

**Recent Developments and Analysis of U.S.-South Korean
Agricultural Trade**

Dermot J. Hayes

GATT Research Paper 94-GATT 11
March 1994

**Center for Agricultural and Rural Development
Iowa State University
Ames, Iowa 50011**

Dermot J. Hayes is associate professor of economics, Iowa State University, Ames, Iowa.

This material is based upon work supported by the Cooperative State Research Service, U.S. Department of Agriculture, under Agreement No. 89-38812-4480. Any opinion, findings, conclusions, or recommendations expressed in this publication are those of the author and do not necessarily reflect the view of the U.S. Department of Agriculture.

CONTENTS

Introduction	1
U.S.-South Korean Agricultural Trade	2
South Korean Agricultural Policies	7
The U.S. Approach to the GATT	11
The South Korean Response to the U.S. GATT Proposal	12
Is There A Common Ground?	16
Impact of Liberalization on South Korea's Import Patterns	17
Conclusions	22
References	24

TABLES

Table 1.	Prices of selected agricultural products, 1990 (U.S. dollars per kilogram)	3
Table 2.	Imports of agricultural products (1,000 mt and million U.S. dollars)	5
Table 3.	Tariff and nontariff barriers for selected agricultural commodities used by South Korea, 1990	8
Table 4.	Calculation of producer subsidy equivalent and consumer subsidy equivalent for crops, 1987-89 average	9
Table 5.	Calculation of producer subsidy equivalent and consumer subsidy equivalent for livestock products, 1987-89 average	10
Table 6.	The effect of tariffication reduction (billion U.S. dollars)	15

FIGURES

Figure 1.	South Korean feed-grain imports	18
Figure 2.	South Korean soybean meal imports	19
Figure 3.	South Korean wheat imports	20

RECENT DEVELOPMENTS AND ANALYSIS OF U.S.-SOUTH KOREAN AGRICULTURAL TRADE

Introduction

EC Agriculture Commissioner Ray MacSharry surprised many by suggesting dramatic reductions in EC commodity prices, which would in effect recouple much of its agriculture with world prices. In July, all twelve EC agriculture ministers accepted the MacSharry proposal as the basis for negotiation. The entire package will be voted on in October 1991, and the general consensus is that some version of the MacSharry proposal will be adopted at that time.

There exists a real possibility, therefore, that the European Community will eventually find an agricultural price reform proposal that is acceptable to the United States and other GATT participants. Should this occur, it will inevitably be in the closing moments of the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) negotiations. One can then imagine a scenario in which the South Korean or Japanese negotiators are forced to decide between accepting a proposal that is politically unacceptable at home or being blamed for the failure of the GATT round. If this situation occurs and if the round fails, the South Korean and Japanese negotiators will be criticized in the United States for having assumed that the U.S. and EC negotiators would fight to a standstill and that, by adopting a wait-and-see attitude, the South Koreans could have avoided the ill will that the GATT negotiations have generated.

This reticence on behalf of the South Korean and Japanese negotiators to enter the fray, although understandable, is unfortunate. Not much is known in the United States about how far the South Korean government would go to protect the interests of its rice, produce, and livestock industries. There is evidence of a true willingness on behalf of the South Korean government to gradually open its agricultural markets—witness the constant announcements regarding the removal of commodity-specific restrictions and the obvious concerns of South Korean industry regarding trade frictions with

the United States. One might also conclude, however, that the South Korean government is posturing about its desire to open agricultural markets in the hope of delaying or reducing stronger U.S. measures. Evidence on this side includes the newer nontariff barriers that seem to spring up as soon as a restrictive trade practice is removed, the recent tax audits of conspicuous consumers (importers), and the anti-U.S. tone of newspaper editorials dealing with agricultural trade issues.

Protracted negotiations have allowed U.S. and EC negotiators time to come to an understanding about which possibilities are completely unacceptable, to find areas for which negotiations are possible, and to allow academics time to analyze potential outcomes. The absence of a similar U.S.-South Korean dialogue has meant far less mutual understanding and a noticeable lack of publicly available research on the potential impact of trade liberalization on South Korean agriculture.

This paper begins with a description of the agricultural trade between the United States and South Korea and then examines the policies that South Korea uses to manage this trade. The paper then discusses the genuine concerns of the South Korean government as it tries to develop the economy, prevent the agricultural income situation from worsening, and provide some element of food security. Finally, an assessment of what the United States should reasonably expect from South Korea in terms of trade liberalization and the impact that these concessions would have on South Korean agriculture is provided.

