmeal use per kg. product</u> | | | | | | |
| Input-output rates: | | | | | | |
| Beef, finished 2/ | .25 | | | | | |
| Beef, other 2/ | .44 | .10 | .16 | .12 | .15 | .50 |
| Pork | .45 | .35 | .67 | .55 | .65 | 1.40 |
| Poultry | .87 | .60 | 1.18 | 1.05 | 1.16 | 1.20 |
| Lamb and mutton | 1.72 | | | | | |
| Milk | .033 | .03 | .033 | .025 | .028 | .80 |
| Eggs | .47 | .35 | .71 | .60 | | .70 |
| <u>Percentage change in oilmeal use per unit percent price change</u> | | | | | | |
| Price elasticities: | | | | | | |
| Beef, finished 2/ | -.10 | | | | | |
| Beef, other 2/ | .23 | | | | | |
| Pork | .27 | .90 | 1.20 | 1.80 | 1.00 | 1.20 |
| Corn | 1.00 | 2.50 | .90 | 1.00 | 1.20 | 1.50 |
| Oilseed cake | -.53 | -.98 | -.25 | -.37 | -.20 | -.30 |
| <u>Kg. oilmeal use per kg. product</u> | | | | | | |
| Australia | South Africa | Eastern Europe | Soviet Union | China | Mexico Central America | |
| New Zealand | | | | | | |
| <u>Percentage change in oilmeal use per unit percent price change</u> | | | | | | |
| Input-output rates: | | | | | | |
| Pork | | | .40 | .40 | .40 | |
| Poultry | | | .50 | .50 | .50 | |
| Milk | | | .01 | .01 | | |
| Eggs | | | .13 | .40 | | |
| <u>Oilmeal use as a proportion of commodity demand</u> | | | | | | |
| Market shares: | | | | | | |
| Commodity demand feed grain | | | .19 | | .32 | |
| <u>Oilmeal use as a proportion of commodity supply</u> | | | | | | |
| Price elasticities: | | | | | | |
| Oilseed cake | -.50 | -.40 | | -.30 | | |
| <u>Oilmeal use as a proportion of commodity supply</u> | | | | | | |
| Market shares: | | | | | | |
| Commodity demand feed grain | .047 | .064 | | .21 | .30 | |

Continued

Table 10--Factors affecting use of oilseed meal as livestock feed--Continued

| Explanatory Factors 1/ | East Africa | Central Africa | India | Other South Asia | Thailand | Other Southeast Asia |
|--|-------------|----------------|-------|------------------|----------|----------------------|
| <u>Percentage change in oilmeal use per unit percent price change</u> | | | | | | |
| Price elasticities: | | | | | | |
| Oilseed cake | | | | | | |
| | | | | | -20 | |
| <u>Percentage change in oilmeal use per unit percent income change</u> | | | | | | |
| Income elasticity: | | | | | | |
| Income per capita | | | | | | |
| | | | | | .10 | |
| <u>Percentage change in oilmeal use per unit percent price change</u> | | | | | | |
| Price elasticities: | | | | | | |
| Oilseed cake | | | | | | |
| | | | | | -.20 | |
| | | | | | -.30 | |
| <u>Percentage change in oilmeal use per unit percent income change</u> | | | | | | |
| Income elasticity: | | | | | | |
| Income per capita | | | | | | |
| | | | | | .30 | |
| | | | | | .30 | |

Note: Absence of terms indicates omission from the GOL model.

1/ Factor categories include (1) input-output rates, (2) price elasticities, (3) income elasticities, and (4) market shares. Suppression of any factor heading in the table signifies omission from the GOL model for the regions concerned.

2/ "Finished beef" is only identified in the U.S. "Other beef" in the U.S. is comparable to "beef" in all other regions.

Table 11--Factors affecting nonfeed use of grains and oilseeds 1/

| Item | Elasticity with respect to price of: | | | | Annual demand trend 2/ | |
|---------------------------|--------------------------------------|-------|---------------|-------------------|------------------------|-------------------------|
| | Wheat | Rice | Coarse grains | Income elasticity | Quantity | Percent of 1969-71 base |
| | | | | | 1,000 metric tons | Percent |
| United States: | | | | | | |
| Wheat | -.2 | | | | | |
| Rice | | -.2 | | | | |
| Coarse grains | | | -.2 | | | |
| Oilseeds | | | | | | |
| Canada: | | | | | | |
| Wheat | -.05 | | .03 | | -.25 | |
| Rice | | -.3 | | | .15 | |
| Coarse grains | .05 | | -.10 | | -.3 | |
| Oilseeds | | | | | | |
| EC-6: | | | | | | |
| Wheat | -.2 | | | | -.1 | |
| Rice | | -.3 | | | .2 | |
| Coarse grains | | | -.2 | | .1 | |
| Oilseeds | | | | | | |
| EC-3: | | | | | | |
| Wheat | -.1 | | | | -.03 | |
| Rice | | -.3 | | | .2 | |
| Coarse grains | | | -.15 | | .05 | |
| Oilseeds | | | | | | |
| Other Western Europe: | | | | | | |
| Wheat | -.25 | | .1 | | -.05 | |
| Rice | .2 | -.3 | | | .2 | |
| Coarse grains | .15 | | -.35 | | .10 | |
| Oilseeds | | | | | | |
| Japan: | | | | | | |
| Wheat | -.45 | .2 | | | .2 | |
| Rice | .10 | -.15 | | | -.20 | |
| Coarse grains | | | -.25 | | .2 | |
| Oilseeds 3/ | | | -.1 | | .8 | |
| Australia & New Zealand: | | | | | | |
| Wheat | -.15 | | | | -.25 | |
| Rice | | -.1 | | | .1 | |
| Coarse grains | | | -.15 | | -.2 | |
| Oilseeds | | | | | | |
| South Africa: | | | | | | |
| Wheat | -.15 | | .10 | | .1 | |
| Rice | .15 | (-.3) | | | .1 | |
| Coarse grains | .03 | | -.08 | | -.05 | |
| Oilseeds | | | | | | |
| Mexico & Central America: | | | | | | |
| Wheat | -.35 | .10 | .15 | | .35 | |
| Rice | .2 | -.4 | .05 | | .35 | |
| Coarse grains | .05 | | -.2 | | .1 | |
| Oilseeds | | | | | | |
| Argentina: | | | | | | |
| Wheat | -.1 | | .05 | | -.1 | |
| Rice | .05 | -.2 | | | .15 | |
| Coarse grains | .05 | | -.1 | | -.25 | |
| Oilseeds. | | | | | | |

See footnotes at end of table.

Continued

Table 11--Factors affecting nonfeed use of grains and oilseeds 1/ --Continued

| Item | Elasticity with respect to price of | | | Income elasticity | Annual demand trend 2/ | |
|---------------------------------|-------------------------------------|------|---------------|-------------------|---------------------------------|----------------------------|
| | Wheat | Rice | Coarse grains | | Quantity : 1,000 metric tons | Percent of 1969-71 base |
| | | | | | | |
| Brazil: | | | | | | |
| Wheat | -.25 | .10 | .10 | | .25 | |
| Rice | .2 | -.2 | .02 | | .15 | |
| Coarse grains | .05 | .05 | -.15 | | .1 | |
| Oilseeds | | | | | | |
| Venezuela: | | | | | | |
| Wheat | -.3 | .1 | .1 | | .35 | |
| Rice | .2 | -.1 | | | .15 | |
| Coarse grains | .15 | | -.25 | | .15 | |
| Oilseeds | | | | | | |
| Other South America: | | | | | | |
| Wheat | -.25 | .1 | .15 | | .3 | |
| Rice | .2 | -.2 | | | .35 | |
| Coarse grains | .2 | | -.35 | | .15 | |
| Oilseeds | | | | | | |
| North Africa/Middle East--High: | | | | | | |
| Wheat | -.25 | .03 | .02 | | .25 | |
| Rice | .18 | -.3 | .04 | | .3 | |
| Coarse grains | .2 | .1 | -.2 | | .15 | |
| Oilseeds | | | | | | |
| North Africa/Middle East--Low: | | | | | | |
| Wheat | -.35 | .15 | .10 | | .05 | |
| Rice | .15 | -.25 | .10 | | .2 | |
| Coarse grains | .15 | .1 | -.25 | | .1 | |
| Oilseeds | | | | | | |
| East Africa: | | | | | | |
| Wheat | -.3 | .05 | .15 | | .35 | |
| Rice | .1 | -.25 | .15 | | .3 | |
| Coarse grains | .02 | .01 | -.05 | | .1 | |
| Oilseeds | | | | | | |
| Central Africa: | | | | | | |
| Wheat | | | | | | |
| Rice | | | -.2 | | .1 | |
| Coarse grains | | | | | | |
| Oilseeds | | | | | | |
| India: | | | | | | |
| Wheat | -.4 | .15 | .1 | | .7 | |
| Rice | .1 | -.4 | .01 | | .7 | |
| Coarse grains | .1 | .10 | -.35 | | .2 | |
| Oilseeds | | | | | -210 | -.86 |
| Other South Asia: | | | | | | |
| Wheat | -.4 | .25 | .01 | | .4 | |
| Rice | .2 | -.30 | .03 | | .4 | |
| Coarse grains | .15 | .2 | -.20 | | .2 | |
| Oilseeds | | | | | | |
| Thailand: | | | | | | |
| Wheat | -.05 | .2 | | | .2 | |
| Rice | | -.05 | .01 | | .1 | |
| Coarse grains | | .2 | -.1 | | .2 | |
| Oilseeds | | | | | | |

Continued

See footnotes at end of table.

Table 11--Factors affecting nonfeed use of grains and oilseeds 1/--Continued

| Item | Elasticity with respect to price of | | | Income elasticity: | Annual demand trend 2/ | |
|-----------------------|-------------------------------------|--------|---------------|--------------------|------------------------|-------------------------|
| | Wheat | Rice | Coarse grains | | Quantity: | Percent of 1969-71 base |
| | | | | | 1,000 metric tons | Percent |
| Other Southeast Asia: | | | | | | |
| Wheat | -.1 | .15 | | .2 | | |
| Rice | .01 | -.05 | | .1 | | |
| Coarse grains | | | | .15 | | |
| Oilseeds | | | | | | |
| Indonesia: | | | | | | |
| Wheat | -.6 | 1.0 | .4 | .55 | 5 | .94 |
| Rice | .04 | -.25 | .03 | .45 | | |
| Coarse grains | .03 | .3 | -.3 | .3 | 50 | 2.09 |
| Oilseeds | | | | | | |
| East Asia--High: | | | | | | |
| Wheat | -.3 | .2 | .04 | .10 | | |
| Rice | .15 | -.3 | .05 | .05 | | |
| Coarse grains | .1 | .2 | -.3 | .05 | | |
| Oilseeds | | | | | | |
| East Asia--Low: | | | | | | |
| Wheat | (-.35) | (.15) | .2 | .35 | | |
| Rice | (.05) | (-.22) | .05 | .2 | | |
| Coarse grains | (.05) | (.15) | -.25 | .2 | | |
| Oilseeds | | | | | | |

1/ Including food use of soybeans in the case of Japan. The use of parentheses in the table indicates trade prices; the absence of parentheses indicates demand prices.

2/ Trend in demand independent of any price effect.

3/ The coefficient shown in the coarse grain column is an elasticity with respect to the price of soybeans.

Table 12--Factors affecting the supply of grains and oilseeds 1/

| Item | Area | | | | Yield | | | |
|---------------------------|-------------------------------------|--------|------------------|----------|-------------------------------------|---------|------------------|----------|
| | elasticity with respect to price of | | | | elasticity with respect to price of | | | |
| | Wheat | Rice | Coarse grains | Oilseeds | Wheat | Rice | Coarse grains | Oilseeds |
| United States: | | | | | | | | |
| Wheat | (2.5) | | | | (-1.84) | (-.69) | (-.05) | |
| Rice | | (.8) | | | | | | (.10) |
| Coarse grains | | (-.83) | | | (2.3) | (-1.00) | | (.10) |
| Oilseeds | | (-.78) | | | (-3.60) | (3.25) | | (.02) |
| Canada: | | | | | | | | |
| Wheat | | .5 | | | -.40 | -.15 | .15 | |
| Rice | | | | | | | | |
| Coarse grains | | -.55 | | | .55 | -.15 | | .15 |
| Oilseeds | | -.16 | | | -.24 | 1.0 | | .20 |
| EC-6: | | | | | | | | |
| Wheat | | .7 | | | -.70 | | .25 | |
| Rice | | | .20 | | | | | .20 |
| Coarse grains | | -.61 | | | .61 | | | .30 |
| Oilseeds | | | | | | | | |
| EC-3: | | | | | | | | |
| Wheat | | .65 | | | -.55 | | .2 | |
| Rice | | | | | | | | |
| Coarse grains | | -.161 | | | .147 | | | .2 |
| Oilseeds | | | | | | | | .02 |
| Other Western Europe: | | | | | | | | |
| Wheat | | .25 | | | -.25 | | .25 | |
| Rice | | | .15 | | | | | .15 |
| Coarse grains | | -.185 | | | .185 | .10 | | .30 |
| Oilseeds | | | | | | .10 | | .10 |
| Japan: | | | | | | | | |
| Wheat | | | | | | | .30 | |
| Rice | | | .012 | | | -.02 | | .15 |
| Coarse grains | | | | | | | | .25 |
| Oilseeds | | | -.2 | | | .28 | | .15 |
| Australia & New Zealand: | | | | | | | | |
| Wheat | | .4 | | | -.35 | | .15 | |
| Rice | | | .10 | | | | | .1 |
| Coarse grains | | -.75 | | | .66 | | | .15 |
| Oilseeds | | | | | | .30 | | .15 |
| South Africa: | | | | | | | | |
| Wheat | | .30 | | | | | .25 | |
| Rice | | | | | | | | |
| Coarse grains | | | | | (.30) | (-.3) | | (.30) |
| Oilseeds | | | | | | | | (.10) |
| Mexico & Central America: | | | | | | | | |
| Wheat | | .45 | | | -.25 | -.07 | .20 | |
| Rice | | | .15 | | | | | .10 |
| Coarse grains | | -.02 | | | .04 | -.02 | | .07 |
| Oilseeds | | -.21 | | | -.46 | .50 | | .05 |
| Argentina: | | | | | | | | |
| Wheat | | .4 | | | -.31 | | .10 | |
| Rice | | | .25 | | | | | .30 |
| Coarse grains | | -.21 | | | .3 | -.15 | | .15 |
| Oilseeds | | -.15 | | | -.30 | .45 | | .10 |

See footnote at end of table.

