AN ECONOMIC ANALYSIS OF BEEF AND CATTLE EXPORTS TO JAPAN

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AN ECONOMIC ANALYSIS OF BEEF AND CATTLE EXPORTS TO JAPAN

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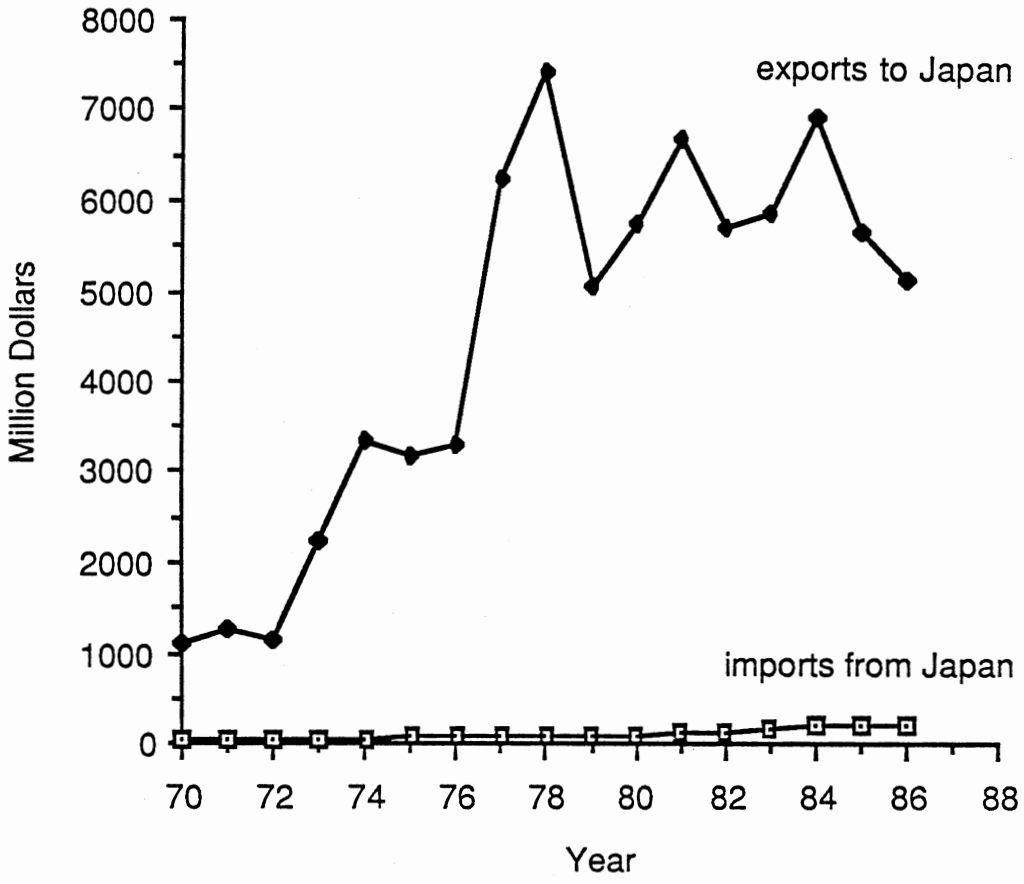
CHAPTER I

GENERAL PROBLEM

Since World War II, Japan has become the largest and most stable market for United States agricultural products. High levels of trade between the two countries have endured times of world economic, social, and political unrest, but are distressed by issues which strain this relationship. An issue which has become an increasing source of debate is the disagreement over agricultural trade, among which one of the more pronounced commodities is beef.

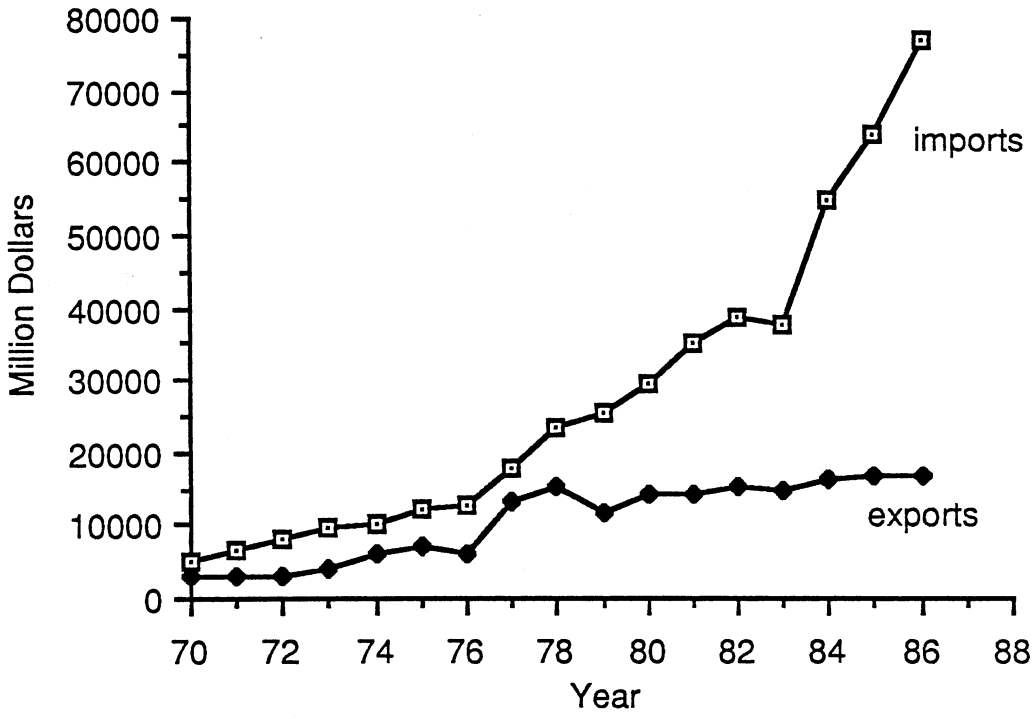
While the trade deficit with Japan has continued its negative growth since 1965, the U.S. is exerting considerable attention to protectionist trade barriers enacted by the Japanese government. Prior to 1965, the U.S. enjoyed a positive trade balance with Japan, since that time value of trade has grown into a deficit for the U.S. In 1985, the balance of trade had grown into a deficit of over forty one billion dollars. All of the deficit came from non-agricultural trade. This deficit can be attributed to the tariffs, duties, and/or quotas which govern the importation of many products into Japan. Figures 1, 2 and 3 show trading patterns between the U.S. and Japan for agricultural, nonagricultural and total trade respectively. Although only a small part of the total trade value between the two countries, beef has become a symbol of Japanese attitudes and directives towards protectionist policies.

While beef quotas remain in the forefront of livestock trade issues between the U.S. and Japan, other forms of livestock, beef, and beef by-



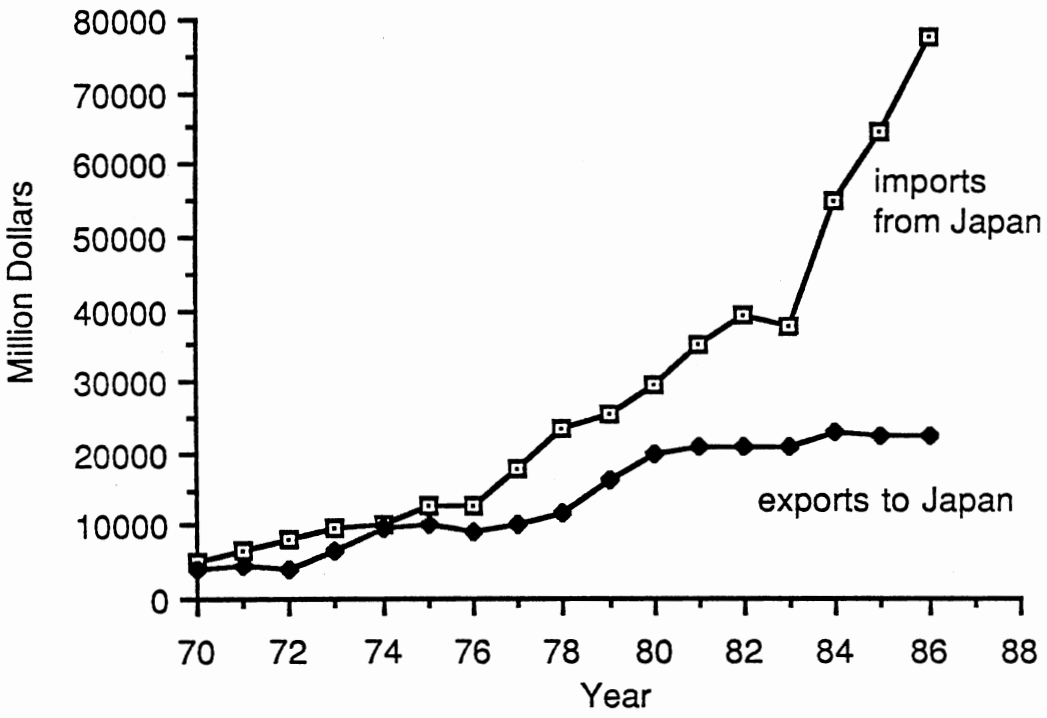
Source: U.S. Foreign Trade Statistical Report

Figure 1. United States Agricultural Trade with Japan from 1970-1986



Source: U.S. Foreign Trade Statistical Report

Figure 2. United States Non-Agricultural Trade with Japan from 1970-1986



Source: U.S. Foreign Trade Statistical Report

Figure 3. United States Total Trade with Japan from 1970-1986

products are increasing in importance, relative to total agricultural trade. Live cattle and calves, variety meats (edible offal), cattle hides, bones and bone ash, and bull semen are a part of the expanding trade in livestock and livestock by-products. Many exports do not fall under quota or tariff restrictions, but those that do are under the jurisdiction of a tariff quota system rather than an import quota system. Appendix I outlines the differences between these two types of quota systems.

Powerful political interest groups play an important role in the Japanese livestock and beef import protectionist policies. Protecting domestic producers from international competition stems from effective lobbying by a well organized livestock group. Lobby support arises from real concerns by Japanese citizens for food security, self sufficiency, and preservation of the nation's small agricultural base.

These concerns have emerged in international trade negotiations. Despite obstacles, trade talks between the U.S. and Japan, in the past, have produced a reduction in trade barriers. Although not always large, the changes are usually positive.

In 1984 a bi-lateral trade agreement increased Japanese imports of U.S. beef. The current agreement allows the U.S. to expand beef exports by 6,900 tons per year during the period 1984 to 1987, slightly faster than the 16 percent rate of the previous trade agreement period, in effect from 1979-1983 (7). The value of the increased exports indicated that in 1985 the U.S. exported 344 million dollars of beef and beef by-products as a result of the new trade agreement. The quota levels specified in the 1984 agreement, indicated 1987 beef exports to Japan will reach a value of 563 million (7). Table I presents how the quantities and values of U.S. beef and beef products exported to Japan have increased over the past sixteen years. Even with the increase,

TABLE I

QUANTITIES AND RESPECTIVE VALUES OF U.S. BEEF AND BEEF PRODUCTS IMPORTED BY JAPAN FROM 1970 TO 1985

Year	Quantity (Metric Tons)	Value (1,000 Dollars)
1970	493	1,516
1971	648	1,410
1972	611	2,123
1973	12,645	38,802
1974	8,927	27,606
1975	6,961	22,324
1976	21,096	56,898
1977	29,693	73,345
1978	47,930	163,611
1979	57,043	229,218
1980	60,656	247,705
1981	69,276	278,330
1982	78,337	333,114
1983	90,854	320,245
1984	99,533	338,732
1985	109,816	430,716

Source: Japanese Ministry of Agriculture, Forestry and Fisheries.

significant barriers to trade remain, however, Japan has the potential to be an even greater market for U.S. beef and cattle.

Not included in the agreement and currently being traded without significant governmental intervention, beef variety meat or edible beef offal is becoming an important part of beef trade. Since 1980, edible beef offal trade has increased from 29,251 metric tons to 52,331 metric tons traded in 1986, an increase of almost eighty percent. This increase in quantity has resulted in a growth in offal export value in 1980 from $82,920,000 dollars to a high of $127,715,000 dollars to Japan in 1986. A major contributor to this increase is trading edible offal. Its popularity with the Japanese consumer is due to the lower cost of offal as compared with the higher cost of quota and domestic beef.

Live cattle trade with Japan has experienced fluctuating demand since the beginning of live cattle trade recording. In the late 1970's a decline in number of live cattle shipped to Japan decreased from a high of seven thousand head to a low of approximately two thousand head. Trade remained at this level until 1986 when exports rose to fifty five hundred head. This quantity in 1986 contributed six million dollars to the overall agricultural trade value.

Japanese beef producers have attempted to improve their herds with artificial insemination to produce a product their consumers desire. In the past two years bull semen has increased the total value of livestock trade between the U.S. and Japan. In 1982, Japan imported no U.S. semen, but by 1986 bull semen exports to Japan had grown into a 500 million dollar enterprise. Accurate statistics on the quantity of semen exported to Japan are unavailable due to shipment discrepancies and lack of unit volume measurement standards, thus recording is in total value only.

March of 1988 will mark the end of the current beef trade agreement. Where new negotiations will lead is unknown, but comments by Congressional and United States Department of Agriculture leadership indicate a tough stance on the beef trade issue. Hope exists that an agreement can be reached that will reduce the difference in the balance of trade, increasing beef exports. Even with the past and potential future success by trade negotiators, significant trade barriers will remain, as Japan's potential as an increased market for U.S. beef and cattle continues. By addressing this issue, the focus will be on past and present U.S. beef and cattle exports to Japan, examination of policy actions of the Japanese government concerning beef and cattle imports, and predicting the export potential of beef and cattle to Japan.

Objectives

The overall objective of this study is to identify domestic economic and international trade implications for United States beef and cattle exports to Japan. More specific subobjectives include:

1) To identify and analyze historical beef and cattle trading trends and patterns between the United States and Japan.
2) To identify and quantify the impacts of selected variables on United States exports of beef and cattle to Japan; and
3) To identify trading strategies for current and potential United States beef and cattle exporters in increasing Japanese market share.

Procedure

The objectives will be met through the development of a detailed analysis of past and present U.S. and Japanese beef and cattle trading programs. The beef program will analyze the various governmental actions

regarding Japan's importation of U.S. beef and beef by-products. A examination of each action, its origin, basis for enactment, reactions or retaliations by parties involved, results, and any changes that occurred as a result of a particular program will be undertaken. Among programs reviewed will be the development and endurance of the beef quota system, tariff/levy system, Livestock Industry Promotion Corporation, domestic industry, and consumer awareness programs. The analysis will include a simple forecasting model for U.S. exports of beef to Japan.

The cattle trade analysis will also focus on a survey of different trade patterns and barriers which have developed over the past 25 years. Fat, feeder, and breeding cattle, and bull semen will receive the major emphasis in this area. An examination of past trading agreements and arguments, tariff and non-tariff trade barriers, quarantines, and other trade activities affecting cattle trade will be included. These activities will be examined in a manner similar to the beef trading programs and will also include a forecast model for U.S. exports of live cattle to Japan.

Through a review of the conclusions drawn from the analysis of beef and cattle trade, the user then would be able to plan and develop various marketing and trading strategies. This allowing current and potential exporters the opportunity to pursue and achieve a larger and more consistent share of the Japanese market.