U.S.-South Korean Agricultural Trade

In 1991, per capita gross national product in South Korea should exceed U.S. \$6,000, which puts that country on a par with some of the southern European members of the European Community and with Ireland. Approximately 21 percent of this income will be spent on food, an amount that is somewhat less than that spent in European countries with similar per capita incomes. The primary source of calories in South Korea is carbohydrates, with per capita consumption of 118 kg and 28 kg

of rice and wheat annually. Per capita rice consumption figures are for precooked rice and are equal to an impressive (to a Western observer) two-thirds of a pound per day.

Annual consumption of beef, pork, and poultry in 1991 will average 4.5 kg, 12.2 kg, and 4.2 kg per capita, respectively, with approximately 9.6 kg of eggs and 44 kg of milk being consumed. South Korean beef and poultry consumption levels are particularly small by Western standards; however, both are growing rapidly. Beef consumption has increased by more than one kilogram per capita since 1989 and has doubled since 1982 (U.S. Agricultural Attache Reports 1991).

Table 1 shows price comparisons for selected South Korean foodstuffs for 1990. Wholesale and import prices are roughly comparable, although quality differences exist (i.e., much of the imported beef is frozen). On average, import prices are one-third to one-fourth the level of wholesale prices. Values for other commodities in South Korea, such as milk and fruits, are equally large compared

Table 1. Prices of selected agricultural products, 1990 (U.S. dollars per kilogram)

Commodity	Producer	Wholesale	Retail	CIF Imports
Milled Japonica Rice	1.60	1.65	1.76	0.35
Polished Barley	0.82	0.72	0.75	0.13
White Soybeans	1.23	1.29	1.53	0.25
Shelled Peanuts	3.41	3.66	4.66	0.72
Red Peppers	3.85	4.49	5.82	1.33
Beef	6.61	9.06	16.06	2.86
Pork	2.12	3.56	6.09	2.76
Chicken	1.44	2.72	2.84	1.32

SOURCES: U.S. Agricultural Attache Reports 1991.

those in the United States. For example, milk costs U.S. \$1.59/kg; apples, U.S. \$3.00/kg; and pears, U.S. \$3.00/kg at South Korean retail markets.

From the data in Table 1, it is clear that if South Korean consumers paid world prices for their food and continued to purchase the same foodstuffs, food expenditures would at least be one-half of current levels and less than 10 percent of expenditures. Despite this transfer from consumers, South Korean farmers earn only 80 percent of the income levels earned by their urban counterparts. Farm income is limited because the average farm size is only 0.67 hectares, a size that precludes most of the benefits of mechanization.

Table 2 shows South Korea's agricultural imports from the United States and in total. Imports are dominated by those used as raw materials for agriculture (e.g., corn, soybeans, soybean meal, and rapeseed meal) and those used as inputs for industry (e.g., hides, cotton, leather, wool, palm oil, feathers, and leaf tobacco). Many of the remaining import items are noncompetitive; that is, they can only be grown in tropical climates.

The total import value of food products that could conceivably be produced in South Korea (i.e., wheat, sugar, beef, orange juice, spirits, wheat bran, oats, sausages, and fruits) is less than \$2 billion, which is approximately 3 percent of food expenditures. This means that South Korea's 1.7 million farmers, with average farms only slightly larger than U.S. gardens, manage to provide almost all of the food needs of its 42.8 million people. This impressive achievement may explain the evident goodwill toward farmers in South Korean society.

Despite the low level of food imports, the value of South Korean imports of animal feeds and industrial raw materials is sufficient to make South Korea one of the world's leading agricultural importers. In comparison to the \$3.2 billion in U.S. agricultural exports to South Korea in 1990, U.S. exports to Japan, Canada, Mexico, and the Soviet Union in the same year were valued at \$8.05 billion, \$4.20 billion, \$2.55 billion, and \$2.26 billion, respectively. South Korea is the third-largest U.S. export market and one of the fastest growing, having increased by more than \$500 million since 1988. Preliminary figures for 1991 show a slight decrease attributable in part to feed-grain imports