Continued

Table 12--Factors affecting the supply of grains and oilseeds 1/ --Continued

| Item | Area | | | | Yield | | | | |
|--------------------------------|-------------------------------------|-------|-------------------------------------|----------|-------|-------|-------|---------------|----------|
| | elasticity with respect to price of | | elasticity with respect to price of | | Wheat | | Rice | | |
| | Wheat | Rice | Coarse grains | Oilseeds | | Wheat | Rice | Coarse grains | Oilseeds |
| Brazil: | | | | | | | | | |
| Wheat | .7 | | | | -.70 | | | .05 | |
| Rice | | | .2 | | -.10 | | | | .10 |
| Coarse grains | | -.12 | | | .3 | | -.20 | | |
| Oilseeds | | | | | -1.10 | | 1.6 | | |
| Venezuela: | | | | | | | | | |
| Wheat | | | | | | | | .15 | |
| Rice | | | | | | | | | .15 |
| Coarse grains | | | | | | | | | |
| Oilseeds | | | | | | | | | |
| Other South America: | | | | | | | | | |
| Wheat | .2 | | | | -.05 | | | .10 | |
| Rice | | | .15 | | .07 | | | | .15 |
| Coarse grains | | -.10 | | | .05 | | -.03 | | |
| Oilseeds | | | | | -.08 | | .20 | | |
| North Africa/Middle East-High: | | | | | | | | | |
| Wheat | | .1 | -.03 | | -.03 | | | .05 | |
| Rice | | -.20 | .50 | | | | | | .15 |
| Coarse grains | | -.25 | | | .09 | | | | .05 |
| Oilseeds | | | | | | | | | |
| North Africa/Middle East-Low: | | | | | | | | | |
| Wheat | | .15 | | | -.06 | | | .10 | |
| Rice | | -.02 | (.30) | | | | | | (.20) |
| Coarse grains | | -.20 | | | .07 | | | | .05 |
| Oilseeds | | | | | | | | | |
| East Africa: | | | | | | | | | |
| Wheat | | .10 | | | | | | .05 | |
| Rice | | | .20 | | | | | | .15 |
| Coarse grains | | | | | | | | | .10 |
| Oilseeds | | | | | | | | | |
| Central Africa | | | | | | | | | |
| Wheat | | | | | | | | .20 | |
| Rice | | | | | | | | | |
| Coarse grains | | | | | | | | | |
| Oilseeds | | | | | | | | | |
| India: | | | | | | | | | |
| Wheat | .30 | -.20 | | | -.12 | | | .08 | |
| Rice | -.05 | .25 | | | -.10 | | | | .07 |
| Coarse grains | -.03 | -.10 | | | .17 | | -.062 | | |
| Oilseeds | -.055 | -.09 | | | -.12 | | .20 | | |
| Other South Asia: | | | | | | | | | |
| Wheat | | .1 | -.05 | | -.02 | | | .05 | |
| Rice | | -.015 | .025 | | | | | | .03 |
| Coarse grains | | -.25 | | | .07 | | | | .02 |
| Oilseeds | | | | | | | | | |
| Thailand: | | | | | | | | | |
| Wheat | | | | | | | | .10 | |
| Rice | | | | | | | | | .10 |
| Coarse grains | | | | | | | | | |
| Oilseeds | | | | | | | | | |

See footnote at end of table.

Continued.

Table 12--Factors affecting the supply of grains and oilseeds 1/ --Continued

| Item | Area | | | Yield | | |
|-----------------------|--|------|------------------|---|-------|-------|
| | elasticity with respect to price of Wheat | Rice | Coarse grains | elasticity with respect to price of Oilseeds | Wheat | Rice |
| | | | | | | |
| Other Southeast Asia: | | | | | | |
| Wheat | | | | | | |
| Rice | | .10 | | | .10 | |
| Coarse grains | | | | | | (.20) |
| Oilseeds | | | | | | |
| Indonesia: | | | | | | |
| Wheat | | | | | | |
| Rice | | .2 | -.03 | | .10 | |
| Coarse grains | | | .14 | -.10 | | .05 |
| Oilseeds | | | -.15 | .30 | | .02 |
| East Asia--High | | | | | | |
| Wheat | .25 | -.20 | | | .20 | |
| Rice | -.02 | .19 | -.10 | -.01 | | .15 |
| Coarse grains | | -.25 | .3 | -.10 | | .20 |
| Oilseeds | | -.26 | -.19 | .25 | | .02 |
| East Asia--Low | | | | | | |
| Wheat | | | | | | |
| Rice | | .06 | -.06 | | .08 | |
| Coarse grains | | -.10 | .1 | | | .05 |
| Oilseeds | | | | | | (.03) |

1/ The use of parentheses in the table indicates trade prices; the absence of parentheses indicates supply prices.

TABLE 13--BASE 1970 QUANTITY DOCUMENTATION

APRIL 1978

TOTAL GRAIN UTILIZATION

| REGION | AREA | YIELD | PRODUCTION | PERCENT OF WORLD SUPPLY | FEED USAGE | FOOD & OTHER USAGE | TOTAL USAGE | IMPORTS | EXPORTS |
|-------------------|----------|-------|------------|-------------------------------|---------------|--------------------------|----------------|-------------------|---------|
| | | | | | | | | 1,000 METRIC TONS | |
| 1,000 METRIC TONS | | | | | | | | | |
| | | | | | | | | | |
| UNITED STATES | 60671.0 | 3.4 | 208733.0 | 19.3 | 136772.0 | 32232.0 | 169004.0 | 0.0 | 39945.0 |
| CANADA | 17065.0 | 2.0 | 33400.0 | 3.1 | 15305.0 | 4645.0 | 19950.0 | 60.0 | 14991.0 |
| EURO SIX | 21404.0 | 3.3 | 71491.0 | 6.5 | 46625.0 | 32729.0 | 79354.0 | 8570.0 | 1226.0 |
| EURO THREE | 5755.0 | 3.8 | 21810.0 | 2.0 | 20286.0 | 11109.0 | 31395.0 | 9445.0 | 0.0 |
| OTHER W EUROPE | 14456.0 | 2.0 | 28405.0 | 2.6 | 20173.0 | 13292.0 | 33465.0 | 4962.0 | 0.0 |
| SOUTH AFRICA | 7264.0 | 1.4 | 10175.0 | 0.9 | 2274.0 | 4948.0 | 7222.0 | 76.0 | 2645.0 |
| JAPAN | 3458.0 | 3.7 | 12675.0 | 1.2 | 9248.0 | 18603.0 | 27851.0 | 14960.0 | 546.0 |
| AUST-N ZEALAND | 12047.0 | 1.2 | 15019.0 | 1.4 | 2810.0 | 3236.0 | 6046.0 | 0.0 | 10910.0 |
| EAST EUROPE | 29964.0 | 2.4 | 72059.0 | 6.7 | 18125.0 | 60598.0 | 76723.0 | 6067.0 | 0.0 |
| SOVIET UNION | 116285.0 | 1.5 | 164965.0 | 15.2 | 83800.0 | 78023.0 | 161023.0 | 858.0 | 4799.0 |
| CHINA | 114322.0 | 1.4 | 163940.0 | 15.2 | 7070.0 | 159831.0 | 166901.0 | 3915.0 | 877.0 |
| INDONESIA | 11028.0 | 1.3 | 14667.0 | 1.3 | 0.0 | 15531.0 | 15531.0 | 1268.0 | 200.0 |
| EAST ASIA HIGH | 3208.0 | 2.7 | 8730.0 | 0.8 | 1890.0 | 12744.0 | 14634.0 | 5969.0 | 0.0 |
| EAST ASIA LOW | 6243.0 | 1.0 | 6520.0 | 0.6 | 0.0 | 8153.0 | 8153.0 | 1766.0 | 0.0 |
| THAILAND | 7619.0 | 1.4 | 10843.0 | 1.0 | 0.0 | 7600.0 | 7600.0 | 72.0 | 3227.0 |
| OTHER SE ASIA | 10084.0 | 1.2 | 11940.0 | 1.1 | 0.0 | 11747.0 | 11747.0 | 255.0 | 486.0 |
| INDIA | 98160.0 | 0.9 | 86965.0 | 8.0 | 10124.0 | 89984.0 | 90996.0 | 3210.0 | 0.0 |
| OTHER S. ASIA | 21473.0 | 1.1 | 23728.0 | 2.2 | 0.0 | 25883.0 | 25883.0 | 2404.0 | 0.0 |
| N.AF.-M.EST HIGH | 11803.0 | 0.8 | 9830.0 | 0.9 | 832.0 | 13373.0 | 14205.0 | 3778.0 | 0.0 |
| N.AF.-M.EST LOW | 23965.0 | 1.2 | 29030.0 | 2.7 | 4628.0 | 30685.0 | 35313.0 | 5718.0 | 398.0 |
| CENTRAL AFRICA | 8616.0 | 0.7 | 6427.0 | 0.6 | 0.0 | 7392.0 | 7392.0 | 851.0 | 116.0 |
| EAST AFRICA | 5923.0 | 1.2 | 6955.0 | 0.6 | 28.0 | 7025.0 | 7053.0 | 299.0 | 0.0 |
| MIDDLE AMERICA | 12337.0 | 1.3 | 15749.0 | 1.5 | 3107.6 | 13790.0 | 16897.0 | 1043.0 | 0.0 |
| VENEZUELA | 730.0 | 1.1 | 831.0 | 0.1 | 300.0 | 1566.0 | 1866.0 | 968.0 | 17.0 |
| BRAZIL | 17121.0 | 1.2 | 21075.0 | 1.9 | 10876.0 | 11734.0 | 22610.0 | 1835.0 | 1003.0 |
| ARGENTINA | 11273.0 | 1.7 | 19222.0 | 1.6 | 5148.0 | 5674.0 | 10222.0 | 0.0 | 8177.0 |
| OTHER S AMERICA | 4994.0 | 1.4 | 6883.0 | 0.6 | 1604.0 | 7425.0 | 9029.0 | 2230.0 | 123.0 |
| DEV-ED REGION | 142120.0 | 2.8 | 401708.0 | 37.1 | 253493.0 | 120794.0 | 374287.0 | 38073.0 | 70263.0 |
| CENTRAL PLAN RG | 254571.0 | 1.6 | 400964.0 | 37.1 | 108195.0 | 298452.0 | 406647.0 | 10840.0 | 5676.0 |
| LESS DEV-ED RG | 254577.0 | 1.1 | 279336.0 | 25.8 | 29425.0 | 270306.0 | 299731.0 | 31664.0 | 13747.0 |
| WORLD TOTAL | 651268.0 | 1.7 | 1082008.0 | 100.0 | 391113.0 | 689552.0 | 1060665.0 | 80577.0 | 89686.0 |