CHAPTER II

LITERATURE REVIEW

As world trade has grown since 1960 so have the issues surrounding it. Trading in beef and cattle are no exception, and their importation by Japan from the United States has not gone without scrutiny. The importance of food, fiber and diet to human survival enhances the concern by many of trading edible commodities, including beef and cattle.

In reviewing periodicals, reports, journals, and articles the analysis of trading beef was considerably more accessible than live cattle and its various components. The fact that beef has been deliberated for a longer period of time and composes a much larger share of trade intensifies its popularity by researchers. Live cattle is just beginning to receive the attention given to processed beef and its by-products.

Processed Beef and Beef By-Products

An analysis by Hayami (11) suggests that the possibility exists for beef imports into Japan to increase several-fold to a level of one billion U.S. dollars per year. At the same time, output and income of domestic producers also could increase without imposing an additional burden on the government budget. This work demonstrates that a policy can be developed to produce large benefits for both domestic producers, as well as, consumers, and foreign suppliers.

Bale and Greenshields (4) estimated that the net social loss of current agricultural trade and production policies was 387 million dollars in 1975/1976. Using 1985/1986 Japanese production goals, the total net social cost would rise to 7.8 billion. Their study revealed that government intervention is active in almost all facets of the agricultural industry. The effect and concern of this growing social cost is of debate in choosing between free trade or protecting the vulnerability of Japan's economy to commodity price fluctuations, given its high degree of dependence on foreign food sources.

Bale and Greenshields (5) later examined this problem more closely through breaking down net social costs by individual farm commodities. Through this analysis, beef was the largest contributor to the increase in net social cost. This supported that quantity demanded did increase but not as rapidly as price levels, which have more than doubled over the same time period.

Recognizing that political, not economic, factors control the Japanese beef market, Longworth (24) illustrates that economics is still a major determinant of government policy. Beef is the only commodity to have prompted farmer protests in the same time period in Japan, United States, and Australia (15). In relation to total trade, beef is a minor commodity in U.S.-Japanese trade. Yet in the minds of many, beef has become a symbol of trade policy. While the traditional meat trade of cooperatives and meat merchants is continually replaced by modern production systems and meat marketing methods in Japan, a new outlook on beef trade may exist in the near future. A trade involving the phasing in of variable import levies/deficiency payments for beef and reduction in the size of beef import quota's.

Simpson, Yoshida, Miyazaki, and Koda (30) estimated that Japanese beef production can compete with imported beef. Indicating that technology

would be readily available by 1990 to support this hypothesis for medium and upper quality beef, adoption will be slow and domestic cost will not decrease. These changes would be inadequate to the extent that Japan could compete directly with beef imported from the U.S. A change in attitudes would have to accompany these technological changes to have an effect on production. The attitudes that the industry emphasizes toward cattle breeding as more of a social subsector rather than an economic subsector will need to be realized and changed by all parties involved.

Anderson (3) questions the use of import quotas rather than less distortionary production policies. Import quotas ensure that domestic beef prices are several times higher then import prices. There are two possible policy alternatives to quotas. The first is compensating the producer for the drop in beef prices. This is politically impractical due to high budgetary costs. A second policy is replacing import quotas with less restrictive tariffs and/or a levy on imports and using the revenue to subsidize the domestic producer up to its present quota protected level. The second policy alternative would offer substantial net social welfare gains and offer considerable opportunity for consumers/taxpayers to compensate losers from trade liberalization.

Coyle (8) analyzes the potential dimensions of the Japanese beef market in the event of full trade liberalization. The analysis concludes that liberalization of the Japanese beef market would lead to a sharp jump in Japanese per capita consumption of beef. This, however, is subject to judgement made in light of a broad range of Japanese policy alternatives from full to no trade liberalization.

Yuize (37), using structural and characteristic equations (in simultaneous equation structure), developed a meat supply and demand model to determine the effects of an increase in beef quotas. Using a simulated 18 percent annual

increase of beef imports, results indicated a reduction in prices below the present government supported level. This drop in income, however, would not be unendurable for beef cattle raising households. But if the current international market situation remains constant, world prices would increase due to higher levels of beef trade.

Realizing Japan's agricultural trade policies have contributed to increased cost of United States farm programs and reductions in possible U.S. farm income, Paarlberg and Sharples, et al. (27) examined alternatives open to the U.S. and Japan. In grain trade alone the U.S. loses roughly 1 billion dollars in protectionist grain policies. Among alternatives analyzed were restrictions on U.S. production and exports, multilateral trade agreements, subsidize exports, encourage relaxation of trade barriers, or do nothing. The goal of these alternatives was the potential benefits to the agricultural sector in the U.S. from selective Japanese agricultural trade liberalization.

Blabey (6) forecasts Japanese imports of U.S. beef to continue to rise as the 1984 Japanese-U.S. beef and citrus agreement remains in effect into the latter part of the 1980's. However, Japanese agricultural policies would continue to resist the pressure for trade liberalization. The forecast also points out three areas of concentration these Japanese policies may achieve: maintaining of farm income, assuring reliable overseas supplies of agricultural commodities, and increasing domestic self-sufficiency.

Coyle (7) concludes that future consumption of livestock products will depend largely on income and population growth and changes in tastes and preferences. This follows twenty years of an increasing Japanese demand for livestock products, but remains low compared with other developed countries. Meat consumption quadrupled from 1960-1980, but was still low at 55 pounds per person compared to the 250.8 pounds per capita consumed by Americans.

Liu (20) evaluates the effects of reducing Japan's beef import restrictions through an analysis using the world grain, oilseeds, and livestock (GOL) model, with emphasis on Japan. The inclusion of (1) continuation of current beef import policy, (2) expansion of import quota, (3) free trade and (4) reduction in ad valorem tariffs, indicated liberalization of beef imports result in increases in Japanese consumer welfare.

Live Cattle and Bull Semen

Pakanati, Henneberry and Russell (29) analyzed foreign markets for U.S. breeding livestock. Japan was among the top importers of U.S. live animals and the U.S. supplied an average of fifty two percent of all live animals imported into Japan. Included in these totals were beef breeding bulls, beef breeding females and bull semen.

Longmire and Gardiner (23) addressed such factors as domestic and foreign trade policies, transportation costs, consumer preferences, and cultural traditions which greatly influence the current international trade patterns in feed and livestock. Removal of the artificial influences in the marketplace, i.e. trade barriers, would result in increased farm output in North America, Oceania, and Argentina. In addition to increased output, alterations of trading patterns would occur. Redistribution effects, measured in terms of total world welfare, would show a fifty billion dollar gain. With Japanese consumers gaining the most from liberalized trade.

CHAPTER III

THE LIVESTOCK INDUSTRY IN JAPAN

Japan, a chain of rugged islands, lies in a 2000 mile long arc off the east coat of Asia. It encompasses of four main islands: Hokkaido, Honshu, Shikoku, Kyushu and more than 3900 smaller islands (Figure 4). Japan has an estimated 1985 population of 121.2 million with an annual growth rate of 0.6 percent. The population employment breakdown consists of nine percent in direct agricultural production, including both full and part-time farmers, and the remaining 91 percent employed in various urban activities.

Japan is very dependent on world trade. Before 1986, eleven consecutive years of rising real Gross National Product (GNP) stimulated the Japanese economy. In 1985, it had a GNP of 1.315 trillion dollars, a growth rate of 4.3 percent, and a per capita GNP of $10,893. Rapid appreciation in the value of the yen relative to the dollar, coupled with lack of sufficient domestic expansion to offset declining exports, resulted in declining economic conditions during 1986. A twenty percent decrease in net exports reduced 1986 real GNP by 2.1 percent.

Japan has few natural resources. Of its 148,000 square mile land area only 13.1 percent is arable. Of this arable land a major portion lies in paddy fields for rice production. With a highly subsidized and protected agricultural industry, Japanese farmers have been successful in maintaining some of the highest per-hectare crop yields in the world. A result of this is the 70 percent

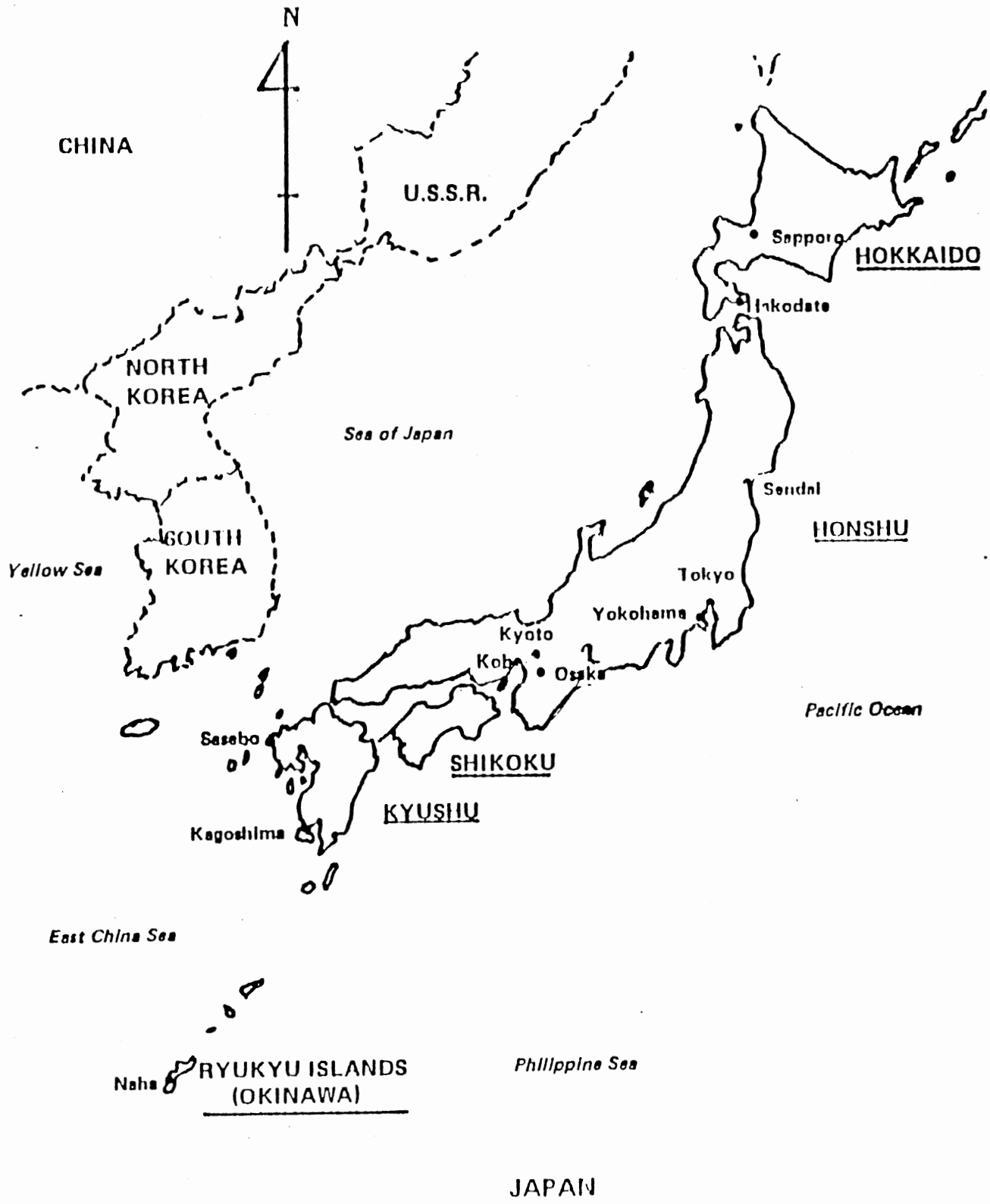


Figure 4. Map of Japan and Its Islands

agricultural self-sufficiency rate these farmers provide on fewer than 5.6 million cultivated hectares (14 million acres).

While Japanese self sufficiency occurs mainly in rice, Japan's reliance on feed grains, wheat, soybeans and oil-seeds imported from the U.S. and elsewhere has caused a drastic drop in domestic grain production. The dependence on foreign suppliers for feed grains has grown to seventeen million tons imported in 1984. The self-supply ratio for grain in 1982 was only 34 percent, the lowest observed level of any developed country (2). This drop in the self-supply ratio has led to government encouragement for producers to grow wheat and feed grains in paddy fields instead of rice. It is anticipated that beef cattle will play an important role in using the forage crops diverted from rice production.

History of the Japanese Beef Industry

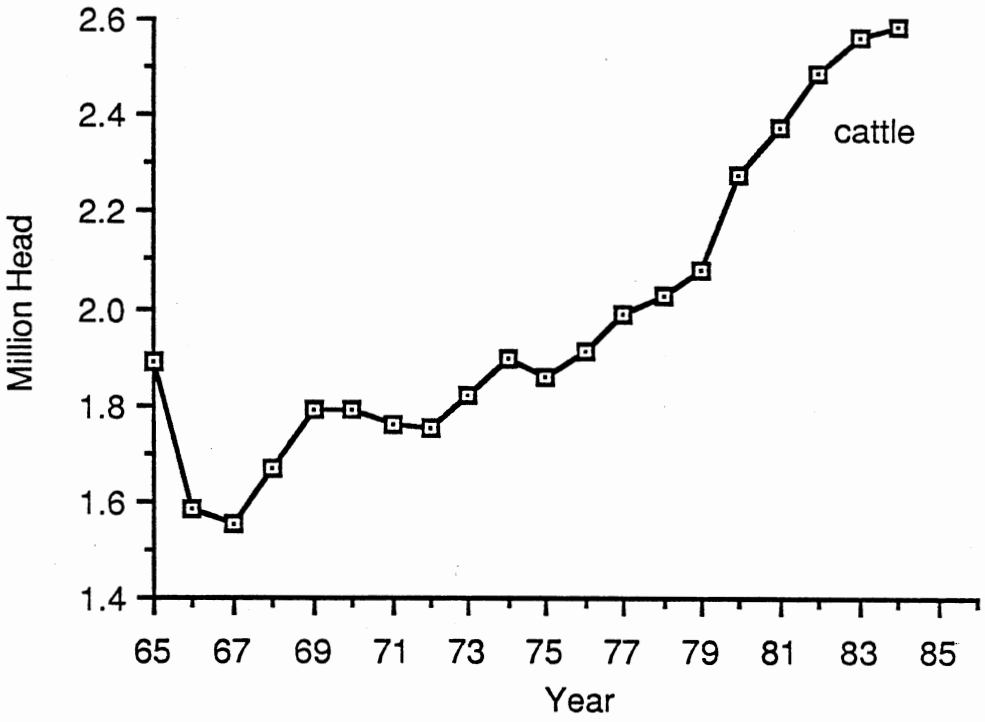
The consumption of beef in Japan was prohibited until 1868 when, during the Meiji Restoration, the Buddist dogma concerning the cruelty of killing and eating four legged animals was revoked. Religious influences on the meat industry through the development of beliefs such as avoidance of blood, water as a form of purification, and emphasis on the consumption of fish and birds came to leave lasting impressions on the way the Japanese people prepared and included beef in their diets (30).

Out of unique methods of beef preparation came the development of sukiyaki, a main beef dish of the Japanese. The sukiyaki process involved slicing the beef into thin strips and cooking in boiling water. Preserving the tenderness of beef during such a cooking process required highly marbled beef. The popularity of this dish and its use of highly marbled beef grew into the

development of the Wagyu breed as the chief beef producing animal, title the Wagyu has retained ever since.