Table 2. Imports of agricultural products (1,000 mt and million U.S. dollars)*

Commodity	Total		From United States	
	Volume	Value	Volume	Value
Hides/Skins	399	1,202	288	847
Corn	6,206	848	5,466	747
Cotton	434	791	282	511
Leather	57	612	18	83
Wheat	2,437	415	1,785	313
Sugar	1,076	364	-- ^b	1
Wool	48	350	1	5
Beef	101	286	25	100
Soybeans	1,009	257	798	212
Fur and Furskin	5	180	** ^c	33
Soybean Meal	463	98	--	--
Coffee	53	75	--	--
Palm Oil	220	65	--	--
Feathers/Down	6	53	3	19
Cocoa and Products	20	49	3	10
Orange Juice Concentrate	22	46	5	14
Spirits	12	45	1	1
Rapeseed Meal	398	45	--	--
Tapioca Pellets	727	44	--	--
Wheat Bran	339	40	--	--
Leaf Tobacco	8	36	2	14
Oats	22	3	--	**
Sausages	1	2	1	2
Dried Mushrooms	1	2	--	--
Lemons/Limes	2	2	2	2
Kiwi Fruit	1	1	**	**
Castor Oilseeds	2	1	--	--
Tomato Juice	1	1	1	1
Cotton Seed	3	1	--	--
Sunflower Seed	**	1	**	1
Sunflower Meal	3	**	--	--
Cottonseed Meal	256	32	--	--
Molasses	387	30	--	--
Ethyl Alcohol	73	28	5	2
Cottonseed Oil	42	25	39	22
Mixed Feed and Additives	7	20	3	6
Fish Meal	37	18	5	3
Lamb/Mutton	22	18	--	1
Candies	6	17	2	5
Rye	143	16	7	1
Malt	46	16	1	1
Starch Residue	37	14	35	13
Banana	19	15	--	--
Copra	56	14	--	--
Dairy Products	15	14	3	2
Pineapple	19	14	**	**

Table 2. Continued

Commodity	Total		From United States	
	Volume	Value	Volume	Value
Braken	4	14	--	--
Tomato Paste	13	14	1	1
Sorghum	101	13	2	**
Beef Tallow	30	12	22	9
Sesame	11	12	--	--
Almonds	3	11	3	11
Pineapple Juice	9	11	1	1
Fruit Cocktail	11	9	**	**
Alfalfa, Meal/Pellets	62	9	3	1
Raisins	6	8	5	6
Turkey Meat	4	7	3	5
Malting Barley	**	7	--	--
Canned Pork	3	6	**	2
Pork	2	6	--	--
Grain Screening Pellets	56	6	--	--
Vegetable/Flower Seeds	**	5	**	2
Pepper	3	5	**	1
Starch	10	5	--	--
Tapioca Chips	56	5	--	--
Coconut Oil	32	5	--	--
Eggs	1	5	**	**
Lactose	6	4	2	1
Pure-breeding Fowls	**	4	**	2
Peanuts	6	4	--	--
Forage Seeds	2	4	1	1
Frozen French Fries	4	4	4	4
Biscuits, Cookies, Crackers	2	4	1	3
Preparations for Infants	1	4	--	--
Grapefruits	3	4	3	4
Cinnamon	2	4	--	--
Linseed	9	3	--	--
Tung Oil	3	3	--	--
Subtotal	15,696	6,423	8,832	3,026
Other	430	450	203	156
Grand Total	16,126	6,873	9,035	3,182

SOURCE: U.S. Agricultural Attache Reports 1991.

*Estimated from 11 months of official data, CIF basis.

^bDash signifies none or negligible.

^cAsterisks signify less than 500 mt or U.S. \$500,000.

from China, despite an enormous increase in U.S. beef exports. Unless a trade war develops between South Korea and the United States, however, U.S. exports should continue on their recent expansion path.

South Korean Agricultural Policies

The South Korean government protects agricultural incomes primarily through interference in the pricing mechanism. Evans (1991) estimated that 89 percent of total government assistance in South Korea comes from various pricing policies. These pricing policies vary by commodity but typically include ad valorem tariffs of between 20 percent and 50 percent (one major exception being feed grains, for which the tariff rate is 5 percent), which are coupled with visible or invisible nontariff barriers. The visible nontariff barriers include paristatal regulation of the import process, licenses, and quotas (which can be impossible to obtain). The invisible barriers are based on the very vague wording used in individual product laws. These laws are based in part on phytosanitary regulations, the interpretation of which is left to administrative discretion.

During the past several years, South Korea has removed visible barriers on hundreds of commodities. However, the available evidence indicates that individual bureaucrats have replaced these visible barriers with interpretations of phytosanitary regulations that have the same effect. By their very nature, these nontariff barriers are difficult to quantify. Table 3 lists some selected tariffs and tariff equivalents (as measured by the South Korean government) for a wide range of commodities. In almost all cases, the effective tariff is much greater than the actual tariff level.