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TABLE 13--BASE 1970 QUANTITY DOCUMENTATION--CONTINUED

APRIL 1978

COARSE GRAINS UTILIZATION

| REGION | AREA | YIELD | PRODUCTION | PERCENT OF WORLD SUPPLY | FEED USAGE | FOOD & OTHER USAGE | TOTAL USAGE | IMPORTS | EXPORTS |
|------------------|----------|-------|------------|-------------------------------|---------------|--------------------------|----------------|-------------------------------|---------|
| | | | | | | | | ----- 1,000 METRIC TONS ----- | |
| | | | | | | | | | |
| UNITED STATES | 41222.0 | 4.3 | 165830.0 | 29.4 | 130723.0 | 15064.0 | 145787.0 | 0.0 | 20345.0 |
| CANADA | 7865.0 | 2.2 | 17300.0 | 3.1 | 13085.0 | 2130.0 | 15215.0 | 0.0 | 3241.0 |
| EURO SIX | 11325.0 | 3.5 | 39295.0 | 7.0 | 38025.0 | 9825.0 | 47650.0 | 8570.0 | 0.0 |
| EURO THREE | 4540.0 | 3.7 | 16705.0 | 3.0 | 16761.0 | 4739.0 | 21500.0 | 4630.0 | 0.0 |
| OTHER W EUROPE | 8235.0 | 2.2 | 18075.0 | 3.2 | 18313.0 | 3777.0 | 22090.0 | 4120.0 | 0.0 |
| SOUTH AFRICA | 5314.0 | 1.6 | 8715.0 | 1.5 | 2274.0 | 3556.0 | 5830.0 | 0.0 | 2585.0 |
| JAPAN | 265.0 | 2.7 | 725.0 | 0.1 | 9248.0 | 1867.0 | 11115.0 | 10265.0 | 0.0 |
| AUST-N ZEALAND | 4160.0 | 1.3 | 5408.0 | 1.0 | 2006.0 | 985.0 | 2985.0 | 0.0 | 2400.0 |
| EAST EUROPE | 19180.0 | 2.4 | 45647.0 | 8.1 | 15592.0 | 31658.0 | 47250.0 | 1550.0 | 0.0 |
| SOVIET UNION | 44580.0 | 1.6 | 71330.0 | 12.7 | 47900.0 | 24870.0 | 71870.0 | 540.0 | 0.0 |
| CHINA | 55750.0 | 1.3 | 70700.0 | 12.5 | 7070.0 | 63630.0 | 70700.0 | 0.0 | 0.0 |
| INDONESIA | 2870.0 | 1.0 | 2730.0 | 0.5 | 0.0 | 2395.0 | 2395.0 | 0.0 | 200.0 |
| EAST ASIA HIGH | 985.0 | 2.1 | 2049.0 | 0.4 | 1890.0 | 1770.0 | 3660.0 | 1665.0 | 0.0 |
| EAST ASIA LOW | 2398.0 | 0.8 | 2031.0 | 0.4 | 0.0 | 2160.0 | 2160.0 | 245.0 | 0.0 |
| THAILAND | 765.0 | 2.5 | 1950.0 | 0.3 | 0.0 | 210.0 | 210.0 | 0.0 | 1655.0 |
| OTHER SE ASIA | 75.0 | 4.0 | 303.0 | 0.1 | 0.0 | 85.0 | 85.0 | 0.0 | 215.0 |
| INDIA | 43553.0 | 0.6 | 24386.0 | 4.3 | 1012.0 | 24501.0 | 25613.0 | 115.0 | 0.0 |
| OTHER S. ASIA | 1700.0 | 0.5 | 900.0 | 0.2 | 0.0 | 925.0 | 925.0 | 15.0 | 0.0 |
| N.AF.-M.EST HIGH | 3000.0 | 0.8 | 2250.0 | 0.4 | 832.0 | 2733.0 | 3565.0 | 1205.0 | 0.0 |
| N.AF.-M.EST LOW | 10250.0 | 1.3 | 13325.0 | 2.4 | 4628.0 | 9422.0 | 14050.0 | 340.0 | 0.0 |
| CENTRAL AFRICA | 4363.0 | 0.7 | 2925.0 | 0.5 | 0.0 | 2925.0 | 2925.0 | 0.0 | 116.0 |
| EAST AFRICA | 5470.0 | 1.2 | 6345.0 | 1.1 | 28.0 | 6225.0 | 6253.0 | 17.0 | 0.0 |
| MIDDLE AMERICA | 11050.0 | 1.2 | 12930.0 | 2.3 | 3012.0 | 10083.0 | 13095.0 | 100.0 | 0.0 |
| VENEZUELA | 609.0 | 1.1 | 700.0 | 0.1 | 300.0 | 745.0 | 1045.0 | 262.0 | 0.0 |
| BRAZIL | 10400.0 | 1.4 | 14560.0 | 2.6 | 10876.0 | 3249.0 | 14125.0 | 0.0 | 535.0 |
| ARGENTINA | 5784.0 | 1.9 | 13115.0 | 2.3 | 5148.0 | 1287.0 | 6435.0 | 0.0 | 6467.0 |
| OTHER S AMERICA | 2825.0 | 1.2 | 3531.0 | 0.6 | 1604.0 | 2306.0 | 3910.0 | 380.0 | 0.0 |
| DEV-ED REGION | 82926.0 | 3.3 | 272053.0 | 48.3 | 230429.0 | 41943.0 | 272372.0 | 27585.0 | 28651.0 |
| CENTRAL PLAN RG | 119510.0 | 1.6 | 187677.0 | 33.3 | 69662.0 | 120158.0 | 189820.0 | 2090.0 | 0.0 |
| LESS DEV-ED RG | 107089.0 | 1.0 | 104027.0 | 18.5 | 29330.0 | 71021.0 | 100351.0 | 4344.0 | 9588.0 |
| WORLD TOTAL | 309525.0 | 1.8 | 563757.0 | 100.0 | 329421.0 | 233122.0 | 562543.0 | 34019.0 | 38239.0 |

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TABLE 13--BASE 1970 QUANTITY DOCUMENTATION--CONTINUED

APRIL 1978

WHEAT UTILIZATION

| REGION | AREA | YIELD | PRODUCTION | PERCENT OF WORLD SUPPLY | FEED USAGE | FOOD & OTHER USAGE | TOTAL USAGE | IMPORTS | EXPORTS |
|------------------|----------|-------------------|-------------------------------|-------------------------------|---------------|--------------------------|----------------|-------------------------------|---------|
| | | | | | | | | ----- 1,000 METRIC TONS ----- | |
| | | 1,000 HECTARES | METRIC TONS PER HECTARE | 1,000 METRIC TONS | | | | | |
| UNITED STATES | 18668.0 | 2.1 | 40025.0 | 12.6 | 6849.0 | 15854.0 | 21903.0 | 0.0 | 17881.0 |
| CANADA | 5200.0 | 1.8 | 16100.0 | 5.1 | 2220.0 | 2455.0 | 4675.0 | 0.0 | 11750.0 |
| EURO SIX | 9385.0 | 3.2 | 31535.0 | 9.9 | 8600.0 | 22300.0 | 30900.0 | 0.0 | 1170.0 |
| EURO THREE | 1215.0 | 4.2 | 5105.0 | 1.6 | 3525.0 | 6225.0 | 9750.0 | 4670.0 | 0.0 |
| OTHER W EUROPE | 6100.0 | 1.6 | 9880.0 | 3.1 | 1860.0 | 8940.0 | 10800.0 | 775.0 | 0.0 |
| SOUTH AFRICA | 1950.0 | 0.7 | 1460.0 | 0.5 | 0.0 | 1315.0 | 1315.0 | 0.0 | 60.0 |
| JAPAN | 225.0 | 2.4 | 550.0 | 0.2 | 0.0 | 5036.0 | 5030.0 | 4695.0 | 0.0 |
| AUST-N ZEALAND | 7856.0 | 1.2 | 9420.0 | 3.0 | 810.0 | 2190.0 | 3000.0 | 0.0 | 8300.0 |
| EAST EUROPE | 13550.0 | 2.5 | 26265.0 | 8.2 | 2533.0 | 28537.0 | 31070.0 | 4261.0 | 0.0 |
| SOVIET UNION | 65355.0 | 1.4 | 92804.0 | 29.1 | 36000.0 | 52004.0 | 88004.0 | 0.0 | 4799.0 |
| CHINA | 24400.0 | 1.0 | 23910.0 | 7.5 | 0.0 | 27748.0 | 27748.0 | 3915.0 | 0.0 |
| INDONESIA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 531.0 | 531.0 | 540.0 | 0.0 |
| EAST ASIA HIGH | 155.0 | 2.2 | 341.0 | 0.1 | 0.0 | 3175.0 | 3175.0 | 2845.0 | 0.0 |
| EAST ASIA LOW | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 930.0 | 930.0 | 945.0 | 0.0 |
| THAILAND | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 69.0 | 69.0 | 78.0 | 0.0 |
| OTHER SE ASIA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 291.0 | 291.0 | 255.0 | 0.0 |
| INDIA | 16930.0 | 1.2 | 20825.0 | 6.5 | 0.0 | 22500.0 | 22500.0 | 2600.0 | 0.0 |
| OTHER S. ASIA | 6245.0 | 1.1 | 6994.0 | 2.2 | 0.0 | 8735.0 | 8735.0 | 2000.0 | 0.0 |
| N.AF.-M.EST HIGH | 8330.0 | 0.8 | 6664.0 | 2.1 | 0.0 | 9306.0 | 9306.0 | 2155.0 | 0.0 |
| N.AF.-M.EST LOW | 13155.0 | 1.1 | 13815.0 | 4.3 | 0.0 | 19771.0 | 19771.0 | 5378.0 | 0.0 |
| CENTRAL AFRICA | 1022.0 | 0.6 | 634.0 | 0.2 | 0.0 | 984.0 | 984.0 | 156.0 | 0.0 |
| EAST AFRICA | 215.0 | 1.8 | 396.0 | 0.1 | 0.0 | 565.0 | 565.0 | 261.0 | 0.0 |
| MIDDLE AMERICA | 750.0 | 2.8 | 2100.0 | 0.7 | 95.0 | 2855.0 | 2950.0 | 810.0 | 0.0 |
| VENEZUELA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 707.0 | 707.0 | 706.0 | 0.0 |
| BRAZIL | 1840.0 | 1.0 | 1766.0 | 0.6 | 0.0 | 3780.0 | 3780.0 | 1835.0 | 0.0 |
| ARGENTINA | 4402.0 | 1.3 | 5875.0 | 1.8 | 0.0 | 4225.0 | 4225.0 | 0.0 | 1640.0 |
| OTHER S AMERICA | 1445.0 | 1.3 | 1950.0 | 0.6 | 0.0 | 3840.0 | 3840.0 | 1850.0 | 0.0 |
| DEV-ED REGION | 55093.0 | 2.1 | 114075.0 | 35.8 | 23064.0 | 64309.0 | 87373.0 | 10140.0 | 39161.0 |
| CENTRAL PLAN RG | 100345.0 | 1.4 | 142979.0 | 44.9 | 38533.0 | 108289.0 | -146822.0 | 8176.0 | 4799.0 |
| LESS DEV-ED RG | 54489.0 | 1.1 | 61360.0 | 19.3 | 95.0 | 82184.0 | 82279.0 | 22406.0 | 1640.0 |
| WORLD TOTAL | 209927.0 | 1.5 | 318414.0 | 100.0 | 61692.0 | 254782.0 | 316474.0 | 40722.0 | 45600.0 |

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TABLE 13--BASE 1970 QUANTITY DOCUMENTATION--CONTINUED

APRIL 1978

RICE UTILIZATION

| REGION | AREA | YIELD 1,000 HECTARES | PRODUCTION METRIC TONS PER HECTARE | PERCENT OF WORLD SUPPLY | FEED USAGE | FOOD & OTHER USAGE | TOTAL USAGE | IMPORTS | EXPORTS |
|-------------------------------|----------|----------------------------|---|-------------------------------|---------------|--------------------------|----------------|---------|---------|
| ----- 1,000 METRIC TONS ----- | | | | | | | | | |
| UNITED STATES | 781.0 | 3.7 | 2878.0 | 1.4 | 0.0 | 1314.0 | 1314.0 | 0.0 | 1719.0 |
| CANADA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 60.0 | 60.0 | 60.0 | 0.0 |
| EURO SIX | 194.0 | 3.4 | 661.0 | 0.3 | 0.0 | 604.0 | 604.0 | 0.0 | 56.0 |
| EURO THREE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 145.0 | 145.0 | 145.0 | 0.0 |
| OTHER L EUROPE | 121.0 | 3.7 | 450.0 | 0.2 | 0.0 | 575.0 | 575.0 | 67.0 | 0.0 |
| SOUTH AFRICA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 77.0 | 77.0 | 76.0 | 0.0 |
| JAPAN | 2968.0 | 3.8 | 11400.0 | 5.7 | 0.0 | 11706.0 | 11706.0 | 0.0 | 545.0 |
| AUST-N ZEALAND | 37.0 | 5.2 | 191.0 | 0.1 | 0.0 | 61.0 | 61.0 | 0.0 | 130.0 |
| EAST EUROPE | 194.0 | 0.8 | 147.0 | 0.1 | 0.0 | 403.0 | 403.0 | 256.0 | 0.0 |
| SOVIET UNION | 350.0 | 2.4 | 831.0 | 0.4 | 0.0 | 1149.0 | 1149.0 | 318.0 | 0.0 |
| CHINA | 34172.0 | 2.0 | 69330.0 | 34.7 | 0.0 | 68453.0 | 68453.0 | 0.0 | 877.0 |
| INDONESIA | 8158.0 | 1.5 | 11877.0 | 5.9 | 0.0 | 12605.0 | 12605.0 | 728.0 | 0.0 |
| EAST ASIA HIGH | 2068.0 | 3.1 | 6340.0 | 3.2 | 0.0 | 7799.0 | 7799.0 | 1459.0 | 0.0 |
| EAST ASIA LOW | 3853.0 | 1.2 | 4489.0 | 2.2 | 0.0 | 5063.0 | 5063.0 | 576.0 | 0.0 |
| THAILAND | 6854.0 | 1.3 | 8893.0 | 4.5 | 0.0 | 7321.0 | 7321.0 | 0.0 | 1572.0 |
| OTHER SE ASIA | 10009.0 | 1.2 | 11640.0 | 5.8 | 0.0 | 11371.0 | 11371.0 | 0.0 | 271.0 |
| INDIA | 37677.0 | 1.1 | 41755.0 | 20.9 | 0.0 | 42983.0 | 42983.0 | 495.0 | 0.0 |
| OTHER S. ASIA | 13528.0 | 1.2 | 15834.0 | 7.9 | 0.0 | 16223.0 | 16223.0 | 389.0 | 0.0 |
| N.AF.-M.EST HIGH | 473.0 | 1.9 | 916.0 | 0.5 | 0.0 | 1334.0 | 1334.0 | 418.0 | 0.0 |
| N.AF.-M.EST LOW | 560.0 | 3.4 | 1898.0 | 0.9 | 0.0 | 1492.0 | 1492.0 | 0.0 | 398.0 |
| CENTRAL AFRICA | 3231.0 | 0.9 | 2868.0 | 1.4 | 0.0 | 3563.0 | 3563.0 | 695.0 | 0.0 |
| EAST AFRICA | 238.0 | 3.9 | 214.0 | 0.1 | 0.0 | 235.0 | 235.0 | 21.0 | 0.0 |
| MIDDLE AMERICA | 537.0 | 1.3 | 719.0 | 0.4 | 0.0 | 852.0 | 852.0 | 133.0 | 0.0 |
| VE涅ZUELA | 121.0 | 1.1 | 131.0 | 0.1 | 0.0 | 114.0 | 114.0 | 0.0 | 17.0 |
| BRAZIL | 4681.0 | 1.0 | 4749.0 | 2.4 | 0.0 | 4705.0 | 4705.0 | 0.0 | 68.0 |
| ARGENTINA | 87.0 | 2.7 | 232.0 | 0.1 | 0.0 | 162.0 | 162.0 | 0.0 | 70.0 |
| OTHER S AMERICA | 724.0 | 1.9 | 1402.0 | 0.7 | 0.0 | 1279.0 | 1279.0 | 0.0 | 123.0 |
| DEV-ED REGION | 4101.0 | 3.8 | 15580.0 | 7.8 | 0.0 | 14542.0 | 14542.0 | 348.0 | 2451.0 |
| CENTRAL PLAN RG | 34716.0 | 2.0 | 70308.0 | 35.2 | 0.0 | 70005.0 | 70005.0 | 574.0 | 877.0 |
| LESS DEV-ED RG | 92999.0 | 1.2 | 113949.0 | 57.0 | 0.0 | 117101.0 | 117101.0 | 4914.0 | 2519.0 |
| WORLD TOTAL | 131816.0 | 1.5 | 199837.0 | 100.0 | 0.0 | 201648.0 | 201648.0 | 5836.0 | 5847.0 |