The modern Japanese beef industry is a result of World War II. Before the war, cattle were found only in rural areas where rice farmers raised a dairy cow and couple of Wagyu calves for family food consumption or as a means of disposing of crop waste (24). This production practice along with the traditional diet of rice and fish was indicative of the small demand for beef in Japan. Following the war, the Occupation Forces set up a democratic government which included the westernization of many industries, including agriculture. The initial goal was food self-sufficiency, with increased emphasis on rice production. Japan had proven the capability of self-sufficiency before the war and rice production was the greatest agricultural enterprise. Meanwhile, the beef industry remained relatively insignificant, contributing less than 10 percent of the total value of agricultural output in the 1950's (24). Livestock products therefore, were almost entirely produced from side-line activities or as by-products of rice cultivation. In 1961, the National Diet passed the Agriculture Basic Law, which called for selective expansion of livestock industries. Initially the government concentrated on swine and poultry rather than on dairy and beef cattle. The reasoning was primarily biological since swine and poultry production expanded at a faster rate and were more efficient feed converters than cattle. Since that time, beef has received the attention first given to swine and poultry, resulting in an increase in output. Figure 5, provides an illustration of the expansion in livestock production since 1950. This increase in output can be attributed to the changing of beef production priorities.

Almost all commercial beef production, besides dairy calves and cull cows, utilize Wagyu beef herds. Since the numbers of Wagyu beef are relatively small and raised in herd sizes of 5 animals or less, prices reach high

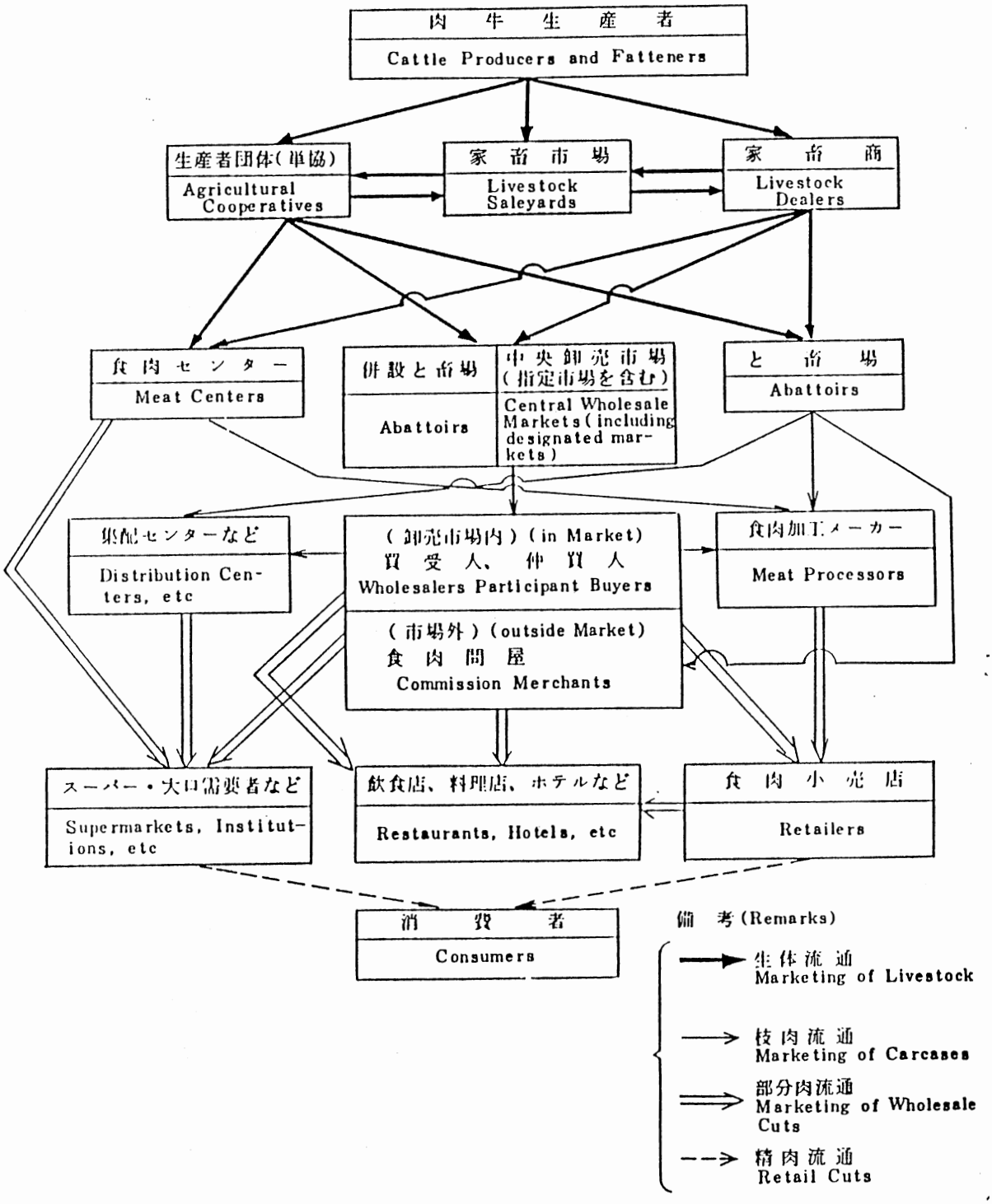


Source: Ministry of Agriculture, Forestry, and Fisheries

Figure 5. Expansion of Japanese Beef Cattle Production from 1965-1984

levels. These high prices, coupled with government supports, result in cattle prices which are rarely below the 800 Yen/kilogram ($1.51 per pound) level. These prices are roughly twice the U.S. average fat cattle price. As stated above, the average herd size is small, signifying a channel intensive marketing system (Figure 6). Producers either raise or buy their feeder calves through an elaborate auction, similar to a U.S. livestock show or club calf sale, where the calves are carefully groomed and sold individually to the highest bidder. The calves are then fattened in individual stalls to a weight of 800 to 900 kilograms (1700 to 1900 pounds) over a thirty month period. The use of feedlots to feed out Wagyu calves is being used by a few producers, but this practice is limited due to low daily gain, length of feeding period, and quality control problems associated with feeding large groups of these high valued calves together. In comparison, the average U.S. fat steer is fattened in a feedlot to a 1000-1200 pound slaughter weight in 18-22 months. Upon reaching market weight the Japanese producer has 3 methods of marketing his fat calves: direct to the fat cattle market, wholesale meat merchants or the popular village marketing cooperative (24).

Given strong political power by the new democratic government, rural beef cooperatives in Japan act as both agents and merchants of local beef. These producer owned federations, through the use of collective bargaining, are able to keep prices high through regulated supply and high government support prices. The beef is then shipped to wholesale meat markets or small scale packing plants for processing into hanging carcasses. Carcass beef is then transported to meat processors, wholesalers and/or commission agents for bone-in part cuts and processed meat. Boxed beef is still an infant industry in Japan and only occurs in a few modern, large scale packing plants. From the



Source: Livestock Industry Promotion Corporation, Tokyo, Japan

Figure 6. Chart of Japanese Beef Marketing Channels

wholesalers, the beef is channeled to the consumer through conventional retailers and restaurants.

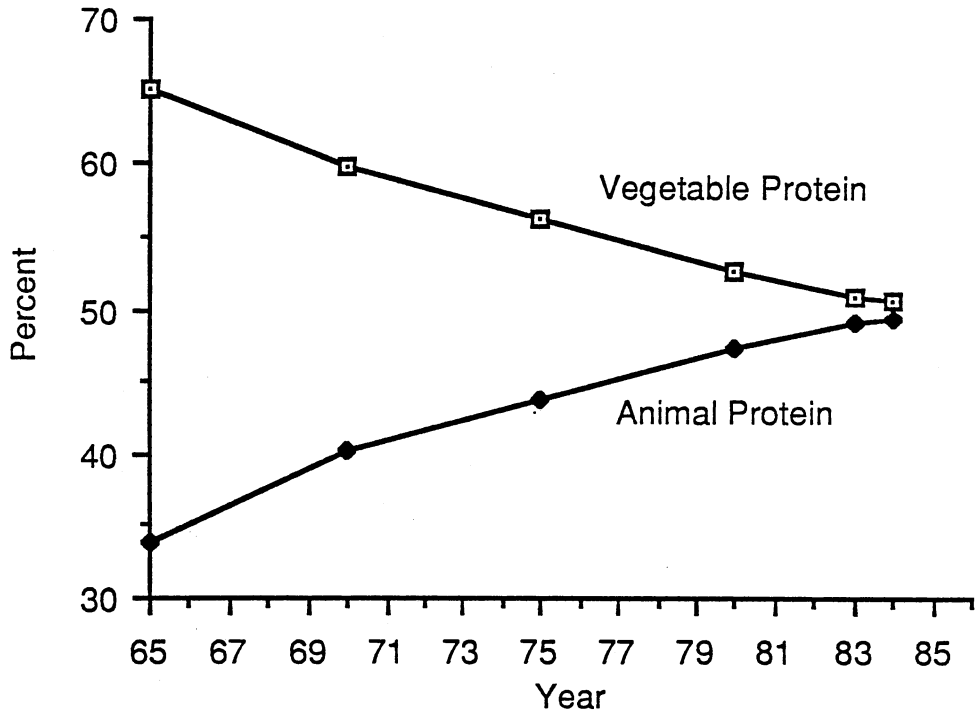
The fed dairy cattle marketing system follows many of the same channels as beef. Dairy supplies 80 to 85 percent of domestic beef, of which almost all is processed into canned beef, hamburger or other lower quality cuts. Dairy cattle marketing practices are similar to fed beef but prices are lower and calves are fed out with imported feed grains in small feedlots with an average capacity of 100 head. Post production dairy cattle marketing is through cooperatives and follows traditional beef marketing channels.

Changing Japanese Diet

The food consumption patterns of various nations are traditionally promoted by culture and regulated by the social conditions existing in each country. A perfect example of this is the changing dietary pattern which has taken place in Japan over the past century. Changes in Japan were even more significant because of the food programs initiated by the Occupation Forces following World War II and the period of rapid economic growth which began with the Korean War.

As economic growth has continued since that time, so have changes in the Japanese dietary pattern. The traditional Japanese diet of rice, vegetables and fish has grown to resemble a western menu. The new menu may include breads, meats (including beef, pork, and poultry), inclusion of vegetables and fruits in desserts and use of such condiments as sugar, mayonnaise and salad oils. Figure 7 shows changing dietary patterns of the Japanese.

Behind this changing dietary pattern has been the increase in disposable income over the past 35 years. Rising incomes along with economic expansion during the period has had many social impacts as well. The exodus of the



Source: Livestock Industry Promotion Corporation

Figure 7. Changing Dietary Pattern of the Japanese Consumer

population from the rural to urban areas, increase in the number of nuclear families, and the increasing acceptance of working housewives or two income families, are just a few of the socio-economic effects on a changing Japanese diet.

Government Involvement and the Livestock Industry Promotion Corporation (LIPC)

The influence of the rural Japanese in the National Diet has resulted in the Japanese Government ensuring the existence of a healthy agriculture, including beef producers. The previously mentioned price support program for cattle is part of a price stabilization system to help ensure a stable supply of beef from both imports and domestic production, with an import system designed in coordination with a price stabilization policy. The price stabilization program was part of the large package of laws passed in 1961 and creation of the Livestock Industry Promotion Corporation (LIPC) to administer the program.

The LIPC is a quasi-government institution established to implement measures necessary to stabilize the prices of major livestock products and give assistance to projects which contribute to the promotion of the Japanese livestock industry (22).

In the area of stabilizing livestock prices the LIPC advises the Minister of Agriculture, Forestry and Fisheries in determining the upper and lower prices of domestically produced beef and pork. This is accomplished through analysis of production, supply-demand, and other economic conditions annually.

The LIPC maintains significant control over the handling of imported beef. It adjusts the amount of imported beef in the market so that wholesale prices of domestic beef are within the stabilization price range, resembling a buffer stock program. When domestic beef prices rise due to either a reduction

in supply or increased demand, the LIPC increases the amount of beef available by selling stocks of imported beef. On the other hand, a drop in domestic beef prices results in a reduction of imported beef available to the wholesale market. If the domestic price should fall below the stabilization zone's lower price level, the LIPC authorizes the purchase of domestic beef in an attempt to stabilize prices. This has never occurred for beef, but was necessary twice in the early 1970's for pork.

The amount of imported beef purchased by the LIPC lies within the range of the government imposed import quota. This is based upon consideration of domestic beef supply and demand situation and the LIPC's inventory levels of imported beef. Imported beef purchases are implemented with tenders monthly through designated Japanese trading companies. Only meat packers registered with the LIPC are eligible to participate and solicit bids in the tender process.

The beef imported by the LIPC is sold only to the approximately 3000 LIPC designated imported beef retail outlets, located in major cities throughout Japan. These retail stores must then sell the imported beef at designated "reasonable" prices under appropriate labeling. Once a month, 9000 retail stores nationwide are eligible to market imported beef on LIPC designated meat days. This is to familiarize Japanese consumers with imported beef and provide information concerning preparation of the various cuts of imported beef.

Any profit accruing from LIPC sales of imported beef serves as a source of funds from which subsidies and/or investments in which assistance and promotion activities occurs. These activities include promotion of beef production, improvement in productivity, modernization of distribution systems, and consumer education programs.

There are no formal quantitative restrictions on the number of live cattle imported into Japan for breeding, for immediate slaughter, or for fattening. Monetary restrictions involved effect only lightweight feeder cattle on a tariff basis of which all other types are exempt. However, any importation of live cattle must satisfy strict quarantine requirements and semen stock must also meet several health requirements. Appendix II provides a detailed guide of the rules and regulations involved with exporting live cattle and semen to Japan.

CHAPTER IV

JAPANESE MEAT INDUSTRY

Policies Affecting the Livestock Sector

The Japanese government involvement in the beef industry emerges as various policy actions during the past 25 years. Policy implications concerning prices, import stockholding, subsidies, types, and grading have had positive and negative influences on the supply and demand of beef and beef by-products. These policy decisions have led to the formation of Japan's current beef industry. They imply that the natural resources involved necessitate the need for government intervention, resulting in a highly controlled beef industry.

Many of these policies originated during the early 1960's with the ratification of the Basic Agriculture Law and the Law for Price Stabilization. The protection of domestic producers from income variability and instability was a matter of great concern to the rural majority in the Diet, and the passage of these two major pieces of legislation indicated their willingness to do something about it. Since that time, rural politicians have continued to influence lawmaking but changing society behavior and thinking has further slowed governmental action. A good example of this behavior is the Japanese government submitting to U.S. pressure in increasing their import quotas on beef. As the urban community proceeds to distinguish itself from rural ties and feelings, and begins to demand realignment of Diet districts, the power and

dominance of rural politics is beginning to decrease. A result of these changing feelings is possible reductions in domestic livestock production support.

Prices

The basis for price control policies on beef originated with enactment of the Price Stabilization Law for Livestock Products in 1961. Originally designed to assist dairy and pork operations with price stabilization, it expanded to beef in May 1975. To carry out and administer the programs specified under the Agriculture Basic Law and Price Stabilization Law the LIPC was born. While actual price stabilization activities didn't begin until 1975, the LIPC began influencing beef prices as early as 1965 with the buying and selling of imported beef. In the early 1970's, beef producers began to experience dropping fat cattle prices and a severe cost-price squeeze resulted in the government instructing the LIPC to include beef in the dairy and pork price stabilization programs.

Before 1961, there was basically no involvement by the government in the pricing of beef. Since the majority of beef for public sale was retired draft animals, prices did not have much of an influence on farmers. Increased mechanization in rice production, allowed disposal of crop residue through Wagyu feeder calves, resulted in a new and important farm enterprise. Thus, beef price fluctuations were becoming more apparent at the farm gate than during any prior time period.