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TABLE 13--BASE 1970 QUANTITY DOCUMENTATION--CONTINUED

APRIL 1978

OILMEAL UTILIZATION

| REGION | AREA | YIELD | PRODUCTION | PERCENT OF WORLD SUPPLY | FEED USAGE | FOOD & OTHER USAGE | TOTAL USAGE | IMPORTS | EXPORTS |
|--------|------------------|-------------------|-------------------------------|-------------------------------|---------------|--------------------------|----------------|-------------------------------|---------|
| | | | | | | | | ----- 1,000 METRIC TONS ----- | |
| | | | | | | | | | |
| | | 1,000 HECTARES | METRIC TONS PER HECTARE | 1,000 METRIC TONS | PERCENT | | | | |
| 6 | UNITED STATES | 16772.0 | 1.5 | 25384.0 | 45.5 | 14234.0 | 0.0 | 14234.0 | 0.0 |
| | CANADA | 2680.0 | 0.5 | 1305.0 | 2.3 | 670.0 | 0.0 | 870.0 | 0.0 |
| | EURO SIX | 0.0 | 0.0 | 549.0 | 1.0 | 10546.0 | 0.0 | 10546.0 | 9997.0 |
| | EURO THREE | 0.0 | 0.0 | 544.0 | 1.0 | 3028.0 | 0.0 | 3028.0 | 2484.0 |
| | OTHER W EUROPE | 545.0 | 2.0 | 1070.0 | 1.9 | 2951.0 | 0.0 | 2951.0 | 1881.0 |
| | SOUTH AFRICA | 0.0 | 0.0 | 684.0 | 1.2 | 425.0 | 0.0 | 425.0 | 0.0 |
| | JAPAN | 0.0 | 0.0 | 978.0 | 1.8 | 3124.0 | 651.0 | 3775.0 | 2795.0 |
| | AUST-N ZEALAND | 195.0 | 0.3 | 60.0 | 0.1 | 0.0 | 152.0 | 152.0 | 92.0 |
| | EAST EUROPE | 0.0 | 0.0 | 1315.0 | 2.4 | 2482.0 | 0.0 | 2482.0 | 1166.0 |
| | SOVIET UNION | 0.0 | 0.0 | 5602.0 | 10.0 | 5602.0 | 0.0 | 5602.0 | 0.0 |
| | CHINA | 0.0 | 0.0 | 3892.0 | 7.6 | 3642.0 | 0.0 | 3642.0 | 0.0 |
| | INDONESIA | 950.0 | 0.5 | 502.0 | 0.9 | 0.0 | 186.0 | 186.0 | 250.0 |
| | EAST ASIA HIGH | 459.0 | 0.3 | 148.0 | 0.3 | 789.0 | 0.0 | 789.0 | 601.0 |
| | EAST ASIA LOW | 0.0 | 0.0 | 842.0 | 1.5 | 486.0 | 0.0 | 486.0 | 0.0 |
| | INDIA | 14800.0 | 0.2 | 3458.0 | 6.2 | 2739.0 | 0.0 | 2739.0 | 0.0 |
| | N.AF.-M-EST HIGH | 0.0 | 0.0 | 0.0 | 0.0 | 336.0 | 0.0 | 336.0 | 336.0 |
| | CENTRAL AFRICA | 0.0 | 0.0 | 2141.0 | 3.8 | 710.0 | 0.0 | 710.0 | 0.0 |
| | MIDDLE AMERICA | 556.0 | 1.4 | 791.0 | 1.4 | 920.0 | 0.0 | 920.0 | 1431.0 |
| | BRAZIL | 1271.0 | 1.4 | 1817.0 | 3.3 | 698.0 | 0.0 | 698.0 | 129.0 |
| | ARGENTINA | 2244.0 | 0.5 | 1036.0 | 1.9 | 0.0 | 243.0 | 243.0 | 0.0 |
| | OTHER S AMERICA | 401.0 | 9.2 | 3674.0 | 6.6 | 341.0 | 0.0 | 341.0 | 793.0 |
| | DEV-ED REGION | 20192.0 | 1.5 | 30574.0 | 54.8 | 35178.0 | 803.0 | 35981.0 | 17249.0 |
| | CENTRAL PLAN RG | 0.0 | 0.0 | 10810.0 | 19.4 | 11726.0 | 0.0 | 11726.0 | 1166.0 |
| | LESS DEV-ED RG | 20675.0 | 0.7 | 14409.0 | 25.8 | 7019.0 | 431.0 | 7450.0 | 1066.0 |
| | WORLD TOTAL | 40867.0 | 1.4 | 55793.0 | 100.0 | 53923.0 | 1234.0 | 55157.0 | 19481.0 |
| | | | | | | | | | 20159.0 |

CONTINUED

TABLE 13--BASE 1970 QUANTITY DOCUMENTATION--CONTINUED

APRIL 1978

| REGION | PRODUCTION 1,000 METRIC TONS | PERCENT OF WORLD SUPPLY | FEED USAGE | FOOD & OTHER USAGE | TOTAL USAGE | IMPORTS | EXPORTS | |
|--------|---------------------------------------|-------------------------------|-------------------------------|--------------------------|----------------|---------|---------|--|
| | | PERCENT | ----- 1,000 METRIC TONS ----- | | | | | |

MILK PRODUCTS UTILIZATION

| | | | | | | | |
|-----------------|----------|-------|-----|-----|-----|-----|-----|
| UNITED STATES | 53162.0 | 27.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| CANADA | 8284.0 | 4.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| EURO SIX | 74412.0 | 37.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| EURO THREE | 20778.0 | 10.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| OTHER W EUROPE | 21720.0 | 11.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| JAPAN | 4597.0 | 2.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| AUST-N ZEALAND | 13741.0 | 7.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| DEV-ED REGION | 196794.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| CENTRAL PLAN RG | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| LESS DEV-ED RG | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| WORLD TOTAL | 196794.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

FLUID MILK UTILIZATION

| | | | | | | | |
|-----------------|-----|-----|-----|----------|----------|-----|-----|
| UNITED STATES | 0.0 | 0.0 | 0.0 | 33566.0 | 33566.0 | 0.0 | 0.0 |
| CANADA | 0.0 | 0.0 | 0.0 | 3711.0 | 3711.0 | 0.0 | 0.0 |
| EURO SIX | 0.0 | 0.0 | 0.0 | 31526.0 | 31526.0 | 0.0 | 0.0 |
| EURO THREE | 0.0 | 0.0 | 0.0 | 12443.0 | 12443.0 | 0.0 | 0.0 |
| OTHER W EUROPE | 0.0 | 0.0 | 0.0 | 12971.0 | 12971.0 | 0.0 | 0.0 |
| JAPAN | 0.0 | 0.0 | 0.0 | 3458.0 | 3458.0 | 0.0 | 0.0 |
| AUST-N ZEALAND | 0.0 | 0.0 | 0.0 | 3215.0 | 3215.0 | 0.0 | 0.0 |
| DEV-ED REGION | 0.0 | 0.0 | 0.0 | 100890.0 | 100890.0 | 0.0 | 0.0 |
| CENTRAL PLAN RG | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| LESS DEV-ED RG | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| WORLD TOTAL | 0.0 | 0.0 | 0.0 | 100890.0 | 100890.0 | 0.0 | 0.0 |

CONTINUED

TABLE 13--BASE 1970 QUANTITY DOCUMENTATION--CONTINUED

APRIL 1978

| REGION | PRODUCTION | PERCENT OF WORLD SUPPLY | FEED USAGE | FOOD & OTHER USAGE | TOTAL USAGE | IMPORTS | EXPORTS |
|--------|------------|-------------------------------|---------------|--------------------------|----------------|---------|---------|
|--------|------------|-------------------------------|---------------|--------------------------|----------------|---------|---------|

1,000
METRIC
TONS

PERCENT

- - - - - 1,000 METRIC TONS - - - - -

BUTTER UTILIZATION

| | | | | | | | |
|-----------------|--------|-------|-----|--------|--------|-------|-------|
| UNITED STATES | 516.0 | 17.3 | 0.0 | 500.0 | 500.0 | 0.0 | 19.5 |
| CANADA | 148.0 | 5.0 | 0.0 | 148.0 | 148.0 | 0.0 | 0.0 |
| EURO SIX | 1294.0 | 43.4 | 0.0 | 1197.0 | 1197.0 | 0.0 | 97.0 |
| EURO THREE | 274.0 | 9.2 | 0.0 | 563.0 | 563.0 | 289.0 | 0.0 |
| OTHER W EUROPE | 256.0 | 8.6 | 0.0 | 244.0 | 244.0 | 0.0 | 12.0 |
| JAPAN | 45.1 | 1.5 | 0.0 | 45.5 | 45.5 | 0.4 | 0.0 |
| AUST-N ZEALAND | 446.0 | 15.0 | 0.0 | 174.0 | 174.0 | 0.0 | 272.0 |
| REST OF WORLD | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| DEV-ED REGION | 2979.1 | 100.0 | 0.0 | 2871.5 | 2871.5 | 289.4 | 400.5 |
| CENTRAL PLAN RG | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| LESS DEV-ED RG | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| WORLD TOTAL | 2979.1 | 100.0 | 0.0 | 2871.5 | 2871.5 | 289.4 | 400.5 |

CHEESE UTILIZATION

| | | | | | | | |
|-----------------|--------|-------|-----|--------|--------|-------|-------|
| UNITED STATES | 993.0 | 25.8 | 0.0 | 1063.0 | 1063.0 | 55.0 | 0.0 |
| CANADA | 101.0 | 2.6 | 0.0 | 111.0 | 111.0 | 10.0 | 0.0 |
| EURO SIX | 1859.0 | 48.2 | 0.0 | 1832.0 | 1832.0 | 0.0 | 27.0 |
| EURO THREE | 281.0 | 7.3 | 0.0 | 357.0 | 357.0 | 76.0 | 0.0 |
| OTHER W EUROPE | 433.0 | 11.2 | 0.0 | 370.0 | 370.0 | 0.0 | 63.0 |
| JAPAN | 9.8 | 0.3 | 0.0 | 42.9 | 42.9 | 33.1 | 0.0 |
| AUST-N ZEALAND | 178.0 | 4.6 | 0.0 | 60.0 | 60.0 | 0.0 | 118.0 |
| DEV-ED REGION | 3854.8 | 100.0 | 0.0 | 3835.9 | 3835.9 | 174.1 | 208.0 |
| CENTRAL PLAN RG | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| LESS DEV-ED RG | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| WORLD TOTAL | 3854.8 | 100.0 | 0.0 | 3835.9 | 3835.9 | 174.1 | 208.0 |

CONTINUED

TABLE 13--BASE 1970 QUANTITY DOCUMENTATION--CONTINUED

APRIL 1978

TOTAL MEAT UTILIZATION

| REGION | PRODUCTION 1,000 METRIC TONS | PERCENT OF WORLD SUPPLY PERCENT | FEED USAGE | FOOD & OTHER USAGE | TOTAL USAGE | IMPORTS | EXPORTS |
|------------------|---------------------------------------|--|---------------|--------------------------|----------------|-----------|-----------------------------|
| | | | | | | - - - - - | 1,000 METRIC TONS - - - - - |
| 72 UNITED STATES | 21199.0 | 29.4 | 0.0 | 21904.0 | 21904.0 | 904.0 | 64.0 |
| CANADA | 1911.0 | 2.6 | 0.0 | 1928.0 | 1928.0 | 44.0 | 13.0 |
| EURO SIX | 11592.0 | 16.1 | 0.0 | 11973.0 | 11973.0 | 448.0 | 66.0 |
| EURO THREE | 4125.0 | 5.7 | 0.0 | 4627.0 | 4627.0 | 543.0 | 41.0 |
| OTHER W EUROPE | 3360.0 | 4.7 | 0.0 | 3631.0 | 3631.0 | 267.0 | 8.0 |
| JAPAN | 1352.0 | 1.9 | 0.0 | 1614.0 | 1614.0 | 253.0 | 0.0 |
| AUST-N ZEALAND | 3068.0 | 4.3 | 0.0 | 1616.0 | 1616.0 | 0.0 | 1449.0 |
| EAST EUROPE | 5067.0 | 7.0 | 0.0 | 4925.0 | 4925.0 | 0.0 | 142.0 |
| SOVIET UNION | 5107.0 | 7.1 | 0.0 | 5058.0 | 5058.0 | 0.0 | 49.0 |
| CHINA | 8863.0 | 12.3 | 0.0 | 8720.0 | 8720.0 | 0.0 | 43.0 |
| MIDDLE AMERICA | 1181.0 | 1.6 | 0.0 | 1030.0 | 1030.0 | 0.0 | 151.0 |
| BRAZIL | 2443.0 | 3.4 | 0.0 | 2315.0 | 2315.0 | 0.0 | 128.0 |
| ARGENTINA | 2907.0 | 4.0 | 0.0 | 2217.0 | 2217.0 | 0.0 | 687.0 |
| REST OF WORLD | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| DEV-ED REGION | 46617.0 | 64.6 | 0.0 | 47293.0 | 47293.0 | 2459.0 | 1641.0 |
| CENTRAL PLAN RG | 19037.0 | 26.4 | 0.0 | 18703.0 | 18703.0 | 0.0 | 234.0 |
| LESS DEV-ED RG | 6531.0 | 9.0 | 0.0 | 5562.0 | 5562.0 | 0.0 | 966.0 |
| WORLD TOTAL | 72185.0 | 100.0 | 0.0 | 71558.0 | 71558.0 | 2459.0 | 2841.0 |

-CONTINUED

TABLE 13--BASE 1970 QUANTITY DOCUMENTATION--CONTINUED

APRIL 1978

BEEF AND VEAL UTILIZATION

| REGION | PRODUCTION 1,000 METRIC TONS | PERCENT OF WORLD SUPPLY | FEED USAGE | FOOD & OTHER USAGE | TOTAL USAGE | IMPORTS | EXPORTS |
|--------|---------------------------------------|-------------------------------|---------------|--------------------------|----------------|---------------------------------------|---------|
| | | | | | | - - - - - 1,000 METRIC TONS - - - - - | |
| 73 | UNITED STATES | 10863.0 | 31.9 | 0.0 | 10793.0 | 10793.0 | 0.0 |
| | CANADA | 881.0 | 2.8 | 0.0 | 912.0 | 912.0 | 0.0 |
| | EURO SIX | 4416.0 | 14.0 | 0.0 | 4828.0 | 4828.0 | 0.0 |
| | EURO THREE | 1334.0 | 4.2 | 0.0 | 1522.0 | 1522.0 | 0.0 |
| | OTHER W EUROPE | 1060.0 | 3.4 | 0.0 | 1250.0 | 1250.0 | 0.0 |
| | JAPAN | 251.0 | 0.8 | 0.0 | 293.0 | 293.0 | 0.0 |
| | AUST-N ZEALAND | 1385.0 | 4.4 | 0.0 | 654.0 | 654.0 | 729.0 |
| | EAST EUROPE | 1852.0 | 5.9 | 0.0 | 1761.0 | 1761.0 | 91.0 |
| | SOVIET UNION | 5107.0 | 16.2 | 0.0 | 5058.0 | 5058.0 | 49.0 |
| | MIDDLE AMERICA | 843.0 | 2.7 | 0.0 | 692.0 | 692.0 | 151.0 |
| | BRAZIL | 1832.0 | 5.8 | 0.0 | 1795.0 | 1795.0 | 127.0 |
| | ARGENTINA | 2503.0 | 7.9 | 0.0 | 1865.0 | 1865.0 | 635.0 |
| | REST OF WORLD | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | DEV-ED REGION | 19390.0 | 61.5 | 0.0 | 20252.0 | 20252.0 | 729.0 |
| | CENTRAL PLAN RG | 6959.0 | 22.1 | 0.0 | 6819.0 | 6819.0 | 148.0 |
| | LESS DEV-ED RG | 5178.0 | 16.4 | 0.0 | 4262.0 | 4262.0 | 913.0 |
| | WORLD TOTAL | 31527.0 | 100.0 | 0.0 | 31333.0 | 31333.0 | 1782.0 |

CONTINUED

TABLE 13--BASE 1970 QUANTITY DOCUMENTATION--CONTINUED

APRIL 1978

PORK UTILIZATION

| REGION | PRODUCTION 1,000 METRIC TONS | PERCENT OF WORLD SUPPLY | FEED USAGE | FOOD & OTHER USAGE | TOTAL USAGE | IMPORTS | EXPORTS |
|-------------------------------|---------------------------------------|-------------------------------|---------------|--------------------------|----------------|---------|---------|
| ----- 1,000 METRIC TONS ----- | | | | | | | |
| UNITED STATES | 6227.0 | 21.2 | 0.0 | 6325.0 | 6325.0 | 109.0 | 0.0 |
| CANADA | 601.0 | 2.1 | 0.0 | 588.0 | 588.0 | 0.0 | 12.0 |
| EURO SIX | 5061.0 | 17.3 | 0.0 | 4997.0 | 4997.0 | 0.0 | 64.0 |
| EURO THREE | 1838.0 | 6.3 | 0.0 | 1852.0 | 1852.0 | 14.0 | 0.0 |
| OTHER W EUROPE | 1493.0 | 5.1 | 0.0 | 1485.0 | 1485.0 | 0.0 | 8.0 |
| JAPAN | 635.0 | 2.2 | 0.0 | 667.0 | 667.0 | 33.0 | 3.0 |
| AUST-N ZEALAND | 212.0 | 0.7 | 0.0 | 207.0 | 207.0 | 0.0 | 4.0 |
| EAST EUROPE | 3215.0 | 11.0 | 0.0 | 3164.0 | 3164.0 | 0.0 | 51.0 |
| CHINA | 8863.0 | 30.2 | 0.0 | 8720.0 | 8720.0 | 0.0 | 43.0 |
| MIDDLE AMERICA | 338.0 | 1.2 | 0.0 | 338.0 | 338.0 | 0.0 | 0.0 |
| BRAZIL | 611.0 | 2.1 | 0.0 | 610.0 | 610.0 | 0.0 | 1.0 |
| ARGENTINA | 221.0 | 0.8 | 0.0 | 215.0 | 215.0 | 0.0 | 6.0 |
| REST OF WORLD | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| DEV-ED REGION | 16067.0 | 54.8 | 0.0 | 16121.0 | 16121.0 | 156.0 | 88.0 |
| CENTRAL PLAN RG | 12078.0 | 41.2 | 0.0 | 11884.0 | 11884.0 | 0.0 | 94.0 |
| LESS DEV-ED RG | 1170.0 | 4.0 | 0.0 | 1163.0 | 1163.0 | 0.0 | 7.0 |
| WORLD TOTAL | 29315.0 | 100.0 | 0.0 | 29168.0 | 29168.0 | 156.0 | 189.0 |

CONTINUED

APRIL 1978

TABLE 13--BASE 1970 QUANTITY DOCUMENTATION--CONTINUED

POULTRY UTILIZATION

| REGION | PRODUCTION 1,000 METRIC TONS | PERCENT OF WORLD SUPPLY PERCENT | FEED USAGE | FOOD & OTHER USAGE | TOTAL USAGE 1,000 METRIC TONS | IMPORTS | EXPORTS |
|-----------------|---------------------------------------|--|---------------|--------------------------|-------------------------------------|---------|---------|
| UNITED STATES | 4659.0 | 52.6 | 0.0 | 4483.0 | 4483.0 | 0.0 | 64.0 |
| CANADA | 429.0 | 4.8 | 0.0 | 428.0 | 428.0 | 0.0 | 1.0 |
| EURO SIX | 1920.0 | 21.7 | 0.0 | 1917.0 | 1917.0 | 0.0 | 2.0 |
| 'EURO THREE | 686.0 | 7.7 | 0.0 | 645.0 | 645.0 | 0.0 | 41.0 |
| OTHER W EUROPE | 534.0 | 6.0 | 0.0 | 576.0 | 576.0 | 42.0 | 0.0 |
| JAPAN | 475.0 | 5.4 | 0.0 | 489.0 | 489.0 | 14.0 | 0.0 |
| AUST-N ZEALAND | 153.0 | 1.7 | 0.0 | 151.0 | 151.0 | 0.0 | 2.0 |
| DEV-ED REGION | 8856.0 | 100.0 | 0.0 | 8689.0 | 8689.0 | 56.0 | 110.0 |
| CENTRAL PLAN RG | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| LESS DEV-ED RG | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| WORLD TOTAL | 8856.0 | 100.0 | 0.0 | 8689.0 | 8689.0 | 56.0 | 110.0 |

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TABLE 13--BASE 1970 QUANTITY DOCUMENTATION--CONTINUED

APRIL 1978

LAMB AND MUTTON UTILIZATION

| REGION | PRODUCTION 1,000 METRIC TONS | PERCENT OF WORLD SUPPLY PERCENT | FEED USAGE | FOOD & OTHER USAGE | TOTAL USAGE | IMPORTS | EXPORTS |
|---------------------------------------|---------------------------------------|--|---------------|--------------------------|----------------|---------|---------|
| - - - - - 1,000 METRIC TONS - - - - - | | | | | | | |
| UNITED STATES | 250.0 | 10.1 | 0.0 | 303.0 | 303.0 | 54.0 | 0.0 |
| EURO SIX | 195.0 | 7.8 | 0.0 | 231.0 | 231.0 | 36.0 | 0.0 |
| EURO THREE | 267.0 | 10.7 | 0.0 | 608.0 | 608.0 | 341.0 | 0.0 |
| OTHER W EUROPE | 273.0 | 11.0 | 0.0 | 320.0 | 320.0 | 47.0 | 0.0 |
| JAPAN | 1.0 | 0.0 | 0.0 | 165.0 | 165.0 | 164.0 | 0.0 |
| AUST-N ZEALAND | 1318.0 | 53.0 | 0.0 | 604.0 | 604.0 | 0.0 | 714.0 |
| ARGENTINA | 183.0 | 7.4 | 0.0 | 137.0 | 137.0 | 0.0 | 46.0 |
| REST OF WORLD | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| DEV-ED REGION | 2304.0 | 92.6 | 0.0 | 2231.0 | 2231.0 | 642.0 | 714.0 |
| CENTRAL PLAN RG | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| LESS DEV-ED RG | 183.0 | 7.4 | 0.0 | 137.0 | 137.0 | 0.0 | 46.0 |
| WORLD TOTAL | 2487.0 | 100.0 | 0.0 | 2368.0 | 2368.0 | 642.0 | 760.0 |

NOTE: TOTAL GRAIN IS A SUMMATION OF GRAIN CATEGORIES INCLUDED BY REGION IN THE GOL MODEL, NAMELY, COARSE GRAINS, WHEAT, AND RICE, WHERE EXPLICITLY MODELED. TOTAL MEAT IS A SUMMATION OF MEAT CATEGORIES INCLUDED BY REGION IN THE GOL MODEL, NAMELY, BEEF AND VEAL, PORK, POULTRY, LAMB AND MUTTON, AND OTHER MEAT, WHERE EXPLICITLY MODELED.

SOURCE: FOR GRAINS AND OILMEAL, FOREIGN AGRICULTURAL SERVICE AND ECONOMICS, STATISTICS, AND COOPERATIVES SERVICE, USDA. FOR DAIRY AND MEAT, FOREIGN AGRICULTURAL SERVICE AND ECONOMICS, STATISTICS, AND COOPERATIVES SERVICE, USDA; ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT; AND FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS.

Table 14--Base 1970 price documentation

Price variables by region and commodity in the 1970 base. Prices are local currency units per metric ton of commodity and are for 1970 or a span of years centered on 1970. They are deflated by a local consumers price index (1970 = 1.0) and, where expressed in another currency equivalent, are converted by 1970 average foreign exchange rates. Footnotes are at the end of the table.

| Region and commodity | | Price | | | | Description, series title or identification | Source or reference |
|----------------------|----------|---------|----------|-------|--|---|---------------------|
| | Variable | Units | Currency | Notes | | | |
| | code | : | : | : | : | : | : |
| <u>United States</u> | | | | | | | |
| Beef | PDB | 2198.00 | US\$ | a | Beef, Choice, ave. | LMSTAT | |
| | PSB | 672.00 | US\$ | a | Slaughter steers, Choice, Omaha | LMSTAT | |
| | PTB | 1289.00 | US\$ | a | Cow beef, imported, 90% lean | NAPROV | |
| Pork | PDP | 1640.00 | US\$ | a | Pork, U.S. ave. retail | LMSTAT | |
| | PSP | 470.00 | US\$ | a | Slaughter hogs: Packer & shipper, barrows & gilts, Omaha | LMSTAT | |
| | PTP | 1564.00 | US\$ | a | Hams, shoulders, canned, import unit value, ave. U.S. | SRS | |
| Poultry | PDZ | 952.00 | US\$ | a | Retail of composite of broilers and turkeys | PESTAT | |
| | PSZ | 633.00 | US\$ | a | Composite of broilers (Grade A) & turkeys (Ready to cook) | PESTAT | |
| Butter | PDLB | 1518.00 | US\$ | a | Ave. wholesale, 92 score, Grade A, Chicago | DAIRYG | |
| | PSLB | 103.40 | US\$ | a | Weighted ave. price for mfg., grade milk | DAIRYG | |
| Milk | PDLM | 133.75 | US\$ | a | Ave. price for milk eligible for fluid use (Grade A) | DAIRYG | |
| | PSL | 126.18 | US\$ | a | Weighted ave. price for Mfg. grade and Grade A milk eligible for fluid use | DAIRYG | |
| Cheese | PDLC | 1206.00 | US\$ | | | | |
| | PSLC | 103.40 | US\$ | | | | |
| | PTLC | 1392.00 | US\$ | | | | |