The Price Stabilization Law initially enacted a pork pricing plan of government announced floor and ceiling prices. This two-price stabilization scheme, supported by LIPC buying and selling pork stocks in accordance with normal pork price movement, maintained the market price within the price zone.

A sharp decline in prices beginning in late 1973 and continuing into most of 1974, followed an extended period of rising beef prices and expansion by cattle feeders. Before this price drop, Japanese producers had benefited from a fifty two percent increase in beef prices in 1972. The price increase stimulated production with a nine percent growth in herd size during 1972-1973. The Arab oil shocks and worldwide recession coupled with declining beef prices hurt the imported grain-trade dependent Japanese beef producer to the point where government assistance was solicited to stabilize beef prices. In 1975, Japan revised the Law Concerning the Price Stabilization of Livestock Products and Other Matters, making beef one of the designated meats under the law. In order to stabilize domestic beef prices and facilitate reproduction, beef thus became one of the main objectives of Japan's price stabilization program. The resulting government response was expansion of LIPC powers to include the buying and selling of imported beef and the introduction of a price stabilization scheme similar to the pork and dairy program in use since 1961.

The beef price stabilization program involves the use of floor and ceiling prices. The price zone is determined each year by the Ministry of Agriculture, Forests and Fisheries (MAFF) and includes two designated types of wholesale beef carcass: Wagyu steer 2nd grade and dairy steer 2nd grade. The responsibility of executing the program lies in the hands of the MAFF. Which in turn authorizes the LIPC to manage the task of keeping prices within their respective price ranges. Figure 8 gives a detailed illustration of the price band established by the MAFF and the resulting cash prices for Wagyu and dairy steer beef since 1970.

In determining the prices included in the price stabilization program, the LIPC analyzes various parameters in developing the appropriate price band. A regression formula involving farm-gate prices, cost of production index, and

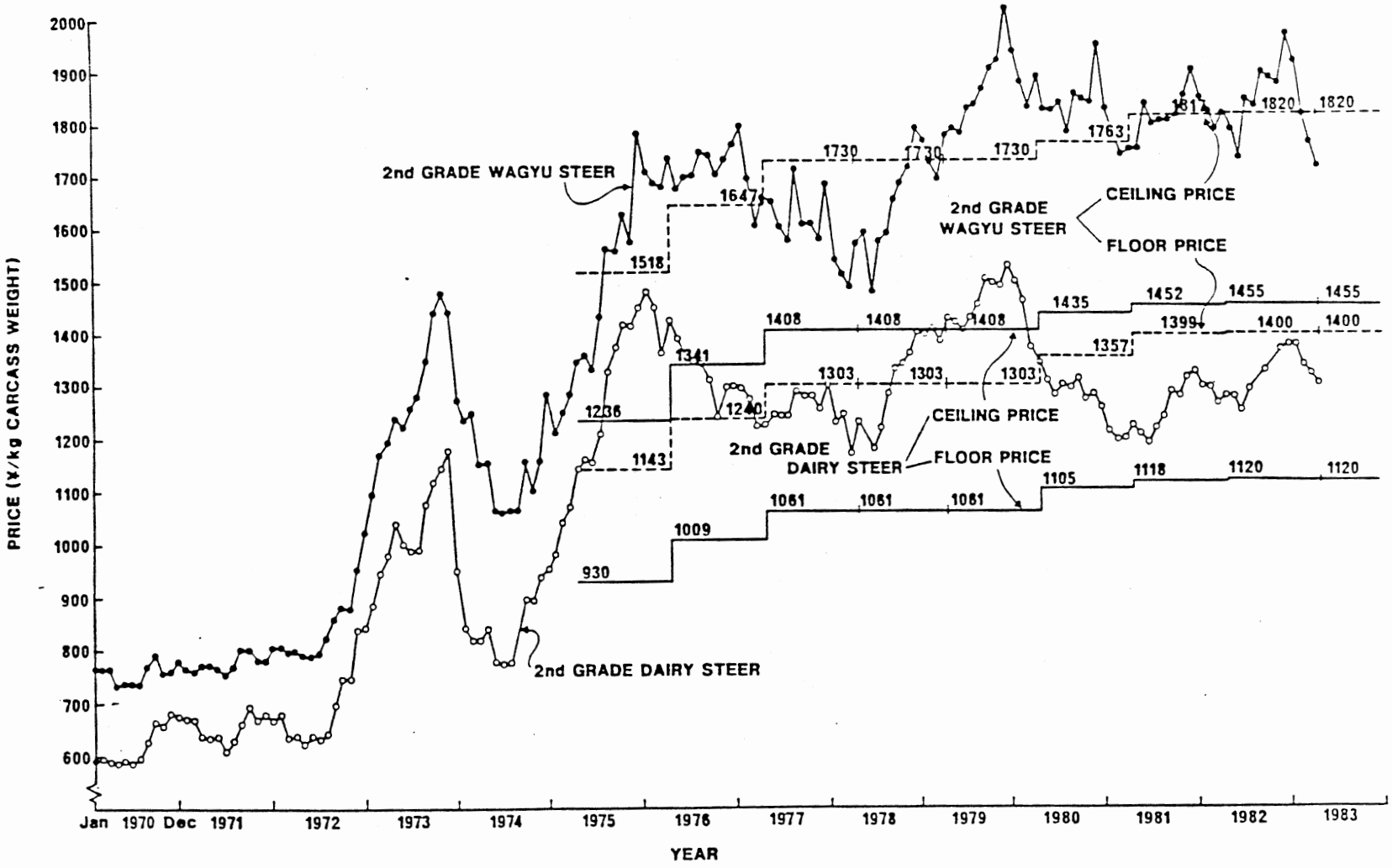


Figure 8. Monthly average prices at Tokyo Central Wholesale Meat Market and price stablization bands for 2nd grade Wagyu and dairy steer carcasses

wholesale prices used along with additional supply and demand situations, conditions of current and future production, and other economic conditions each year to give a specific range of prices to support. Examination of results from these annual procedures show few changes in floor and ceiling prices occurring. These small changes are indicated in the period following 1975 in Figure 8.

This price stabilization program has been a blessing to the beef producer, but a bust to the consumer. While the price band has been successful at supporting prices, wholesale cash beef prices have remained near the top and more often above the ceiling price as dictated by the MAFF and LIPC. This price action has led to questions concerning whether the price stabilization program is a floor-price plan rather than a stabilization plan as promoted. Consumer groups have taken notice of these price variations and have begun to actively campaign against the LIPC and the government for not acting to the needs of consumers while promoting producers.

Stockholding

The use of beef stocks by the Japanese government is a means of regulating supply in attempts to stabilize prices. Stockholding, through retainment of imported or domestic beef off the market, is administered by the LIPC. Basis for this action is dependent upon supply and demand conditions created within the marketplace.

Stockholding is dependent on the storing qualities of the beef. Frozen beef is the only type preservable for any length of time. Much of the Australian beef shipped as "chilled beef", must be "quick frozen" upon arrival in Japan for storing purposes. While high quality U.S. beef arrives frozen in boxed beef

form, requiring less handling and expense when arriving at designated Japanese ports.

The advantages of handling beef this way facilitates LIPC stockholding and thus enables the LIPC to place relatively large quantities on the market at a very short notice should the need arise. The cost of holding stocks is viewed as a necessary outlay. If stocks are unavailable for immediate distribution, the LIPC must rely on import manipulation to stimulate wholesale prices. This manipulation can take up to at least two months to organize and arrange for additional imports and land the beef in Japan. This indicates LIPC's ability to hold stocks or have access to them, giving them a stronger position to adjust or fine-tune the market.

Imports

As the demand for beef continues to increase, as shown by the rising per capita consumption of beef (Table II), the lack of domestic production has led to increased dependence on beef imports. Since 1970 Japan has increased imports of beef and beef products 208 thousand metric tons, with a corresponding increase in value of 750 million dollars (as of 1985).

Importation of beef and beef by-products into Japan are controlled through various trade restrictions, among which include quotas, tariffs, and import surcharges. A typical cost structure for imported beef in 1977 in the case of Australian grass fed chilled beef in a boneless form was: (a) an FOB export price of 450 yen per kilogram; (b) a CIF import price of 520 yen per kilogram; (c) the procurement cost for LIPC, which added the 25 percent ad valorem tariff to the CIF price of 650 yen per kilogram; and finally (d) the sale price from LIPC was about 1000 yen per kilogram, which added to the procurement cost the import levy of 350 yen per kilogram (raised to 600 yen since 1977) (12).

TABLE II

RATE OF INCREASE IN JAPANESE PER CAPITA CONSUMPTION OF BEEF, 1960 TO 1984

Fiscal Year	Beef and Veal (Kg) (Retail Weight Basis)
1960	1.1
1965	1.5
1970	2.1
1975	2.5
1980	3.5
1984	4.2

Source: Japanese Ministry of Agriculture, Forestry and Fisheries, "Food Balance Sheet."

Under rules concerning beef imports into Japan, the LIPC controls about 90 percent of the beef imported by Japan. The other ten percent is allocated to the private trade which in turn, distributes to designated associations and end users.

Japan regulates its beef imports with a general quota and four special quotas. The general quota announced semi-annually, establishes the amount of beef Japan will import from all sources, i.e., the U.S., Australia, New Zealand, and Canada. Within the general quota, Japan also maintains a high quality beef quota. By definition, high quality beef is derived from cattle thirty months of age or less, which have been fed for 100 days or more on a nutritionally balanced, high energy feed ration containing no less than 70 percent grain and at least 20 pounds total feed per day. Beef graded USDA "Choice" or "Prime" automatically meets this definition. Because of the U.S. methods of production, U.S. producers are able to provide almost 100 percent of this high quality beef quota.

All meat imported under the general quota, whether chilled or frozen, is subject to surcharges and a 25 percent duty on the CIF (cost, insurance, and freight) price, levied according to cut. This revenue obtained from the above instruments finances part of LIPC's efforts to support feeder calf prices and promote the livestock industry.

Initially problems developed in the acquisition of imported beef stocks. Until 1970, the LIPC forecasted market requirements and subsequently purchased imported beef for resale. The beef was then placed in storage until market conditions dictated a release. Many times, forecasts proved to be inaccurate and forced the LIPC to either hold beef for long term storage or sell below market prices. Either way LIPC lost financially.

As a response to these early problems, the LIPC began to develop and use a "one touch" system where authorized importers were allowed to sell LIPC quota beef directly to distributors. This system permits the LIPC to collect a fixed levy on this beef to fund projects. It also relieved them of some of the responsibility in handling beef. This one touch system allows expansion in the distribution network of imported beef, providing consumers easier access at more locations.

While the one-touch system appeared to be operating efficiently, LIPC began to regain control over acquisition and distribution of imported beef. This was accomplished through redesigning the "tender" system used to solicit bids on imported beef. Eventually the LIPC was back to distributing over two thirds of the imported beef to meat marketing companies and through designated LIPC grocers.

Currently LIPC uses a modified tender system introduced in 1985. The simultaneous buy and sell system (S.B.S.) currently in use, was a result of U.S. and Japanese beef negotiations. The S.B.S. system "facilitates consultations between foreign beef suppliers and Japanese users" (7). It allows Japanese end users to negotiate directly or through Japanese importers with foreign suppliers about items, specifications, prices, and the amount of beef traded. While this S.B.S. system applies to only 10 percent of the LIPC total allocated quota, reaction by users appears favorable and may increase over the next few years. Appendix III gives a detailed outline of the S.B.S. system currently used by the LIPC.

Subsidies

As in the case of almost all agricultural policies worldwide, subsidies play an important role. Japan, particularly in the beef subsector, is no exception to

the use and influence of subsidies. Approved by the MAFF and administered by the LIPC, subsidizing those who process, store, and promote beef continues through profits accrued from purchases and sales of imported beef.

Various groups receive subsidies, guarantees of debts, and storage payments in accordance with Laws Concerning Price Stabilization of Livestock Products. The exact dollar amount is unknown, but sizable due to the scope of activities supported though LIPC funds. Specific activities are: subsidizing the cost of storing designated meats, guaranteeing of debts to banks and other financial institutions incurred by investors in the LIPC (producer and processor associations), subsidizing a portion of school lunch programs and subsidizing agricultural cooperatives in meat handling and distribution (21).

Grades and Grading

The Japanese have no grading requirements for live cattle, resulting in all grading taking place at the carcass stage. Grading is relatively new to Japan's beef industry, when compared to other beef producing nations, being initiated in 1961. Prior to this time, the need for grading was not great due to the type of cattle fattened during this period. Draft animals and old dairy cows being the most prevalent slaughter animals. The basis for this grading system originated from Wagyu production practices emphasizing highly marbled meat.

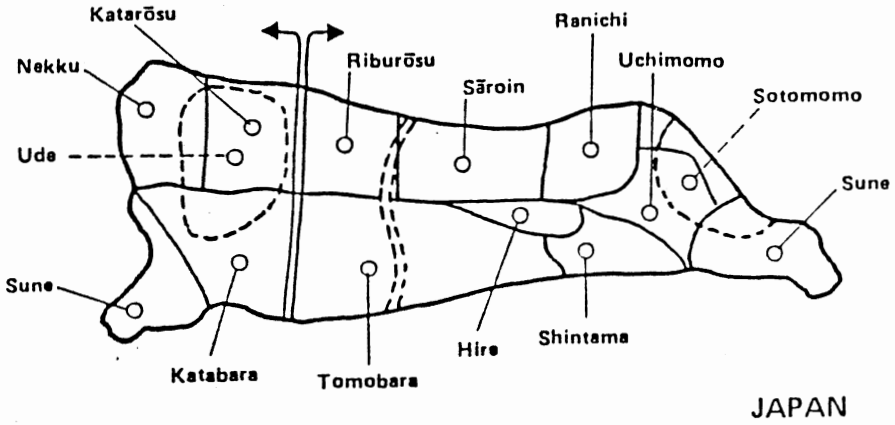
In conjunction with other laws sweeping through Japanese agricultural reformation in the early 1960's, was development of a carcass grading system. The present system consists of 6 grade categories: Supreme, Superior, Excellent, Medium, Common, and Utility. In this system no consideration is made to breed, sex, or age, instead being based upon inspection of the side of carcass at the meat market. Determination normally takes place between the

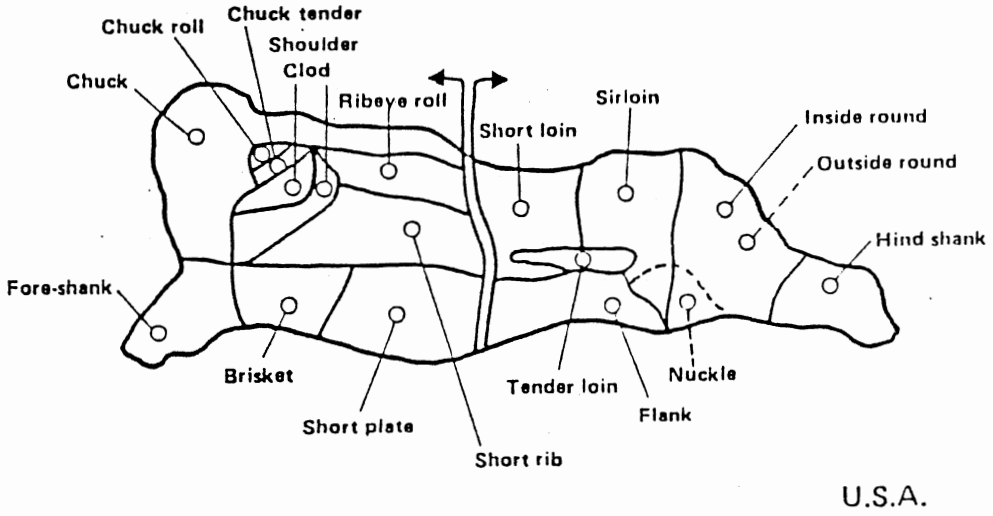
5th and 6th rib. This however is not a standardized Japanese location, other Japanese markets use the 7th and 8th rib as the point of market inspection.