Continued

Table 14--Base 1970 price documentation--Continued

| Region and commodity | Variable code | Units | Currency | Notes | Description, series title or identification | Source or reference |
|----------------------------------|---------------|---------|----------|-------|--|---------------------|
| <u>United States (Continued)</u> | | | | | | |
| Wheat | PDW | 57.00 | US\$ | a | Kansas City No. 2 Hard Winter | GMNEWS |
| | PTW | 58.73 | US\$ | a | Gulf ports, No. 2 Hard Red Winter | WHSIT |
| Coarse grain | PDC | 52.76 | US\$ | a | Corn, No. 2 yellow, Chicago | GMNEWS |
| | PTC | 57.08 | US\$ | a | Corn, No. 2 Yellow Gulf ports | FESIT |
| Rice | PDR | 515.00 | US\$ | a | Long grain, retail, U.S. ave. price in leading cities | RISIT |
| | PTR | 176.93 | US\$ | a | Milled rice, U.S. NATO 2, fob mills, ave. of Southern head rice at milling centers | RISIT |
| Oilmeal | PDK | 85.15 | US\$ | a | Soybean meal, fob Decatur, 44% protein | FOSIT |
| | PTK | 98.30 | US\$ | a | Soybean meal, estimated fob export price for soybean meal + fob margin | FOSIT |
| | PTS | 114.9 | US\$ | a | Soybeans #2, fob Gulf | |
| <u>Canada</u> | | | | | | |
| Beef | PDB | 680.00 | CAN | a | Beef cattle, good steers | CNSTAT |
| | PSB | 680.00 | CAN | a | Idem. | CNSTAT |
| | PTB | 680.00 | CAN | a | Idem. | CNSTAT |
| Pork | PDP | 692.00 | CAN | a | Hogs, wt. ave. dressed | CNSTAT |
| | PSP | 692.00 | CAN | a | Idem. | CNSTAT |
| | PTP | 692.00 | CAN | a | Idem. | CNSTAT |
| Poultry | PDZ | 442.00 | CAN | a | Broilers, producers livewt. | FAOPROD |
| | PSZ | 442.00 | CAN | a | Idem. | FAOPROD |
| Butter | PDLB | 1444.00 | CAN | a | Bulk delivered, dairy to Wholesale, Montreal | DAPROD |
| | PSLB | 103.40 | CAN | a | Import unit value | FAOTRADE |
| | PTLB | 727.00 | CAN | a | | |

Continued

Table 14--Base 1970 price documentation--Continued

| Region and commodity | | | Price | | Description, series title or identification | Source or reference |
|---------------------------------|-------------------|---------|------------|---------|--|---------------------|
| | : Variable : code | : Units | : Currency | : Notes | | |
| <u>Canada (Continued)</u> | | | | | | |
| Milk | PDLM | 142.27 | CAN | a | Milk for liquid consump. | CNAGPOL |
| | PSL | 120.81 | CAN | a | Wt. ave. returns to producers for liquid and mfg. milk | CNAGPOL |
| Cheese | PDLC | 1144.00 | CAN | a | White cheddar, fob factory, Quebec | DAPROD |
| | PSLC | 1144.00 | CAN | a | Idem. | DAPROD |
| | PTLC | 1231.00 | CAN | a | Import unit value | FAOTRADE |
| Wheat | PDW | 63.33 | CAN | a | Board price, domestic use & export, Grade 1 - 2 | CNGTQ |
| | PSW | 49.72 | US\$ | a | Wt. ave. producer price all grades | CNSTAT |
| | PTW | 63.33 | CAN | a | Same as CNPDW | CNGTQ |
| Coarse grain | PDC | 52.99 | CAN | a | Board price for barley, export & domestic use | CNGTQ |
| | PSC | 46.35 | US\$ | a | Board price for barley | CNGTQ |
| | PTC | 52.99 | US\$ | a | Same as CNPDC | CNGTQ |
| Rice | PDR | 233.00 | CAN | a | Milled rice | WRICE |
| | PTR | 233.00 | CAN | a | Idem. | WRICE |
| Oilseeds | PDK | 118.63 | CAN | a | Wholesale, Unit value Oilmeal | FAO |
| | PSK | 101.30 | CAN | a | Soybeans | NTRAP |
| | PTK | 118.63 | CAN | a | Same as CNPDK | FAO |
| <u>European Community--EC-6</u> | | | | | | |
| Beef | PDB | 1253.00 | UA | a | Beef, carcass wt., 6 markets, W. Germany | AGWIRT |
| | FSB | 778.00 | UA | a | Cologne bulls, livewt. Class A--Excludes value added tax | GRSTAT |
| | PTB | 795.00 | UA | a | Demand price less variable levy (249) plus margin (209) | |

Continued

Table 14--Base 1970 price documentation--Continued

| Region and commodity | Variable code | Units | Currency | Notes | Description, series title or identification | Source or reference |
|----------------------|---------------|-------|----------|-------|---|---------------------|
| | | | | | | |

EC-6 (Continued)

| | | | | | | |
|--------------|------|---------|----|---|---|---------|
| Pork | PDP | 883.00 | UA | a | Pork sides, carcass wt. purchase price of slaughter halves | AGWIRT |
| | PSP | 754.00 | UA | a | Cologne fed pigs, 100-119 kg livewt. Class C excl. value added tax | GRSTAT |
| | PTP | 586.00 | UA | a | Demand price minus variable levy (297 = ave. of loin (339) and shoulder (255)) | |
| Poultry | PDZ | 699.00 | UA | a | Slaughter chickens, wholesale, Hamburg; up to 1972 fresh, delivered at retail store | FAOMB |
| | PSZ | 490.00 | UA | a | Chickens for roasting, livewt., Belgium-Deynze market | FRSTAT |
| Mutton | PDV | 972.00 | UA | a | Fat sheep 18 mo. old livewt., Netherlands | 'OECDAG |
| | PSV | 972.00 | UA | a | Idem. | CLJFERS |
| | PTV | 698.00 | UA | a | Demand price less marketing margin | |
| Butter | PDLB | 1746.00 | UA | a | EC Intervention Price | FACTS |
| Cheese | PDLC | 1448.00 | UA | a | Wholesale, Emmenthaler, Paris | DAPROD |
| Milk | PDLM | 103.00 | UA | a | EC Target Price for 3.7% butterfat milk | FACTS |
| | PSL | 103.00 | UA | a | Idem. | FACTS |
| Wheat | PDW | 100.32 | UA | a | Wheat, wholesale, Duisberg | MARCHES |
| | PSW | 97.02 | UA | a | Ble tendre, wholesale, France | FRSTAT |
| | PTW | 65.20 | UA | a | Import price cif Rotterdam for Hardwinter No. 2 13% protein | BOURSE |
| Coarse grain | PDC | 91.90 | UA | a | Barley, producers price Germany | ECE |

Continued

Table 14--Base 1970 price documentation--Continued

| Region and commodity | Variable | Code | Price | Units | Currency | Notes | Description, series title or identification | Source or reference |
|---------------------------------|----------|--------|-------|-------|--|-------|---|---------------------|
| <u>EC-6 (Continued)</u> | | | | | | | | |
| Coarse grain (Continued) | PSC | 75.48 | UA | a | Barley, purchases by agricultural co-ops, France | | Eurostat | |
| Rice | PTC | 61.81 | UA | a | Corn, cif Rotterdam | | OECDTR | |
| | PDR | 334.00 | UA | a | PTR (154.50) plus levy | | | |
| | PSR | 179.84 | UA | a | Milled, Common Originario type, Milan | | WRICE | |
| | PTR | 154.50 | UA | a | Import price for Thai long grain, milled, Germany | | STATBUND, PRAUSS | |
| Oilmeal | PDK | 101.97 | UA | a | Same as C6PTK | | | |
| | PTK | 101.97 | UA | a | US Bulk 44% protein cif European ports | | | |
| <u>European Community--EC-3</u> | | | | | | | | |
| Beef | PDB | 843.00 | UA | a | Same as C3PSB | | RMEATR | |
| | PSB | 843.00 | UA | a | Bullock & Heifer sides Wholesale, Liverpool (about like US Good) | | RMEATR | |
| Pork | PDP | 836.00 | UA | a | Imported Danish bacon London (Smithfield) | | FAOMB | |
| | PSP | 836.00 | UA | a | Idem. | | FAOMB | |
| Poultry | PDZ | 560.00 | UA | a | Broilers, Good Quality wholesale slaughter, 4-market ave., England | | FAOMB, FAOPROD | |
| | PSZ | 560.00 | UA | a | Idem. | | FAOMB, FAOPROD | |
| Mutton | PDV | 698.00 | UA | a | Same as C3PSV | | FAOMB, FAOPROD | |
| | PSV | 698.00 | UA | a | New Zealand frozen carcasses, London (Smithfield) | | FAOMB, FAOPROD | |
| Butter | PDLB | 869.00 | UA | a | UK home produced, London Provincial Exchange | | DAPROD | |
| Cheese | PDLC | 804.00 | UA | a | Cheddar, white, English Factory Cheese | | DAPROD | |

Continued

Table 14--Base 1970 price documentation--Continued

| Region and commodity | Variable: | Units | Currency | Notes | Description, series title or identification | Source or reference |
|---|-----------|---------|----------|-------|--|---------------------|
| <u>European Community--EC-3 (Continued)</u> | | | | | | |
| Milk | PDLM | 98.00 | UA | a | Ave. return to Dairy Board, all milk, England | FACTS |
| | PSL | 95.00 | UA | a | UK producer price, natural fat content | MARCHES |
| Wheat | PDW | 72.47 | UA | a | Wheat import prices, UK No. 2 Hard/Dark Hard Winter, 13.5% protein | IWS |
| | PSW | 75.83 | UA | a | UK guaranteed price | GUARD |
| Coarse grain | PDC | 61.22 | UA | a | UK market price for barley | GUARD |
| | PSC | 68.93 | UA | a | UK barley price | GUARD |
| Rice | PDR | 166.00 | UA | a | Import unit value | FAO |
| Oilmeal | PDK | 106.97 | UA | a | Soybean meal import price, cif European ports, US Bulk 44% protein | |
| | PSK | 106.97 | UA | a | C6PTK plus 5.00 | |
| <u>Other Western Europe</u> | | | | | | |
| Beef | PDB | 1253.00 | UA | a | Same as C6PDB | |
| | PSB | 778.00 | UA | a | Same as C6PSB | |
| Pork | PDP | 883.00 | UA | a | Same as C6PDP | |
| | PSP | 754.00 | UA | a | Same as C6PSP | |
| Poultry | PDZ | 699.00 | UA | a | Same as C6PDZ | |
| | PSZ | 490.00 | UA | a | Same as C6PSZ | |
| Mutton | PDV | 972.00 | UA | a | Same as C6PDV | |
| | PSV | 972.00 | UA | a | Same as C6PSV | |
| Butter | PDLB | 1785.00 | DE | b | Ex-dairy price, Finland | ECE, REVAG |
| | PTLB | 1785.00 | DE | b | Idem. | ECE, REVAG |

Continued

Table 14--Base 1970 price documentation--Continued

| Region and commodity | Variable code | Units | Currency | Notes | Description, series title or identification | Source or reference |
|---|---------------|---------|----------|-------|--|---------------------|
| <u>Other Western Europe (Continued)</u> | | | | | | |
| Cheese | PDLC | 1496.00 | DE | b | Pasteurized cow milk, wholesale, Bern, Switz. | ECE, REVAG |
| | PSLC | 1496.00 | DE | b | Idem. | ECE, REVAG |
| | PTLC | 1555.00 | DE | a | Unit value, Switz. | FAOTRADE |
| Milk | PDLM | 212.00 | DE | a | Pasteurized cow milk, wholesale, Bern, Switz. | FAS |
| | PSL | 119.44 | DE | a | Producer price, Wt. Ave. | FAO |
| Wheat | PDW | 104.16 | DE | a | Wt. ave. wholesale price OWE countries, by ERS | ECE, ERS |
| | PSW | 97.73 | DE | a | Wt. ave producer price OWE countries, by ERS | ECE, ERS |
| Coarse grain | PDC | 79.00 | DE | a | Barley and corn, wt. ave. wholesale, OWE countries calculated by ERS | ECE, ERS |
| | PSC | 91.57 | DE | a | Barley & corn, wt. ave. producer price, OWE countries, by ERS | ECE, ERS |
| Rice | PDR | 162.00 | DE | a | Same as WEPTR | |
| | PSR | 103.00 | DE | a | Wt. ave. producer price, OWE countries, report. by ECE, calc. by ERS | ECE, ERS |
| | PTR | 162.00 | DE | a | Wt. ave. import unit value reptd. by FAO, calc. by ERS | FAO, ERS |
| Oilmeal | PDK | 106.97 | DE | a | C6PDK plus 5.00 | |
| | PSK | 106.97 | DE | a | C6PTK plus 5.00 | |
| <u>Japan</u> | | | | | | |
| Beef | PDB | 1390.00 | YTH | a | Retail, Medium grade, Tokyo | JPRICE |
| | PSB | 427.00 | YTH | a | Steers, producer live- weight | JPAGST |
| | PTB | 928.00 | US\$ | a | Import unit value | JPTRADE |

Continued

Table 14--Base 1970 price documentation--Continued

| Region and commodity | | Price | | | | Description, series title or identification | Source or reference |
|-----------------------------|-----------|---------|-------|----------|---|---|---------------------|
| | Variable: | code | Units | Currency | Notes | | |
| <u>Japan</u> (Continued) | | | | | | | |
| Pork | PDP | 938.00 | YTH | a | Retail, Medium grade | JPRICE | |
| | PSP | 267.00 | YTH | a | Producer price, livewt. | JPAGST | |
| | PTP | 1186.00 | US\$ | a | Import unit value | JPTRADE | |
| Poultry | PDZ | 760.00 | YTH | a | Retail, Medium grade | JPRICE | |
| | PSZ | 192.00 | YTH | a | Broilers, producer price | JPAGST | |
| Mutton | PDV | 152.43 | YTH | a | Import unit value | JPTRADE | |
| | PTV | 426.00 | US\$ | a | Import unit value | JPTRADE | |
| Butter | PDLB | 658.00 | YTH | a | Wholesale price | JPINAN | |
| | PTLB | 688.00 | US\$ | a | Import unit value | JPTRADE | |
| Cheese | PDLC | 610.00 | YTH | a | Wholesale price | JPINAN | |
| | PTLC | 609.00 | US\$ | a | Import unit value | JPTRADE | |
| Milk | PDLM | 131.61 | YTH | a | Retail in 180 cc bottles, Tokyo | JPRICE | |
| | PSL | 48.30 | YTH | a | Ave. farm gate price for all milk | JPAGST | |
| Wheat | PDW | 36.58 | YTH | a | Wheat for food only wholesale, Japan | JPAGST | |
| | PSW | 58.60 | YTH | a | Wheat producer price | JPAGST | |
| | PTW | 65.77 | US\$ | a | Ave. cif prices, No. 2 Western White | IWS | |
| Coarse grain | PDC | 25.13 | YTH | a | Coarse grain for feed only, wholesale | STAJAP | |
| | PSC | 66.03 | YTH | a | Barley producer price | JPAGST | |
| | PTC | 69.16 | US\$ | a | | JPAGST | |
| Rice | PDR | 137.62 | YTH | a | Milled rice, wholesale ave. grades 1 to 4 | | |
| | PSR | 154.31 | YTH | a | Milled rice, farm, ave. grades 1 to 4 | | |
| Soybeans | PDS | 41.59 | YTH | a | Ave. unit value | FAOTRADE | |
| | PSS | 41.59 | YTH | a | Idem. | | |

Continued

Table 14--Base price documentation--Continued

| Region and commodity | | Price | | | | Description, series title or identification | Source or reference |
|------------------------------|---------|----------|---------|----------|-------|--|---------------------|
| | | Variable | Units | Currency | Notes | | |
| | | code | : | : | : | : | : |
| <u>Japan</u> (Continued) | | | | | | | |
| | Oilmeal | PDK | 51.99 | YTH | a | Av. price paid by feed manufacturers | |
| | | PSK | 51.99 | YTH | a | Idem. | |
| | | PTK | 145.39 | US\$ | a | Export price | JPTRADE |
| <u>Australia-New Zealand</u> | | | | | | | |
| | Beef | PDB | 597.00 | AD | a | Ox or heifer 650-700 export quality Sydney (Homebush) | AZAGEC |
| | | PSB | 597.00 | AD | a | Idem. | AZAGEC |
| | | PTB | 1039.00 | US\$ | a | Export unit value to US (USPTB minus margin 249) | AZAGEC |
| | Pork | PDP | 552.00 | AD | a | Hogs 140-150 lb. Sydney (Homebush) | AZAGEC |
| | | PSP | 552.00 | AD | a | Idem. | AZAGEC |
| | Mutton | PDV | 368.00 | AD | a | Lamb 29-36 lb. 1st & 2nd export quality, dressed wt. basis | AZAGEC |
| | | PSV | 368.00 | AD | a | Idem. | AZAGEC |
| | | PTV | 410.30 | US\$ | a | | |
| | Butter | PDLB | 1070.00 | AD | a | Choicest Bulk, wholesale Australia | |
| | | PSLB | 41.25 | AD | | | |
| | | PTLB | 698.00 | US\$ | a | Export unit value, New Zealand | |
| | Cheese | PDLC | 661.00 | AD | a | Choicest Cheddar cheese wholesale, Australia | |
| | | PSLC | 458.00 | AD | a | Purchase price | NZDB |
| | | PTLC | 614.00 | US\$ | a | Export unit value | |
| | Milk | PDLIM | 97.59 | AD | a | Fluid milk, unit wholesale value | |
| | | PSL | 41.24 | AD | a | Producers price of milk equivalent at dairy | |

Continued

Table 14--Base price documentation--Continued

| Region and commodity | | Price | | | | Description, series title or identification | Source or reference |
|--|---------------|-------|----------|-------|---|---|---------------------|
| | Variable code | Units | Currency | Notes | | | |
| <u>Australia-New Zealand (Continued)</u> | | | | | | | |
| | Wheat | PDW | 56.24 | AD | a | Wheat Board selling price | IWS |
| | | PSW | 54.53 | AD | a | Supply price | IWS |
| | | PTW | 55.16 | US\$ | a | Export price, Oceania | IWS |
| | Coarse grain | PDC | 33.55 | AD | a | Barley, Australian Wheat Board | AZWB |
| | | PSC | 33.55 | AD | a | Idem. | AZWB |
| | | PTC | 40.36 | US\$ | a | Barley | AZWB |
| | Rice | PDR | 148.00 | AD | a | | WRICE |
| | | PSR | 51.00 | AD | a | | WRICE |
| | | PTR | 164.99 | US\$ | a | | WRICE |
| | Oilmeal | PDK | 131.10 | AD | a | Soybean meal | |
| | | PSK | 131.10 | AD | a | Idem. | |
| | | PTK | 112.00 | US\$ | | | |
| <u>Argentina</u> | | | | | | | |
| | Beef | PDB | 2347.00 | NP | a | Steers (novillos), livewt. Buenos Aires (Liniers) | CARNES |
| | | PSB | 1071.00 | NP | a | Idem. | CARNES |
| | | PTB | 1100.00 | US\$ | a | Dollar equiv of PDB | CARNES |
| | Pork | PDP | 1369.00 | NP | a | Hogs, Avellaneda | CARNES |
| | | PSP | 1369.00 | NP | a | Idem. | CARNES |
| | Poultry | PDZ | 1246.00 | NP | a | Broilers, producer price | CARNES, ERS |
| | | PSZ | 1246.00 | NP | a | Idem. | |
| | Mutton | PDV | 1697.00 | NP | a | Wholesale price, estimated by ERS | CARNES, ERS |
| | | PSV | 1697.00 | NP | a | Idem. | |
| | | PTV | 452.53 | US\$ | | | |

Continued

Table 14--Base price documentation--Continued

| Region and commodity | | Price | | | Description, series title or identification | Source or reference |
|--|---------------|--------|----------|-------|---|---------------------|
| | Variable code | Units | Currency | Notes | | |
| <u>Argentina</u> <u>(Continued)</u> | | | | | | |
| Wheat | PDW | 178.20 | NP | a | Miller, on wagon price Buenos Aires | BOLSA |
| | PSW | 178.20 | NP | a | Producer price same as ARPDW | BOLSA |
| | PTW | 58.67 | US\$ | a | No. 1 Hard, fob Buenos Aires | IWS |
| Coarse grain | PDC | 229.00 | NP | a | Corn, wholesale, on wagon, interior points | BOLSA |
| | PSC | 229.00 | NP | a | Producer, same as ARPDC | BOLSA |
| | PTC | 61.50 | US\$ | a | Argentine corn, import price, cif North Sea ports | IWS |
| Rice | PDR | 371.00 | NP | a | Same as ARPTR | |
| | PSR | 249.00 | NP | a | Farm price, ave. for all qualities | FAOPROD |
| | PTR | 98.93 | US\$ | a | Export unit value (con- verted) | GRANOS |
| Oilmeal | PDK | 243.00 | NP | a | Prices and margins. Ave. meal prices, wholesale, mostly sunflower and linseed meal | ERS |
| | PSK | 243.00 | NP | a | Idem. | |
| | PTK | 64.80 | US\$ | a | Idem. | |
| <u>Brazil</u> | | | | | | |
| Beef | PDB | 627.00 | DE | a | Same as BZPTB, carcass wt. | |
| | PSB | 627.00 | DE | a | Same as BZPTB | |
| | PTB | 627.00 | DE | a | BZPTB = .65USPTB - 210.85 | |
| Pork | PDP | 660.00 | DE | a | Same as BZPSP, carcass wt. | |
| | PSP | 660.00 | DE | a | BZPSP = 1.0526 BZPSB | |
| Wheat | PDW | 97.63 | DE | a | Wheat, wholesale unit value | BRPROGN |
| | PSW | 107.28 | DE | a | Wheat, farm unit value | BRPROGN |
| | PTW | 72.76 | DE | a | Import unit value | BRPROGN |

Continued

Table 14--Base 1970 price documentation--Continued

| Region and commodity | Variable code | Price | | Description, series title or identification | Source or reference |
|-------------------------------------|---------------|----------|-------|---|---------------------|
| | Units | Currency | Notes | | |
| <u>Brazil</u> <u>(Continued)</u> | | | | | |
| Coarse grain | PDC | 51.60 | DE | a Corn, wholesale unit value | BRPROGN |
| | PSC | 36.93 | DE | a Corn, farm unit value | BRPROGN |
| | PTC | 58.94 | DE | a Import unit value | BRPROGN |
| Rice | PDR | 204.00 | DE | a Longgrain, retail | WRICE |
| | PSR | 90.00 | DE | a Producer | WRICE |
| | PTR | 111.00 | DE | a Export unit value | FAO |
| Oilmeal | PDK | 83.70 | DE | a Same as BZPTK | |
| | PSK | 68.16 | DE | a Producer price received by farmers | VARGAS, PREAG |
| | PTK | 83.70 | DE | a Export price as unit value | FAOPROD |
| <u>Middle America</u> | | | | | |
| Beef | PDB | 745.00 | DE | a Beef, carcass wt., wholesale | FAS |
| | PSB | 745.00 | DE | a Idem. | FAS |
| | PTB | 745.00 | DE | a Idem. | FAS |
| Pork | PDP | 956.00 | DE | a Pork, carcass wt. wholesale | FAS |
| | PSP | 956.00 | DE | a Idem. | FAS |
| | PTP | 956.00 | DE | a Idem. | FAS |
| Wheat | PDW | 117.80 | DE | a Support price, Mexico | MEXBANK |
| | PSW | 73.11 | DE | a Producer support price, Mexico | MEXBANK |
| | PTW | 68.02 | DE | a Import price, Mexico | MEXSTAT |
| Coarse grain | PCD | 87.78 | DE | a Corn, wholesale price, Mexico | MEXBANK |
| | PSC | 64.50 | DE | a Corn, supply price | MEXBANK |
| | PTC | 76.59 | DE | a Corn, import price | MEXBANK |

Continued

Table 14--Base 1970 price documentation--Continued

| Region and commodity | | Price | | Description, series title or identification | Source or reference |
|-----------------------------------|-----------------|---------|------------|---|---------------------|
| | : Variable code | : Units | : Currency | : Notes | |
| | : | : | : | : | : |
| <u>Middle America (Continued)</u> | | | | | |
| Rice | PDR | 228.00 | DE | a Same as MCPTR | |
| | PSR | 300.00 | DE | a Wholesale price | WRICE |
| | PTR | 228.00 | DE | a Import unit value | FAO |
| Oilmeal | PDK | 144.11 | DE | a Wholesale price, soybeans and meal | ERS |
| | PSK | 144.11 | DE | a Idem. | ERS |
| | PTK | 144.11 | DE | a Idem. | ERS |
| <u>Other South America</u> | | | | | |
| Wheat | PDW | 71.51 | DE | a Farm price, Chile | FAOMB |
| | PSW | 108.89 | DE | a Wholesale price, Chile | FAOMB |
| | PTW | 70.33 | DE | a Import unit value, Chile | FAOMB |
| Coarse grain | PDC | 57.93 | DE | a Corn, wholesale, Chile | FAOMB |
| | PSC | 73.97 | DE | a Corn, producer, Chile | FAOMB |
| | PTC | 60.29 | DE | a Corn, import price Chile | FAOMB |
| Rice | PDR | 242.00 | DE | a Retail, Colombia | WRICE |
| | PSR | 188.00 | DE | a Farm price, Peru | FAOPROD |
| | PTR | 242.00 | DE | a Import unit value | FAO |
| Oilmeal | PDK | 95.61 | DE | a Same as LAPTK | |
| | PSK | 95.61 | DE | a Same as LAPTK | |
| | PTK | 95.61 | DE | a Export price for soybeans and meal | ERS |
| <u>India</u> | | | | | |
| Wheat | PDW | 79.95 | DE | a Whole price, India | INDSTAT |
| | PSW | 101.40 | DE | a Producer price, India | INDSTAT |
| | PTW | 73.97 | DE | a Import unit value | INDSTAT |
| Coarse grain | PDC | 65.33 | DE | a Barley, wholesale | INDSTAT |
| | PSC | 65.33 | DE | a Idem. | INDSTAT |
| | PTC | 69.52 | DE | a Sorghum, import unit value | INDSTAT |