The process of measuring marbling to achieve the grading score has been scrutinized due to the varying inspection locations. Marbling decreases and rib eye increases as one moves back along the rib cage. As the animal reaches maturity, fat is the last tissue deposited in the animal. The establishment of fat from front to rear naturally means a higher marbling score up front in the rib cage. Thus the grading at the 5th and 6th rib or 7th and 8th rib does not give an indication of the overall carcass quality. This is one of the main reasons the U.S. and Australia grade farther back in the 12th and 13th rib area. A comparison between the U.S. and Japanese grading systems is shown in Figure 9.

Wagyu beef production has had a tremendous impact on the Japanese grading system. The whole feeding strategy of Wagyu cattle aims at producing the most heavily marbled meat as possible. This "pouring the corn to them and shoot for Supreme or Superior Grades" attitude is one firmly entrenched in the minds of Japanese beef producers. No matter how uneconomical feeding of large quantities of imported feed grains coupled with the unrealized difficulty of the Wagyu to achieve maximum marbling is, cost factors have a difficult time overcoming custom and tradition.

While this production strives for Supreme grade less than 2 percent of all Wagyu steers graded, were Supreme beef (29). With this small percentage making the top grade, fat cattle prices must be at high levels to compensate the other 98 percent who fed for the top grade but did not grade. Of the total number graded, 80 percent grade out in two grades: Excellent and Medium. Surprisingly enough however, without a mandatory grading system, the majority





Source: Japan Meat Grading Association

Figure 9. Primal cuts of Beef: Japan and United States

of animals graded are those thought to possess ability to grade Supreme or Superior, unfortunately few do.

Japanese Cattle Sector

There are no formal quantitative restrictions on the number of live cattle which may be imported into Japan either for breeding, for immediate slaughter, or for fattening. While this type of trade restriction does not occur, these animals are still subject to various tariffs and quarantine restrictions. However, with the quarantine in effect, numbers of cattle imported are limited to the availability of quarantine pens.

Breeding Animals

The importation of breeding animals by Japan is primarily male but a few outstanding females are brought in for herd improvement. These breeding cattle are usually high quality breeding stock specially selected for various genetic traits. Bulls are favored for their semen collection while females for embryo transfer and multiple calving techniques. A large portion of these animals go to government research stations and breeding services. To facilitate these herd improvement practices the Japanese government imposes no import duties on breeding livestock.

Fat Cattle

The importation of cattle ready for slaughter, allows the Japanese to receive high quality U.S. beef outside the traditional import quota. Air freighting or ocean shipping American grain-fed feedlot cattle provides the Japanese consumer with an increased opportunity to enjoy lower priced high quality beef. This opportunity is subject to fluctuating economic activities and exchange

rates. Quantities in 1980 were 3208 head while during the recession in 1982 numbers dropped to less than 1000 head (23). Since 1983, the numbers have gradually increased back to the pre-1982 level. Currently, reductions in the value of the dollar in relation to the Japanese Yen has spurred increased interest in imports. Japanese livestock traders and supermarkets are a part of this increased trade contracting 30,000 head with the state of Kansas in 1986.(13).

Constraints on imported fat cattle are: 1) capacity of quarantine pens and 2) amount of tariff. The capacity of quarantine pens for fat cattle is dependent on the number of breeding and feeder cattle currently being brought in at the time. The possible increase in total pen numbers is remote unless imported beef marketers construct new pens or solicit assistance from the government. The prospect of either happening in the near future is remote.

The tariff on large cattle (over 300kg or 660 lb.) imported for breeding purposes other than breeding, is 75,000 yen. This high tariff results in importers seeking only the highest quality animals for importation. With the grading standards used by the Japanese, large-framed Chiania, Charlois, and Simmental crossbreeds are favored due to abilities to reach 800-900 kilogram (1600-1900 pound) weights and deposit added gain in accordance with Japanese production goals.

Feeder Cattle

Feeder cattle comprise the largest group of cattle imported into Japan. These lighter than 300kg (660lb) calves are popular with cattle feeders who feed out lower quality animals. The high cost of Wagyu feeder calves leaves many producers looking for cheaper cattle. Realizing that fewer than 2 percent of all cattle will grade Supreme or Superior, the added cost of expensive feeder

calves and feed plus the possibility of not maximizing returns results in some Japanese producers to look elsewhere for feeder cattle.

Tariffs on feeder cattle make them a better economic incentive than comparable fat cattle. Imports of feeder cattle enter Japan under a tariff quota system. This tariff system includes a free primary tariff in effect to a specified number announced by the Ministry of Finance. Upon exceeding this quota, a secondary tariff of 45,000 yen goes into effect on remaining imported calves. Limiting this quantity is available quarantine facilities. This tariff allows the MAFF to exercise control over imports. The release of quarantine pens for use by imports directly relates to domestic feeder calf supplies and prices.

While the importation of feeder cattle can be economically favorable to the importing cattle feeder, there are drawbacks. The inability of foreign cattle to meet Japanese grading standards continues to disrupt trade. Attempting to overcome the grading obstacle, importers are importing large-framed European crossbreeds. English-bred Angus, Hereford and Shorthorn are not able to grade when and if able to reach 1500-1700 pounds. Thus, as in imported fat cattle, Charlois, Simmental and Chianti crossbreeds are used. Holstein calves are also popular, since they blend in well with existing Holstein herds and grade accordingly.

The wild nature of the ranch or range raised imported feeder calves contrast the typical docile Wagyu calf. This leads to handling problems for the Japanese. Their facilities lack the ability to handle large groups of possible unruly livestock. Population density also effects the Japanese when handling livestock. While these problems do exist, Japanese producers adapt to the changing conditions. One way is to import more Holstein and/or dairy bred cattle, due to their calm disposition.

Bull Semen

The continuing use of technology in livestock production leads to efforts aimed at continuing productivity and profitability. An emerging part of this technology in livestock is the increasing use of frozen semen. Meeting the governments aim in assuring adequate total income for producers and enhancement of Japan's self-sufficiency in beef production is a goal of artificial insemination (AI).

Using frozen semen of high quality bulls instead of buying registered bulls in cow/calf programs builds herd quality in a shorter time span. Japanese livestock experts agree that through selective breeding in accordance with current herd quality and herd goals. AI is a means of improving the overall quality of the nations livestock production.

Despite the widespread us of AI, the national average mating, conception, and calving rates is relatively low. Conception rates for Wagyu cattle through AI use is usually in the 82-85 percent range (24). Heat detection of open cows is the major reason for low conception rates. However, genetic research is currently providing new methods of heat detection and estrus synchronization. With these available drugs conception rates should rise is accordance with producer acceptance and use.

In 1985, Japan imported $384,000 dollars of bull semen from the United States. This value indicates the tremendous growth achieved in this market since the beginning of recording semen trade data in 1977. Trade in frozen semen appears like live cattle, to reflect global economic conditions. World recession in 1981-82 reduced semen trade between U.S. and Japan to less than $1000 dollars. But renewed interest in frozen semen trade has followed economic recovery, leading to the all-time high recorded in 1985.

Conclusions

As stated in the opening paragraph of the chapter, government involvement continues to play a major role in Japan's importation of U.S. beef and cattle. The administration of the MAFF and LIPC emphasizes assisting the producer while overlooking consumer needs. This policy has led to inflated beef prices. While inflated beef prices appear to help producers, having an artificially high price through subsidies and supports could possibly cause problems for beef producers and the Japanese beef industry as a whole in the future.

The importation of live cattle and bull semen will more than likely continue to be governed in their current manner. This indicates that world economic conditions, exchange rates, and producer costs will dictate the quantities of fat, feeder, breeding cattle, and frozen bull semen imported by Japan from the U.S.

CHAPTER V

MODEL DEVELOPMENT

Introduction

As set forth in the objectives, a portion of this study involves identifying and quantifying the impacts of selected variables on United States exports of beef and cattle to Japan. The use of econometric models to assist in this analysis requires an understanding of Japanese import procedures to determine relevant and useful equation parameters. The conceptualization of which variables impact the importation of beef and cattle into Japan was discussed throughout the summary of Japanese policies in chapters three and four. Emphasized in the previous text and relevant throughout model development and agricultural trade with Japan in general, is that government involvement can disrupt or alter trade anytime.

A review of Japanese import policies results in a better understanding of the importation of U.S. beef by the Japanese and the factors which may or may not influence import decisions. This review led to use of the basic demand function as a means to determine import demand. The basic demand function in which:

$$\text{Demand} = f(Po, Pc, Y, Pop)$$

where Po is price of beef or cattle in Japan, Pc is price of competing domestic commodities and services, Y is consumer income, and Pop is population. These parameters lead to the formation of the equations determining the

quantity of beef and cattle demanded for import from the U.S. by Japan, given the factors noted above. Computation of these equations result in an indication of how quantity of imports may shift given parameter changes.

Data Collection

The basic components of a demand function include: own price of the commodity being tested, prices and availability of other commodities and services, population size and its distribution by age and/or geographic area, consumer income and its distribution, and consumers tastes and preferences. These factors are assumed constant for a given level of demand, but with the passage of time, changes in these parameters occur.

The data to satisfy the price requirements came from the M.A.F.F.'s publication, The Meat Statistics in Japan (21). Monthly data averaged to determine annual averages for wholesale carcass prices of excellent grade Wagyu steers and retail beef prices of medium grade Wagyu steers was used. Data analyzed were yearly averages beginning January 1, 1970 and ending December, 1985.

Population, income, consumer prices, and gross national product indices were reported in issues of The International Monetary Funds Annual Statistics (13). Various issues between 1970 and 1986 were used. GNP is recorded in billion yen, population in millions, while consumer prices and consumer wages were published as indices with 1980=100.

Live cattle data including total numbers and semen imports were obtained from the U.S.D.A.'s Foreign Agricultural Trade of the U.S. (26). Sixteen years of information was gathered from respective yearly supplements. Total numbers represent number of domestic beef animals while semen imports were reflected in dollar values.

Following data collection, carcass beef price, retail beef price and GNP were converted from nominal to real terms. This procedure insured that carcass and retail prices reflected changes in consumer purchasing power. The change from nominal to real rates involved multiplying the base year of the stated or nominal value by the rate of change in the consumer price index (CPI). This index indicates the rate of change in consumer prices or inflation/deflation. GNP was converted to real terms using the GNP deflator provided by the International Monetary Fund.

Results of the rate changes in Tables III, IV and V illustrate the effects of Japanese inflation over the past 16 years. Comparisons of nominal to real rates indicate that significant inflation occurred in Japan during 1973-1974 and the early 1980's. These years coincide with the periods of global inflation or recession during the two Arab oil price increases. The figures also give a general picture of price patterns of beef in Japan. Prices of carcass and retail beef, the primary types purchased by consumers show a significant rise over the study period. However, GNP has also risen accordingly, but not at the rate of consumer beef prices.

Econometric Model of U.S. Beef Quota

The role of the Japanese government in beef imports, can not be overemphasized. Quantities imported reflect a quota amount, thus a fixed quantity not determined by consumer demand. However, the predetermined quota of U.S. high quality beef has been filled annually since the early seventies. Given this fact, the quota quantity continues to provide an indication that demand for U.S. high quality beef by the Japanese will be restricted. The size of the U.S. beef quota by Japan was chosen as the dependent variable. This quantity is stated in metric tons, as a result the model is estimated with

TABLE III

CHANGES IN JAPANESE CARCASS BEEF PRICES FROM NOMINAL TO REAL RATES, 1970 TO 1985

Year	Nominal Price Yen/Kg	Change in CPI (1980 = 100)	Real Rate Yen/Kg
1970	843	42.3	1,992.90
1971	860	44.9	1,915.36
1972	930	46.9	1,982.94
1973	1,149	52.4	2,192.74
1974	1,445	65.2	2,126.25
1975	1,640	72.9	2,249.65
1976	1,986	79.7	2,491.84
1977	2,007	86.1	2,331.01
1978	1,938	89.4	2,167.78
1979	2,056	92.6	2,220.30
1980	2,161	100.0	2,161.00
1981	2,142	104.9	2,041.94
1982	2,155	107.7	2,000.92
1983	2,168	109.6	1,978.10
1984	2,143	112.1	1,911.68
1985	2,171	114.1	1,902.71

Source: Japanese Ministry of Agriculture, Forestry and Fisheries.

TABLE IV

CHANGES IN JAPANESE RETAIL BEEF PRICES FROM NOMINAL TO REAL RATES, 1970 TO 1985

Year	Nominal Price Yen/Kg	Change in CPI (1980 = 100)	Real Rate Yen/Kg
1970	1,370	42.3	3,238.77
1971	1,470	44.9	3,273.94
1972	1,510	46.9	3,219.61
1973	1,980	52.4	3,778.62
1974	2,450	65.2	3,757.66
1975	2,710	72.9	3,717.42
1976	3,160	79.7	3,964.86
1977	3,150	86.1	3,658.53
1978	3,090	89.4	3,456.37
1979	3,150	92.6	3,401.72
1980	3,390	100.0	3,390.00
1981	3,360	104.9	3,203.05
1982	3,420	107.7	3,175.48
1983	3,510	109.6	3,202.55
1984	3,570	112.1	3,184.65
1985	3,540	114.1	3,102.54

Source: Japanese Ministry of Agriculture, Forestry and Fisheries.

TABLE V

CHANGES IN JAPANESE GROSS NATIONAL PRODUCT FROM NOMINAL TO REAL TERMS, 1970 TO 1985

Year	Nominal Rate Per/Capita Index	GNP Deflator (1980 = 100)	Real Rate Per/Capita Index
1970	701,437.60	48.0	1,461,328.34
1971	762,459.79	50.7	1,503,865.46
1972	862,030.04	53.6	1,608,265.00
1973	1,035,047.37	60.5	1,710,822.10
1974	1,034,831.15	73.1	1,415,637.69
1975	1,328,045.17	78.7	1,687,477.98
1976	1,475,720.49	84.3	1,750,558.11
1977	1,629,457.22	89.2	1,826,745.77
1978	2,779,590.94	93.5	1,903,305.82
1979	1,914,429.96	96.3	1,987,985.42
1980	2,055,985.61	100.0	2,055,985.61
1981	2,182,889.92	103.2	2,115203.41
1982	2,276,884.76	105.1	2,166,398.44
1983	2,353,574.20	105.9	2,221,505.38
1984	2,487,827.02	107.3	2,318,571.32
1985	2,624,925.61	109.1	2,405,981.31

Source: International Monetary Fund.

metric and Japanese weights, measures, prices, and indices throughout. The independent variables include carcass price, population, and real GNP. Adjusted real carcass price was used because of the type of beef being imported. U.S. beef is shipped in boxed beef form, thus its price patterns should be comparable to Japanese carcass prices. The population variable is self explanatory. Real GNP was used to represent the growth of the Japanese economy during the observed period.

The econometric model which was estimated is as follows:

JIMP = -247,307.02 - 35.07CARC + 2485.06POP
(-2.71)a (-2.65)a (1.94)b
.036RGNP
(1.59)c

R^2 = .951 F-value = 78.029

T-values in Parenthesis

Significance Levels: a = (P < .05)
b = (P < .10)
c = (P < .15)

t = 1970 - 1985

where JIMP, CARC, POP, and RGNP are respectively equal to quantity high quality U.S. imported, Japanese real carcass price, Japan's population, and Japan's real gross national product. The R^2 means that the independent variables explained 95 percent of the variation in the dependent variable over the time period 1970 through 1985 (16 years of observations). The F-value is used to determine whether the coefficients of the independent variables are

equal to zero. This F-value is significant, suggesting that it is unlikely that the coefficients are equal to zero.

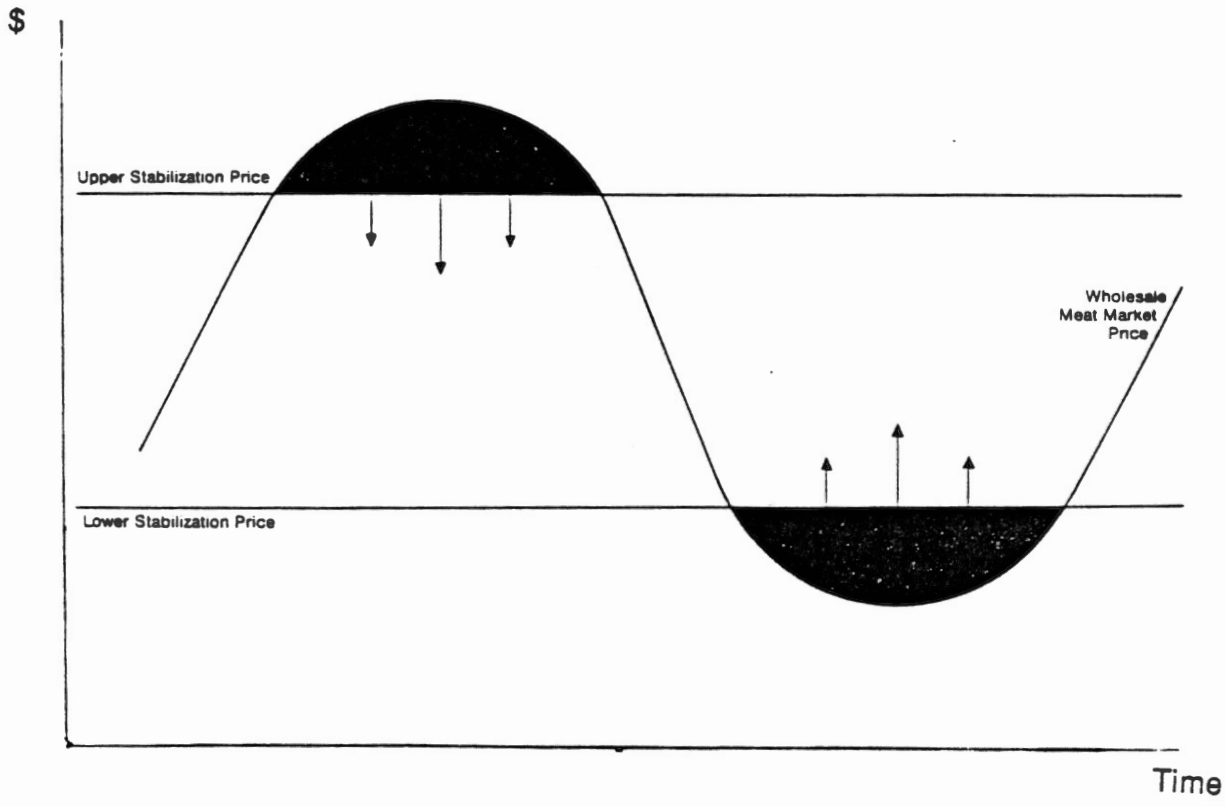
The coefficient on the CARC variable was statistically significant at the 5 percent level. The CARC variable also had the expected sign. The negative coefficient correctly represents that as Japanese carcass prices increased, the imports from the U.S. decreased. This is due to imports being stimulated by changes in the carcass price upon the price stabilization zone determined by the M.A.F.F. for domestic cattle. As the carcass price rises above the medium zone price, stocks currently in storage are released on the market. This release is used instead of increasing imports to increase supply and decrease prices. This is due to lag periods associated with locating, contracting and shipping beef across the ocean. By the time imported beef arrives, the stock release has reduced prices back towards the desired medium zone price. Hence quantity imported increases as carcass prices decrease. Figure 10 attempts to simplify the price and quantity fluctuations.

Statistically significant at $P < .10$ was the POP variable. The POP variable had the theoretical expected sign. Predicted increases in Japanese population, resulted in an increase in importation of U.S. beef.

A positive relationship was expected from the RGNP parameter. As improvements occur in the Japanese economy, consumer purchasing power and income rises, an indicator for increased consumption of beef. This is supported by the significance test at $P < .15$.

Model Evaluation

The model did a relatively good job of explaining the variation in Japanese beef imports. It indicates the general trends and direction of the U.S. beef import quota. The model tended to perform worst during times of world



Source: Livestock Industry Promotion Corporation, Tokyo, Japan

Figure 13. Simplification of Price and Quantity Fluctuations in Determining Japanese Imports of U.S. Beef

recession and inflation. This is indicated by the large gaps between the actual and predicted quantities during late seventies and early eighties. These would be expected due to the two periods of Arab oil shocks. Figure 11 provides a visual explanation of these quantities during these periods while Figure 12 shows the difference between the two. Overall, the model indicates the continued acceptance of beef by the Japanese consumer and the lack of domestic producers to keep up with consumption. These both have helped in the increases in the U.S. beef import quota.

Econometric Forecasts

Once estimates of the parameters of an economic model are available, the model can be employed to forecast the dependent variable if the associated values of the independent variables are assumed. In this situation the model used is a single equation with three explanatory variables.

In the model $JIMP_t$ = -247,307.02 - 35.07$CARC_t$ + 2,485.06POP_t + .0.036$RGNP_t$ it is assumed that data for t periods is used to estimate the parameter coefficients. If the value of the parameters in time period t+1 is given as $CARC_{t+1}$, POP_{t+1}, and $RGNP_{t+1}$, then $JIMP_{t+1}$ is forecast as $JIMP_{t+1}$ = -247,307.02 - 35.07$CARC_{t+1}$ + 2,485.06POP_{t+1} + 0.036$RGNP_{t+1}$.

The development of the forecasted values of Japanese beef import quota was through estimating future values for CARC, POP, and RGNP. These values were determined by averaging the past five periods of actual data to get an average rate of change during this period. This average rate of change was then multiplied over each of the next five years to achieve a set of values five years into the future. Table VI indicates the rate of change and the forecasted values from 1986 to 1990 for the model parameters. Determining the accuracy probability of the forecasted model is tested through the derivation of a forecast

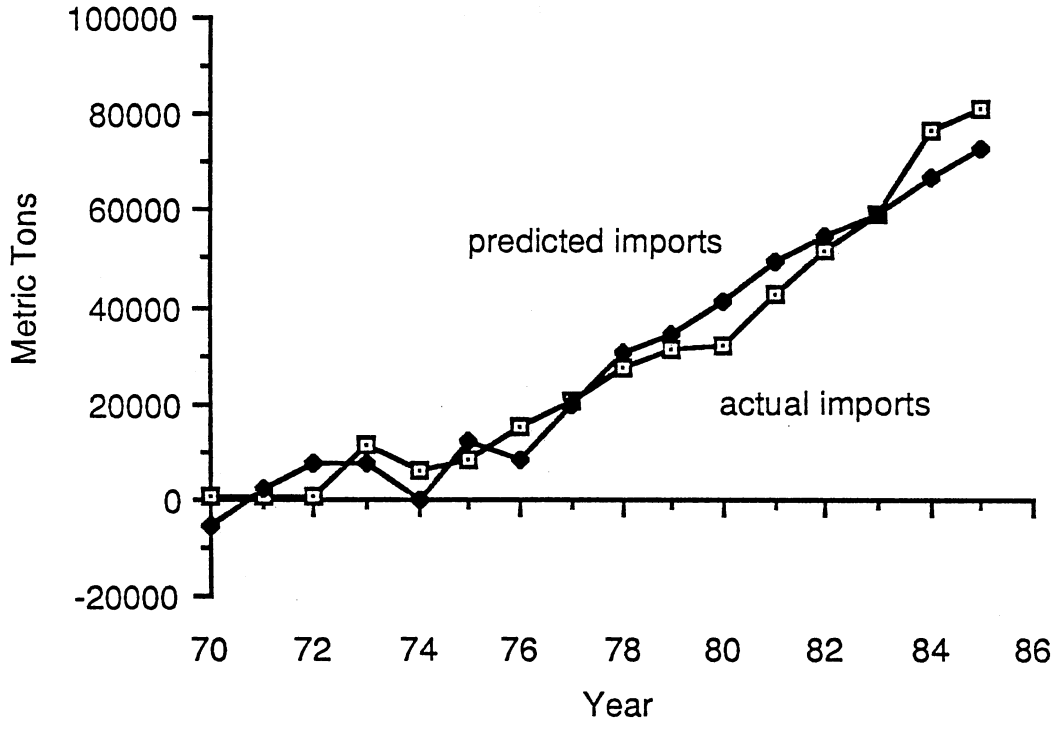


Figure 11. Japanese Imports of U.S. Beef and Predicted Quantity Imported, 1970-1985

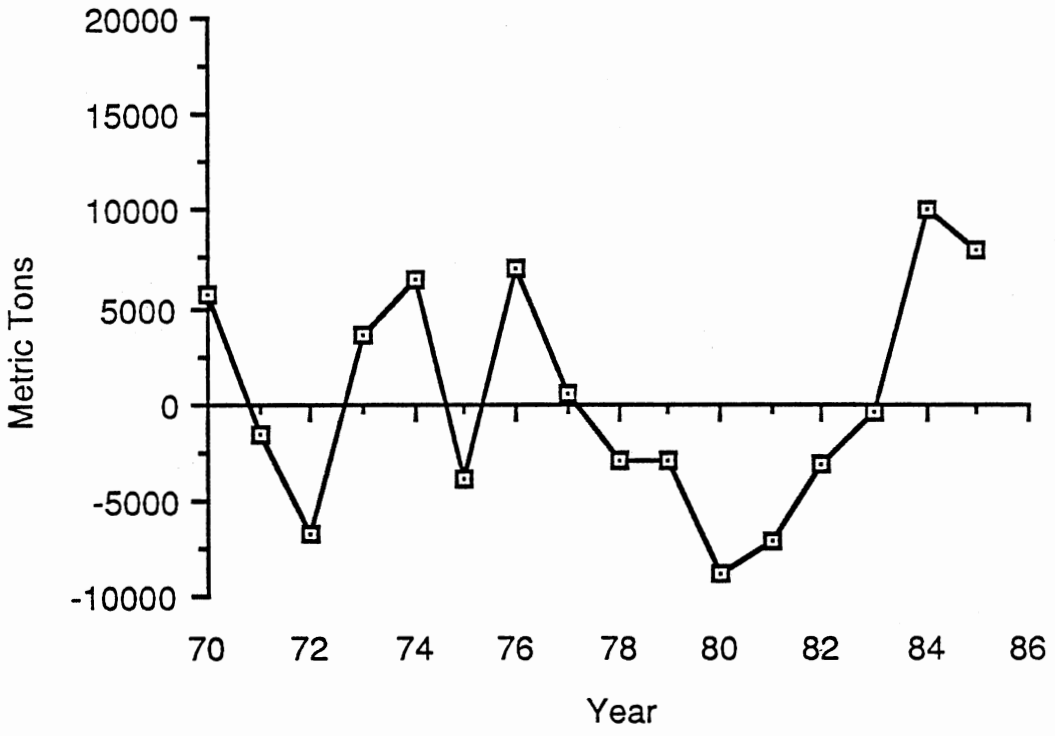


Figure 12. Predicted Error for Japanese Imports of U.S. Beef from 1970-1985

TABLE VI

PREDICTED RATE OF CHANGE IN THE PARAMETERS
OF JAPANESE U.S. BEEF IMPORT MODEL
FROM 1986 TO 1990

	Year	Carcass Price	RGNP	Population
5-Year Average Change	1980-1985	-51.66	69,999.0	0.85
Actual Change	1985	1,902.70	2,405,981.0	121.00
	----------	----------	----------	----------
Predicted Changes	1986	1,815.04	2,475,980.0	121.85
	1987	1,793.54	2,545,979.0	122.70
	1988	1,736.04	2,615,978.0	123.55
	1989	1,678.54	2,685,977.0	124.40
	1990	1,621.04	2,755,977.0	125.25

confidence interval. Included in a confidence interval is the use of sampling error and random error to derive the divergence of the actual equation mean from the estimated equation mean. (Specification error and conditioning error are assumed to be minimal and are thus ignored) Figure 13 displays the 90 percent confidence interval over the amount of beef imports being forecasted. This interval is given for each value of the parameters as the vertical distance between the two confidence bands. The interval is smallest at the average value of the given data set used to estimate the coefficients. As predictions are made for values of the parameters further and further away from this average, these intervals become larger and larger. For the beef import model, the narrow part of the confidence band occurs in 1983, then widens as expected into the future.

Econometric Model for Live Cattle

An econometric model for importation of live cattle was also developed. While the live cattle scenario is not as distorted as beef is due to government intervention, problems do occur. With live cattle, it is routine problems that face international trade. Quarantines, health requirements and transportation are obstacles that must be overcome. The data for this model were also adjusted to represent real Japanese prices. They were converted to real terms using the change in consumer prices, in the same manner as the previous beef import model. Again the period under observation is 1970-1985, a time of active live cattle trade between the U.S. and Japan.