Continued

Table 14--Base 1970 price documentation--Continued

| Region and commodity | Variable code | Units | Currency | Notes | Description, series title or identification | Source or reference |
|-------------------------|---------------|--------|----------|-------|---|---------------------|
| <u>India</u> | | | | | | |
| Rice | PDR | 95.00 | DE | a | Retail, Good quality | WRICE |
| | PSR | 83.65 | DE | a | Farm, 2nd quality | WRICE |
| | PTR | 160.45 | DE | a | Export unit value | FAO |
| Oilmeal | PDK | 84.34 | DE | a | Same as NDPTK | |
| | PSK | 84.34 | DE | a | Same as NDPTK | |
| | PTK | 84.34 | DE | a | Peanut meal, export unit value | ERS |
| <u>Other South Asia</u> | | | | | | |
| Wheat | PDW | 107.00 | DE | a | Wholesale, Pakistan | PAKSTAT |
| | PSW | 95.52 | DE | a | Producer, Pakistan | PAKSTAT |
| | PTW | 73.97 | DE | a | Import price, India | PAKSTAT |
| Coarse grain | PDC | 92.39 | DE | a | Same as OSPSC | |
| | PSC | 92.39 | DE | a | Producer price, barley, Pakistan | PAKSTAT |
| | PTC | 69.52 | DE | a | Coarse grain ave. import price, Pakistan | PAKSTAT |
| Rice | PDR | 128.00 | DE | a | Retail, Bangladesh | BNGSTAT |
| | PSR | 88.00 | DE | a | Farm price, Pakistan | PAKSTAT |
| | PTR | 120.00 | DE | a | Import unit value | FAO |
| <u>Indonesia</u> | | | | | | |
| Wheat | PDW | 89.86 | DE | a | Same as DOPTW | |
| | PTW | 89.86 | DE | a | Import unit value | FAO |
| Coarse grain | PDC | 60.72 | DE | a | Corn, wholesale | FAO |
| | PSC | 76.79 | DE | a | Corn, producer | FAO |
| | PTC | 59.12 | DE | a | Corn, export price | FAO |
| Rice | PDR | 161.00 | DE | a | Same as DOPSR | |
| | PSR | 161.00 | DE | a | Farm price, Indonesia | WRICE |
| | PTR | 165.55 | DE | a | Import price, Indonesia | WRICE |
| Oilmeal | PDK | 55.65 | DE | a | Same as DOPTK | |
| | PSK | 55.65 | DE | a | Same as DOPTK | |
| | PTK | 55.65 | DE | a | Coconut meal, Indonesia-Phillipines | ERS |
| | | | | | | Continued |

Table 14--Base 1970 price documentation--Continued

| Region and commodity | | Price | | | Description, series title or identification | Source or reference |
|------------------------------|---------------|--------|----------|-------|---|---------------------|
| | Variable code | Units | Currency | Notes | | |
| <u>Thailand</u> | | | | | | |
| Wheat | PDW | 74.34 | DE | a | Same as THPTW | |
| | PTW | 74.34 | DE | a | Import unit value | THAIMB |
| Coarse grain | PDC | 56.23 | DE | a | Corn, wholesale, Bangkok | THAIMB |
| | PSC | 55.94 | DE | a | Corn, producer price, ave. | THAIMB |
| | PTC | 59.11 | DE | a | Export unit value, corn | FAO |
| Rice | PDR | 85.50 | DE | a | Milled, wholesale, 5% broken | THAIBD |
| | PSR | 80.00 | DE | a | Milled, ave. wholesale for No. 1 | THAIBD |
| | PTR | 153.00 | DE | a | Milled, 5% broken, white Govt.St. fob Bangkok | RISIT |
| <u>East Asia-High Income</u> | | | | | | |
| Wheat | PDW | 89.49 | DE | a | Wholesale price, Korea | KORAG |
| | PSW | 193.87 | DE | a | Producer price, Korea | KORAG |
| | PTW | 67.62 | DE | a | Import unit value, Regional | FAO |
| Coarse grain | PDC | 70.57 | DE | a | Barley, wholesale, Korea | FAOMB |
| | PSC | 192.68 | DE | a | Barley, producer price | FAO |
| | PTC | 68.20 | DE | a | Corn import price | FAO |
| Rice | PDR | 215.00 | DE | a | High Quality, retail | WRICE |
| | PSR | 182.35 | DE | a | High Quality, farm | WRICE |
| | PTR | 154.00 | DE | a | Import unit value | FAO |
| Oilmeal | PDK | 108.51 | DE | a | Same as EHPTK | |
| | PSK | 108.51 | DE | a | Same as EHPTK | |
| | PTK | 108.51 | DE | a | Soybean meal, import unit value | ERS |

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ALTERNATIVE FUTURES FOR WORLD FOOD IN: 1985. VOLUME 3, WORLD GOL MODEL STRUCTURE AND
EQUATIONS. (Foreign Agricultural Economic Report). / Anthony Rojko (and others).
Washington, DC: Economic Research Service. Jun. 1978.
(NAL Call No. A281.9/Ag8F)

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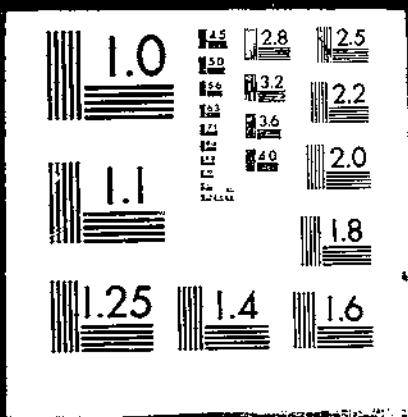


Table 14--Base 1970 price documentation--Continued

| Region and commodity | | Price | | | | Description, series title or identification | Source or reference |
|--------------------------------------|-----|---------------|-------|----------|---------------------------------|---|---------------------|
| | | Variable code | Units | Currency | Notes | | |
| <u>North Africa Mideast-High</u> | | | | | | | |
| Wheat | PDW | 102.78 | DE | a | Wt. ave. import unit value | FAS | |
| | PSW | 91.65 | DE | a | Wt. ave. import unit value | FAS | |
| | PTW | 69.63 | DE | a | Wt. ave. import unit value | FAS | |
| Coarse grain | PDC | 85.10 | DE | a | Corn, import value wt. | FAS | |
| | PSC | 72.00 | DE | a | Corn, wt. import value | FAS | |
| | PTC | 64.28 | DE | a | Corn, wt. import value | FAS | |
| Rice | PDR | 214.00 | DE | a | Same as NHPTR | | |
| | PSR | 100.00 | DE | a | Farm price, Iran | IRANAG | |
| | PTR | 214.00 | DE | a | Import unit value | FAO | |
| Oilmeal | PDK | 108.30 | DE | a | Same as NHPTK | | |
| | PTK | 108.30 | DE | a | Soybean meal, import unit value | ERS | |

Notes:

The labor of documenting and sourcing which went into setting up this table is largely the work of Jan Feldstein Lipson.

Price variable code. See pages 11-14 for interpretation of the symbols. Since the region is named above in this table, its 2-character symbol is suppressed here.

Currency. US\$ is U.S. dollars; CAN is Canadian dollars; UA is the EC unit of account; DE is dollar equivalent; AD is Australian dollars; YTH is thousands of Japanese yen; NP is Argentine new pesos.

Price notes. This column specifies timing of the price variables, with the following symbols: a is a 3-year average 1969-1971; b is a 2-year average 1970-1971; c is the year 1970.

Source or reference. Abbreviations are listed in the appendix.

APPENDIX

ABBREVIATIONS OF THE NAMES OF ORGANIZATIONS REPORTING DATA USED IN THE WORLD GOL MODEL AND THEIR PUBLICATIONS

| | |
|----------|--|
| AGWIRT | Agrarwirtschaft. Alfred Strothe Verlag. Hannover. Germany. |
| AMS | Agricultural Marketing Service. USDA. |
| AZAGEC | Statistical Handbook of the Meat Industry. Bureau of Agr. Econ. Canberra. Australia. |
| AZMB | Meat Producer and Exporter. Australian Meat Board. Melbourne. Australia. |
| AZWB | Australian Wheat Board. Melbourne. Australia. |
| BNGSTAT | Statistical Digest of Bangladesh. Dacca. Bangladesh. |
| BOERSE | Hamburg Boerse. Monthly. Hamburg. Germany. |
| BOLSA | Bolsa de Cereales. Annual. Buenos Aires. Argentina. |
| BRPROGEN | Prognostico. Federal Ministry of Agriculture. Brasilia. Brazil. |
| CARNES | Sintesis Estadistica. Junta Nacional de Carnes. Buenos Aires. Argentina. |
| CIJFERS | Landbouwcijfers. Landbouw-Economish Instituut. The Hague. Netherlands |
| CNAGPOL | Agricultural Policy in Canada. Agr. Pol. Rpts. OECD. Paris. France. |
| CNGTQ | Canadian Grain Trade Quarterly. |
| CNSTAT | Statistics Canada. Periodical. Ottawa. Canada. |
| DAIRYG | CED Dairy Group. ERS-USDA. Unpublished working tables. |
| DAPROD | Dairy Produce. U.K. Commonwealth Secretariate. London. England. |
| DASIT | Dairy Situation. Periodical. ERS-USDA. |
| ECC | European Communities Commission. Brussels. Belgium. |
| ECE | Economic Commission for Europe. Geneva. Switzerland. |
| EEC | European Economic Community. Brussels. Belgium. |
| ERS | Economic Research Service (now part of Economics, Statistics, and Cooperatives Service). USDA. |

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| ESCS | Economics, Statistics, and Cooperatives Service. USDA. |
| EUROACCT | Comptes Nationales. EUROSTAT. Luxembourg. |
| EUROAG | Statistique Agricole. EUROSTAT. Luxembourg. |
| EUROCROP | Production Vegetale. EUROSTAT. Luxembourg. |
| EUROGEN | Monthly General Statistics Bulletin. EUROSTAT. Luxembourg. |
| EUROMEAT | Statistique de la Viande. EUROSTAT. Luxembourg. |
| EUROPRIX | Prix Agricoles. EUROSTAT. Luxembourg. |
| EUROSTAT | Statistical Office of the European Communities. Luxembourg. |
| FACTS | EEC Dairy Facts and Figures. Economics Div. U.K. Milk Marketing Board. |
| FAO | Food and Agricultural Organization of the United Nations. Rome. Italy. |
| FAOMB | Monthly Bulletin of Agricultural Economics and Statistics. FAO. Rome. Italy. |
| FAOPROD | FAO Production Yearbook. FAO. Rome. Italy. |
| FAOTRADE | FAO Trade Yearbook. FAO. Rome. Italy. |
| FAS | Foreign Agricultural Service. USDA. |
| FENEWS | Feed Market News. Periodical. AMS-USDA |
| FESIT | Feed Situation. Periodical. ERS-USDA. |
| FOSIT | Fats and Oils Situation. Periodical. ERS-USDA. |
| FRSTAT | Statistique Agricole. Ministry of Agriculture. Paris. France. |
| GMNEWS | Grain Market News. Periodical. AMS-USDA. |
| GRANOS | Junta Nacional de Granos. Buenos Aires. Argentina. |
| GRSTAT | Statistisches Jahrbuch fuer die Bundesrepublik Deutschland. STATBUND. Wiesbaden. Germany. |
| GUARD | Annual Review and Determination of Guarantees. U.K. Ministry of Agriculture, Fisheries and Food. London. England. |
| INDSTAT | Indian Bulletin of Agriculture and Statistics. New Delhi. India. |
| IRANAG | Ministry of Agriculture. Teheran. Iran. |
| IWS | International Wheat Statistics. International Wheat Council. London. England. |

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| JPAGST | Statistical Yearbook. Ministry of Agriculture and Fisheries. Tokyo. Japan. |
| JPINAN | Prices Indexes Annual. Statistical Department. Bank of Japan. Tokyo. |
| JPRICE | Annual Report of the Retail Price Survey. Office of the Prime Minister. Tokyo. Japan. |
| JPTRADE | Japan Exports and Imports. Ministry of Finance, ed. Tokyo: Japan Tariff Association. |
| KORAG | Korean Agricultural Statistics. Seoul. Korea. |
| LMSIT | Livestock and Meat Situation. Periodical. ERS-USDA. |
| LMSTAT | Livestock and Meat Statistics. Stat. Bul. 522. ERS-USDA. |
| MARCHES | Marches Agricoles. ECC. Brussels. Belgium. |
| MEXBANK | National Bank of Mexico. Mexico. |
| MEXSTAT | Anuario Estadistico del Comercio Exterior de las Estados Unidos Mexicanos. Mexico. |
| NAPROV | National Provisioner. Periodical. Chicago. |
| NIRAP | U.S. National Interregional Agricultural Production Model. ERS-USDA. |
| NZDB | New Zealand Dairy Board. Wellington. New Zealand. |
| OECD | Organization for Economic Cooperation and Development. Paris. France. |
| OECDAG | Agricultural Statistics. OECD. Paris. France. |
| OECCTR | Trade by Commodities, Market Summaries: Exports and Imports. OECD. Paris. France. |
| PAKSTAT | Pakistan Annual Report of the Ministry of Agriculture. Karachi. Pakistan. |
| PESTAT | Poultry and Egg Statistics. Stat. Bul. 525. ERS-USDA. |
| PRAUSS | Preise Loehne Wirtschaftsrechnungen. Reihe 1: Preise und Preisindizes fuer Aussenhandelsgueter. STATBUND. Wiesbaden. Germany. |
| PREAG | Precos Recibidos pelos Agricultores. VARGAS. Average figures prepared for USDA. |
| REVAG | Review of the Agricultural Situation in Europe. FAO/ECE Agricultural Div. Geneva. Switzerland. |
| RISIT | Rice Situation. Periodical. ERS-USDA. |
| RMEATR | Reuters Meat Report. London. England. |
| SRS | Statistical Reporting Service (now part of Economics, Statistics, and Cooperatives Service). USDA. |

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| STAJAP | Statistical Abstract of Japan. |
| STATBUND | Statistisches Bundesamt. Wiesbaden. Germany. |
| THAIMB | Bank of Thailand Monthly Bulletin. Bangkok. Thailand. |
| THAIBD | Board of Trade. Government of Thailand. Bangkok. Thailand. |
| USDA | U.S. Department of Agriculture. Washington, D.C. |
| VARGAS | Centro de Estudios Agricolas. Fundacao Getulio Vargas. Rio de Janeiro. Brazil. |
| WHSIT | Wheat Situation. Periodical. ERS-USDA. |
| WRICE | World Rice Model. ERS-USDA. |

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