Presentation of Model

The total number of live cattle imported from the U.S. was chosen as the dependent variable. This variable includes fat, breeding and feeder cattle. It is

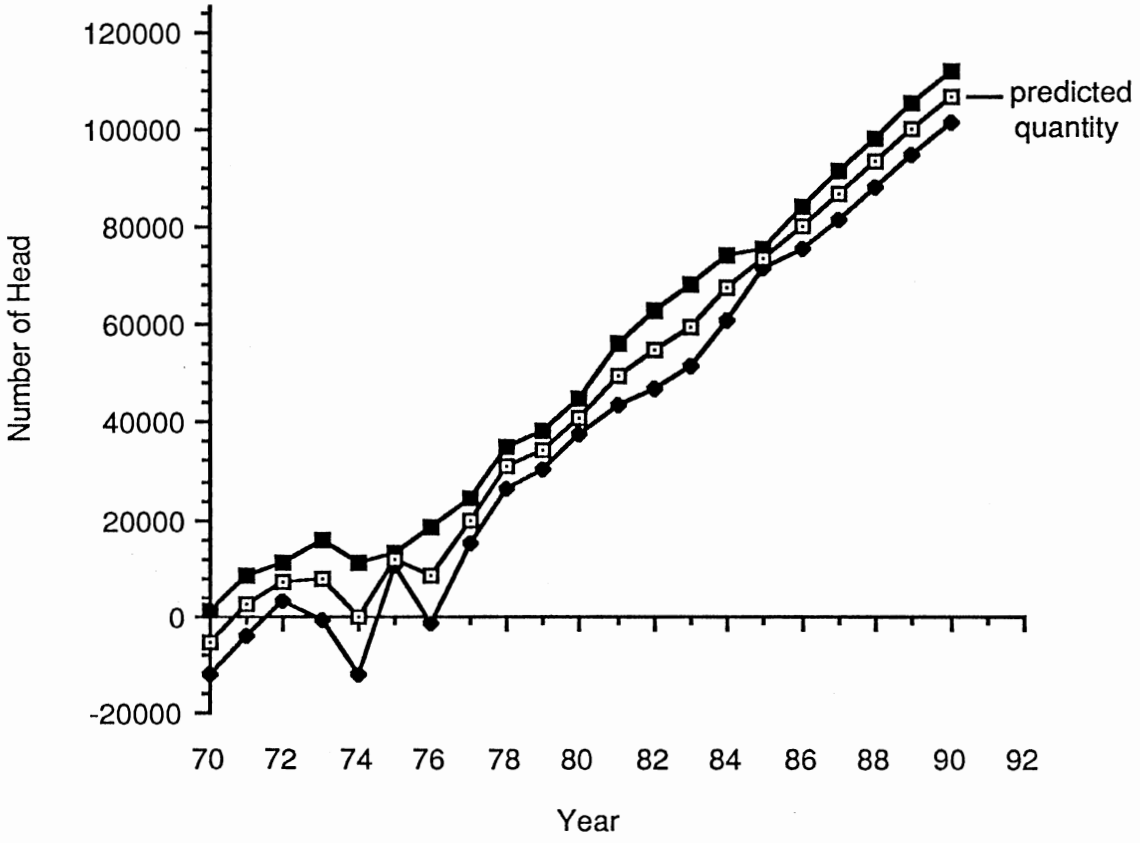


Figure 13. Forecasted Confidence Interval for Japanese Imports of U.S. Beef

represented as number of animals brought into Japan on a per head basis. Independent variables include real retail price, consumer price index (CPI), number or size of Japanese herd, and dollars of imported U.S. frozen bull semen. The real Japanese retail beef price represents the final stage of beef slaughtered in Japan. This price provides an indication to Japanese producers on what their commodity is worth to the consumer. It also provides them with the information to determine if the lag period between correlation of retail and live prices will allow them to increase herd size by normal breeding or if the quicker way of increasing herd size through importation is the most profitable. CPI provides an estimate on costs related to expenses required in breeding and raising calves. Total number indicates Japan's domestic herd size and the fluctuations that have occurred during the period. Semen imports represent a competing commodity for live cattle. This variable has become increasingly important since the early 1980's, due to ease of shipping and handling. This has resulted in increased interest by producers as an alternative to importing breeding bulls.

The econometric model which was estimated is as follows:

$$\begin{aligned} CIMP = {} & 70{,}211.99 - 12.83JPBEEF + 222.03CPI \\ & \quad (3.10)a \qquad (-3.24)a \qquad (3.14)a \\ & - 17{,}941.86NUM - 10.25SEM \\ & \quad (-2.307)a \qquad (-1.078)b \end{aligned}$$

$R^2 = .642$ F-value = 4.935

T-values in Parenthesis

Significance Levels: a = ($P < .05$)

b = ($P < .30$)

t = 1970 - 1985

where CIMP, JPBEEF, CPI, NUM, and SEM are equal to number of U.S. live cattle imported into Japan, Japanese real retail beef price, Japanese consumer price index, total number of domestic Japanese beef cattle, and dollars of U.S. frozen bull semen imported by Japan. The R^2 indicates that the independent variables explained 64 percent of the variation in the dependent variable during the 16 years between 1970 and 1985. The F-value indicates the overall significance of the regression model. This particular value of 4.95 exceeds the tabular value of F at a probability of less than 5 percent and 10 degrees of freedom. The null hypothesis is rejected that the parameters are equal to zero and that R^2 is significantly different from zero.

The coefficient for the JPBEEF variable was statistically significant at .05 probability. It also retained the expected sign as discussed above. A negative retail price parameter shows that as retail prices increase, producer income would rise due to constant high demand for beef. This would stimulate herd growth and a reduction in live animal imports.

The cost of goods and services or the CPI variable contains the theoretically correct sign and was judged significant also at .10 probability level. As was in the case for NUM and SEM variables, a negative and significant coefficient was computed. As NUM and SEM increased, the demand by Japanese imports diminishes by an amount multiplied by their coefficients, considering all other variables remain constant.

Model Evaluation

Figure 14 displays the actual and predicted imports of U.S. live cattle into Japan from 1970 to 1985, while Figure 15 shows the difference between the two. Here again, the econometric model follows the trends and directions of

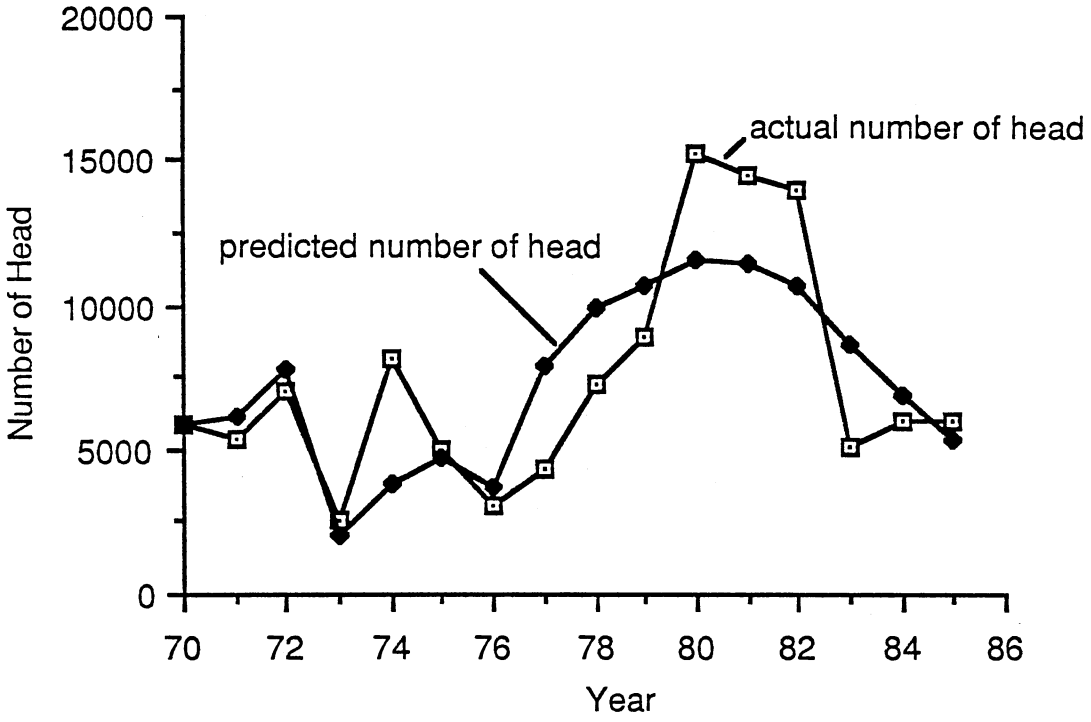


Figure 14. Japanese Imports of U.S. Live Cattle and Predicted Number of Head Imported from 1970-1985

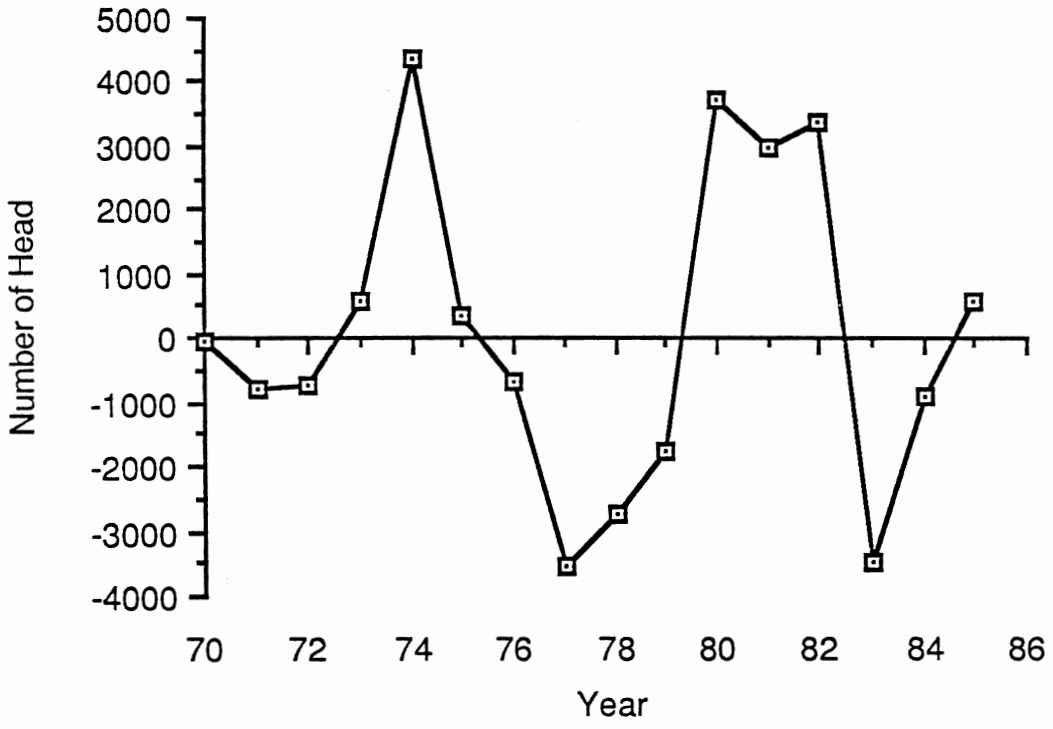


Figure 15. Predicted Error for Japanese Imports of U.S. Live Cattle from 1970-1985

actual imports. Since a major portion of this model was internal to Japan, protection from such actions as the Arab oil shocks and world recessions do not impact these parameters or this model significantly

Forecasts

In the accepted model, $CIMP_t = 70,211.99 - 12.83JPBEEF_t + 222.03CPI_t - 17,941.86NUM_t - 10.25SEM_t$, it is assumed that data for t periods is used to estimate the parameter coefficients. If the value of the parameters in time period t+1 is given as $JPBEEF_{t+1}$, CPI_{t+1}, NUM_{t+1}, and SEM_{t+1}, then $CIMP_{t+1}$ is forecast as $CIMP_{t+1} = 70,211.99 - 12.83JPBEEF_{t+1} + 222.03CPI_{t+1} - 17,941.86NUM_{t+1} - 10.25SEM_{t+1}$.

The development of the forecasted values of Japanese live cattle imports was through estimating future values for JPBEEF, CPI, NUM, and SEM. These values were determined by averaging the past five periods of actual data to get an average rate of change during this period. This average rate of change was then multiplied over each of the next five years to achieve a set of values five years into the future. Table VII indicates the rate of change and the forecasted values from 1986 to 1990 for the model parameters.

The theory used to describe the derivation of a confidence interval with beef imports also applies to the derivation of a confidence interval for live cattle imports. Figure 16 displays the 90 percent confidence interval over the number of live cattle imported being forecasted. The interval is smallest at the average value of the given data set used to estimate the coefficients, as predictions are made for values of the parameters further and further away from this average, these intervals become larger and larger. For the beef import model, the narrow part of the confidence band occurs in 1982, then widens as expected out into the future.

TABLE VII

PREDICTED RATE OF CHANGE IN THE PARAMETERS OF JAPANESE LIVE CATTLE IMPORT MODEL FROM 1986 TO 1990

	Year	Retail Beef Price	CPI	Herd Numbers	Semen
5-Year Average Change	1980-1985	-57.50	3.02	0.100	77
Actual Change	1985	3,102.50	114.10	2.587	384
Predicted Changes	1986	3,045.00	117.12	2.687	461
	1987	2,987.50	120.14	2.787	538
	1988	2,930.00	123.16	2.887	615
	1989	2,872.50	126.18	2.987	692
	1990	2,815.00	129.20	3.087	769

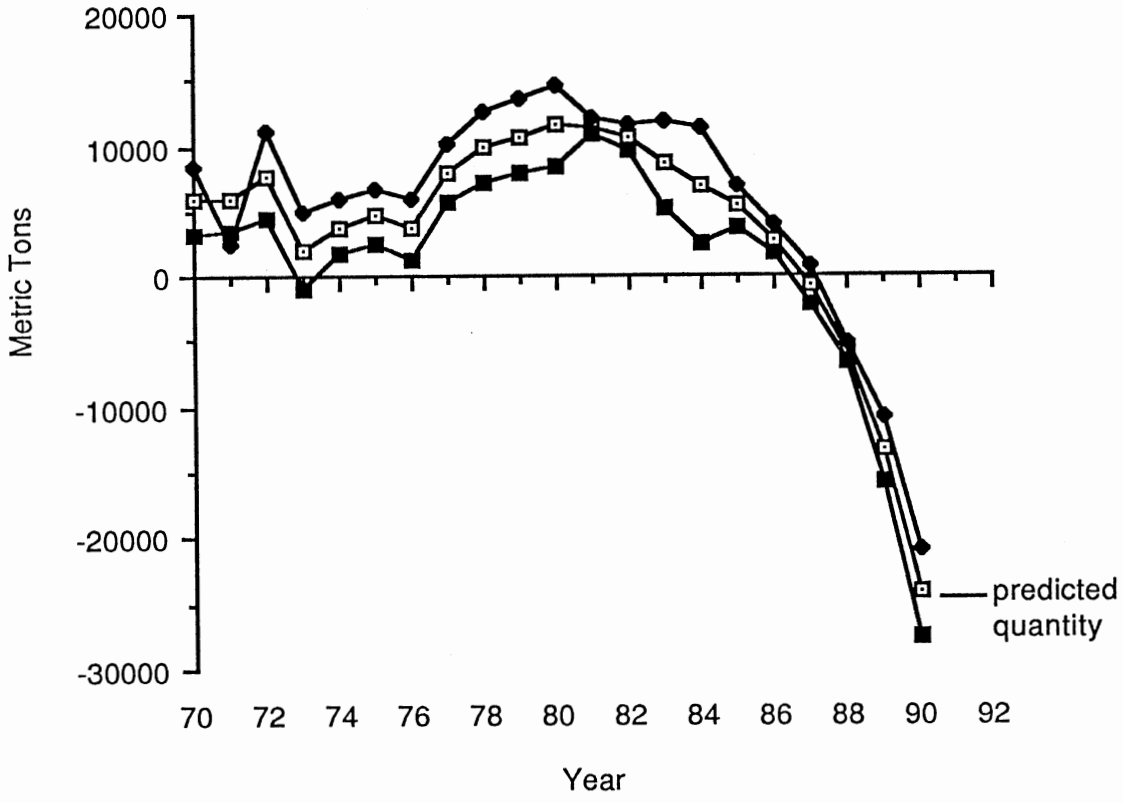


Figure 16. Forecasted Confidence Interval for Japanese Imports of U.S. Live Cattle

Conclusions

The preceding data analysis provides a general description of direction and trends in Japanese imports of U.S. beef and live cattle. While the acquired forecasts gave positive results for beef, negative results occurred for live cattle. This negative result can be attributed to the dramatic increase in frozen U.S. bull semen imports and slight increases in Japanese herd size. As with all economic forecasts, the estimation of parameter changes are arbitrary and judgmental, thus are subject to change in light of policy changes, world economic conditions and consumer attitudes.

CHAPTER VI

SUMMARY AND CONCLUSIONS

Introduction

The overall objective of this study was to identify domestic economic and international trade implications for United States beef and cattle exports to Japan. Initially a review of the agricultural industry from a historical perspective, was used to prepare the groundwork for understanding the involvement of agriculture in Japanese society.

Secondly, an examination of government policy as it pertained to Japanese agriculture was accomplished. Various degrees of government involvement was noted in the various stages of cattle production and beef processing and marketing. Its influence in the use of subsidies, import stockholding, types of beef, grades and grading of beef and cattle as well as prices was obvious. The protection of the producer through these policy actions was implemented without significant regard to consumers or government budgets.

Final analysis of the beef and cattle trade issue between the U.S. and Japan involved the development of two econometric equations. These equations were used to indicate trends and direction of beef and cattle trade currently being undertaken. They also were used to develop five year forecast of this trading scenario. Models to satisfy quantity of U.S. beef import quotas by Japan and quantity of U.S. live cattle imported were estimated and tested.

Findings

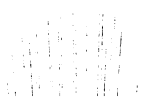
Japan's Agricultural Industry

After a review of Japanese agriculture, it was realized that laymen perceptions of Japan as a large group of small farms and thousands of rice paddies are not that extreme. However, beef and cattle also play an important role in shaping the past and current modes of agriculture in Japan.

The ideology of Japan as an industrial giant often overshadows the relationship between industry and agriculture in Japan. A prime example is the growing percentage of Japanese producers employed off the farm. In 1984 86.5 percent of farm households were part-time, this being split between farming and other jobs. Hence, while Japanese producers reap income from the land, income earned from industrial work plays an important role in agricultural growth.

Also emphasized is the powerful role of Japanese producer groups or cooperatives in local, prefecture(state), and national governments. This strong voice of the producer has resulted in the placing of many protectionist policies concerning international agricultural trade as well as huge subsidy payments to producers.

The historical sketch also noted the changes in Japanese diets over the past 40 years. It indicates a direct correlation between increase in economic activity and changes in dietary patterns. Specifically, these changes have occurred in a reduction in starch consumption and increases in protein intake. This change or adaption to a more western styled cuisine could play an important role in consumer action in food policy decisions in the future.



Government Policies

Reviewing government policies since 1961 indicates an increase in government involvement in beef imports and little change in live cattle imports. This can be attributed to increased producer concern at the processed beef level since few natural trade barriers exist for beef. The degree to which beef has been restricted or governed has somewhat coincided with changes in consumption. As consumption has increased so has government intervention in the beef industry.

Price stability and the price zones determined by the MAFF and LIPC has dictated timing of imports and release of stored stock to the public. This indirectly influences the amounts of beef imported overall through its effects on MAFF estimators and feelings among the influential producer groups by prices of domestic beef.

Econometric Models

The econometric models for beef and cattle predicted increases in beef import quotas but reductions in live cattle imports. Increases in the beef import quota was realized estimating the changes that would occur in its model parameters. Using the assumption that the parameters will continue to follow their past five year average pattern, the beef import quota increased considerably. However, while these variables indicate an increase in quota amount, government intervention in the current beef import system could alter the beef import quota anytime.

The reductions in live cattle imports can be attributed to the slight increases in Japan's domestic beef herd, continued growth in frozen bull semen imports, and increases in consumer prices. While the results dampen the role

of U.S. live cattle exports, the growth in bull semen indicates a new area of livestock trade that should be emphasized by U.S. traders.

Recommendations

The results of this study can be viewed as a condensation of U.S. beef and cattle trade with Japan. While many articles emphasize various areas of trade, the drawing together of many of the influential variables in a simplified manner can be a benefit to those involved in international relations.

Traders and trading companies (both those already serving the U.S. livestock industry in world trade and those with intentions of participating in international trade) can be versed in a summarized version of the historic current issues facing U.S. beef and cattle trade with Japan. While each trader must use their own decision making process, having access to a summary in both beef and live cattle provide an assistance in better decision making.

The econometric area of the study, while subject to many assumptions and external effects, can assist traders in formulating future changes in their particular area of interests. The changes in some of the estimated variables are often felt worldwide due to the economic influence of the Japanese market, thus a quick analysis of world markets can be used to give an estimation of effects upon Japanese beef and cattle imports.

As indicated this analysis provides a summary of U.S. beef and cattle trade with Japan. However, due to volatility of world markets, further research could be projected in various areas. Specifically, the involvement of the LIPC in beef trade and its effect on of U.S. exporters, the growth in bull semen exports not only to Japan but worldwide is an area that deserves more attention and an important area is the need to understand the changes taking place in Japanese

culture in relation to the younger generation and their perceptions of Japanese tradition and influence of the western societies.

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APPENDIXES

APPENDIX I

JAPANESE TARIFF QUOTA SYSTEM

Under the tariff quota system, specific commodities, including live cattle and variety meats, are liable to the imposition of a reduced customs tariff (primary tariff) in the case where imports of such commodities are within a specified limit, and a high customs tariff (secondary tariff) when imports exceed the limit. The quantity (tariff quota quantity) to which the primary tariff applies is the difference between the total domestic output of the commodity concerned and the total domestic demand for that commodity.

The tariff quota system is designed to protect domestic producers of commodities who compete directly with foreign imports and at the same time to meet consumers expectations for as many low-tariff imports as possible (20). Unlike the import quota system, the tariff quota system involves no direct imposition of restrictions on foreign imports, since imports are possible under the condition of the secondary tariff being paid.

Import Quota System

Beef imports are regulated under a General Quota and Four Special Quotas. The general quota is announced semi-annually and establishes the amount of beef Japan will import from all sources, i.e., the U.S., Australia, New Zealand, and Canada. These quantities are determined by taking into account domestic the supply demand situation in the relevant period.

The import quota involves a direct limitation of foreign imports beyond the mandated quota amount. The imported beef that does fall under the quota level

is assessed a 25 percent ad valorem tariff. This tariff is applied only to the quantity specified by the quota and in addition is supplemented by various surcharges designed to reduce the disparity between imported and domestic beef.

APPENDIX II

GUIDE FOR CATTLE EXPORTERS

Regulations:

Must be Herd Book animals for breeding stock, but non-registered animals acceptable for purposes other than breeding.

For dairy cattle, production records and morphological classification not required.

Trends and potential for expansion of imports:

For dairy cattle, imports will continue at the present rate to meet the needs for quality foundation stocks.

For beef cattle, there has been some criticism regarding "exotic cattle" due to small conformation and inadequate finished weight. Therefore, Japanese breeders will tend to look for larger cattle from abroad.

Main problem in importing cattle:

No major problems.

Health requirements for imported U.S. cattle:(1)

The U.S. Origin Health Certificate shall contain the following:

Certifications:

1. The United States is free of foot-and-mouth disease, rinderpest, contagious bovine exanthema, and Teschen disease.

2. The animals originate on a farm in a county where no outbreak of vesicular stomatitis has occurred during the past 6 months.

3. The animals were inspected on the farm of origin and were found free of evidence of contagious disease, including any symptoms of papular stomatitis and evidence of cattle grubs.

4. All feed and bedding used in the embarkation quarantine was wholesome and suitable for the animals involved (and when shipment is by sea) and the same kind of feed and bedding was placed aboard the ocean vessel (give name).

Other requirements:

1. The Origin Health Certificate shall show tuberculosis and brucellosis status of herd of origin:

A. 20 days to 60 days prior to shipment:

(1) Negative intradermal tuberculin test.

(2) negative intradermal Johnin test.

(3) Negative complement-fixation for Johne's disease.

B. Within 30 days of the date of exportation:

(1) Brucellosis - negative at 1-50 dilution.

(2) Anaplasmosis - negative complement-fixation test.

(3) Leptospirosis - negative agglutination-lysis test for L. pomona, at 1/400 dilution.

(4) Bluetongue - negative complement-fixation test.

(5) Vesicular stomatitiss - negative complement-fixation test.

(6) infectious bovine rhinotracheitis (IBR)

(a) Unvaccinated animals - 1 serum neutralization test, negative at 1:2 dilution.

(b) Vaccinated animals - two serum neutralization tests, the second 3 to 5 weeks after the first and test results do not show a rising titer. Date of vaccination, name of vaccine, amount of vaccine used, and titers of the tests shall be entered on the health certificate.

(c) Unvaccinated/vaccinated animals - one serum neutralization test, negative at 1:2 dilution, followed by IBR vaccination. Date of vaccination, name of vaccine, and amount of vaccine used, shall be entered on the health certificate.

(7) Bovine virus diarrhea (BVD) serum neutralization tests at 1:8 dilution. Cattle responding at this dilution of higher may be accepted provided they show no clinical symptoms of BVD and are not regarded as carriers of the disease.

(8) Vibriosis and trichomoniasis - a negative test conducted locally.

2. The embarkation quarantine period is a minimum of 7 days and the cattle must be isolated from all other animals during this period. Date of commencement and completion of embarkation quarantine shall be added to the Origin Health Certificate.

For feeder cattle exported from USA:

Embarkment quarantine:

1. Export embarkation inspection shall be performed by an APHIS veterinarian at the embarkation quarantine facility in the United States for a least 21 days to shorten a period of import quarantine in Japan (item 4 below). The quarantine period in the United States may be shortened to 7 days where a Japanese Government quarantine officer will stay for the purpose of participation in the export quarantine.

2. If any malignant communicable disease (see item 1 under statement below) is detected in embarkation quarantine, the particular lot of cattle will not be eligible for export.

3. If any cattle are found to be infected or suspected to be infected with other infectious diseases than the malignant communicable diseases, they shall be removed from the herd of origin or embarkation quarantine. The remaining cattle are eligible for export.

Import quarantine period:

4. The import quarantine period in Japan may be shortened to 15 days from the present 30 days where the cattle exported to Japan meet the above-mentioned requirement.

Statements required:

1. There has been no official report of diagnosis of rinderpest, foot-and-mouth disease, African swine fever, contagious bovine pleuropneumonia, lumpy skin disease, bluetongue, vesicular stomatitis (herein referred to as

malignant communicable diseases) for at least 1 year within a radius of 50 km around a farm(s) in which the cattle had been born and raised.

2. The cattle have not been vaccinated for any diseases listed above.

3. Upon inspection, the cattle showed no signs of communicable disease during embarkation quarantine.

4. Contagious bovine pleuropneumonia has not occurred in the United States since 1892,

5. During the embarkation quarantine period, the cattle were given a precautionary dip or spray for ticks (give method of treatment, kind of insecticide used, and date).

6. Name and address of embarkation quarantine facility.

7. Date of commencement and completion of the embarkation quarantine period.

8. Feed and litter were provided from area free from malignant communicable disease (item 1).

9. The cattle were vaccinated against IBR/BVD 15 to 30 days prior to the proposed date of exportation.

Tests (negative results) required:

1. Thirty to 60 days prior to proposed export date:

(a) Intradermal mammalian tuberculin

(b) Intradermal johnin

(c) Complement-fixation for Johne's disease.

2. Within 30 days prior to proposed export date:

(a) Complement-fixation for bluetongue.

(b) Tube agglutination at 1/50 (50 Iu/mi.) of dilution (unvaccinated for brucellosis)

(c) Agglutination-lysis for L. pomona at 1/400 dilution

(d) Complement-fixation for anaplasmosis

Transportation:

Japan requires that a certification be provided or endorsed that the cattle shall be transported without being accompanied by any other animals and without passing through areas where malignant communicable disease (see item 1, Statements and Tests) exists. Depending upon the circumstances, the statements shall be provided by the issuing veterinarian or the port veterinarian.

Other information:

The Japanese officials have advised that the embarkation quarantine facilities may be at a place other than at the port of export (point of loading) as long as it is USDA approved. Use "Standards for Premises Isolation Facilities" outlined in ANH Division Memorandum 592.105 dated October 1, 1971.

The embarkation quarantine period for livestock for export to Japan must be at least 7 days with the date of commencement and completion of the quarantine period added to the origin health certificate by the appropriate veterinarian.

The vehicles to be used to transport these animals to the port of export shall be cleaned and disinfected before loading.

The portion of an ocean vessel (or container only for containerized shipments) or that portion of their craft (or container) used for stowage of animals intended for exported shall be found to be clean or cleaned and then disinfected under official supervision with a permitted disinfectant before loading.

For shipments by sea, the port veterinarian shall add on Veterinary Services letterhead the following statement:

"I hereby certify that the ocean vessel (name) or containers aboard this ship were cleaned and disinfected before loading under official supervision with a USDA permitted disinfectant. All feed and bedding placed aboard the vessel is wholesome or suitable for the animals involved."

For shipments by air, the VS veterinarian supervising loading shall pass on VS letterhead the following statement:

"I hereby certify that the portion of the aircraft of the containers aboard the aircraft if used (give name of airline company and number of plane) for stowing the animals was cleaned and disinfected before loading under supervision with a USDA permitted disinfectant."

Animal and Plant Inspection Service,Veterinary Services, USDA. Memorandum 592.14 dated February 1, 1973.
These are for guidance only, potential exporters should consult with the USDA Federal Veterinarian on any more current regulations.

Source: "Guide to U.S. Cattle Exporters." USDA, FAS, Agricultural Handbook No.217. Revised 1976.

APPENDIX III

SIMULTANEOUS BUY AND SELL SYSTEM

The new system is the tender system which Japanese user and importer jointly bid, and it allows Japanese users to negotiate directly or through Japanese importers with foreign suppliers about items, specifications, prices and the amount of beef to be traded.

A sequential outline of the Simultaneous Buy and Sell (S.B.S). system follows:

1. LIPC informs Japanese user associations of their maximum amount to be bid to S.B.S. tender. They are also informed of the date of the bidding, time limit for delivery and other necessary conditions. The period between the announcement and the bidding is usually about three weeks.

2. All of the user associations which are currently nominated by LIPC are eligible to participate in the Simultaneous Buy and Sell System.

3. All of the foreign suppliers are eligible to participate in the trade under the S.B.S. System.

4. Upon the notification mentioned above in 1. the user associations and/or its members, with the involvement of Japanese importer if necessary,

negotiate with foreign suppliers about items, specifications, prices, the amount of beef and other conditions to be traded under the S.B.S. System.

5. The importer must be currently LIPC designated importers.

6. LIPC does not specify quality grade, yield grade, grain fed/grass fed, cutting specifications, or type of cut. Chilled beef is excluded from the S.B.S. tender. The definition of grain fed beef under S.B.S. System is the beef derived from cattle which is fed grain for more than 100 days.

7. After establishing trade conditions, the Japanese users and importers jointly bid the S.B.S. tender with the information on items, the amount of items, the user's purchasing price from LIPC and the importer's selling price to LIPC and any other necessary information.

8. Each individual price of cut will pass through price band which is established according to sort and type of the beef. There will be approximately 36 price bands for grain fed, grass fed and portion control, etc.

9. LIPC will automatically award all of the bids to both the user and importer when the user's purchasing price is over LIPC's floor price and importer's selling price is below LIPC's ceiling price and total bidding amount is within the scheduled selling and buying amount When the total bidding amount is in excess of the scheduled amount, LIPC will determine the successful bidding amounts by giving priority to the bid which is the highest purchasing price by the user from LIPC.

10. The total amount for buy and sell for the S.B.S. System is up to 10 percent of LIPC's allocated amount of quota.

11. Japanese importer and foreign supplier who are awarded permission must deliver the beef through LIPC to the users within the time LIPC sets.

Source: Livestock Industry Promotion Corporation, Denver, Co.

VITA 2

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