Other, less important pricing mechanisms are producer price supports and subsidies, which are used for brown rice, and retail price ceilings. Corn processors are forced to purchase locally grown corn when it is available, even when domestic corn prices exceed the cost of imported corn by several

Table 3. Tariff and nontariff barriers for selected agricultural commodities used by South Korea, 1990

Commodity	Tariff Equivalent	Tariff	Nontariff
	(Won/kg)	(Percent)	
Rice	786	5	License
Barley	344	10	Food use only
Soybeans	826	10	License
Corn	262	20	License
Beef	3,840	20	Quota
Pork	1,034	25-35	License
Poultry	491	25-35	License
Eggs	157	30	License
	(Percent)		
Sheep and Lamb	531	25	License
Edible Offals			
Beef	168	20	License
Poultry	43	20-30	License
Pork	--	10	--
Butter and Cheese	Banned	--	--
Potatoes	--	30	License
Nuts	200-600	30-50	License
Apples	108	50	License
Pears	147	50	License
Other Fruit	50-250	50	License
Dried Fruit	689	50	License
Wheat	303	10	License

SOURCE: Choi et al. 1991.

hundred percent. In addition, corn producers receive subsidized fertilizer and are compensated for losses on inputs purchased on credit.

Tables 4 and 5 provide more detail on the commodity-specific impact of these policies (as measured by the U.S. government). The data provided for livestock support are somewhat high in that they fail to reflect the higher input costs paid by producers for grains. The only commodities for which the majority of the support is not price driven are pork and eggs. For these commodities, marketing assistance, infrastructural support, and regional support policies are important.

The producer and consumer subsidy equivalents presented in Tables 4 and 5 are somewhat dated; recent evidence indicates that the South Korean government is moving away from price support

Table 4. Calculation of producer subsidy equivalent and consumer subsidy equivalent for crops, 1987-89 average

Item	Unit	Rice	Corn	Barley	Wheat Flour	Soy- beans	Refined Sugar
Producer Subsidy Equivalent							
Production	1,000 tons	1/5,809	118	1/531	NE	231	NE
Producer Price	Won/kg	2/972	289	3/568	NE	955	NE
Producer Value	Bil. won	5,646	34	302	NE	221	NE
Policy Transfers							
Price Intervention	Bil. won	4,353	25	250	NE	175	NE
Marketing Assistance	Bil. won	112	--	6	NE	4	NE
Infrastructure Support	Bil. won	280	--	6	NE	4	NE
Regional Support	Bil. won	87	1	4	NE	3	NE
Inputs Assistance	Bil. won	28	--	4	NE	3	NE
Total Policy Transfers	Bil. won	4,860	26	270	NE	189	NE
Producer Subsidy Equivalent	Percent	86	76	89	NE	86	NE
	U.S. \$/ton	1,145	297	691	NE	1,127	NE
Consumer Subsidy Equivalent							
Consumption	1,000 tons	5,652	NE	531	1,667	1,256	662
Consumer Price (wholesale)	Won/kg	1,008	NE	466	226	967	474
Total Consumer Cost	Bil. won	5,697	NE	247	377	1,215	314
Total Policy Transfers	Bil. won	-4,444	NE	-200	-54	-965	-169
Price Intervention	Bil. won	-4,444	NE	-200	-54	-965	-169
Consumer Subsidy Equivalent	Percent	-78	NE	-81	-14	-79	-54
	U.S. \$/ton	-1,075	NE	-509	-16	-1,046	-341

SOURCE: Evans 1991.

Table 5. Calculation of producer subsidy equivalent and consumer subsidy equivalent for livestock products, 1987-89 average

Item	Unit	Beef	Pork	Chicken	Eggs	Milk
Producer Subsidy Equivalent						
Production	1,000 tons	167	431	148	380	1,565
Producer Price	Won/kg	5,023	1,795	1,623	845	333
Producer Value	Bil. won	871	774	240	321	521
Policy Transfers						
Price Intervention	Bil. won	512	81	60	61	295
Marketing Assistance	Bil. won	18	27	8	18	14
Infrastructure Support	Bil. won	21	33	10	10	16
Inputs Assistance	Bil. won	--	1	--	--	--
Regional Support	Bil. won	10	15	4	54	8
Total Policy Transfers	Bil. won	561	157	82	83	333
Producer Subsidy Equivalent	Percent	67	20	34	26	64
	U.S. \$/ton	4,636	480	753	314	292
Consumer Subsidy Equivalent						
Consumption	1,000 tons	202	423	148	380	1,176
Consumer Price	Won/kg	8,265	3,139	1,792	1,034	756
Total Consumer Cost	Bil. won	1,670	1,328	265	393	889
Price Intervention	Bil. won	-1,128	206	-85	-133	-725
Total Policy Transfers	Bil. won	-1,128	206	-85	-133	-725
Consumer Subsidy Equivalent	Percent	-68	16	-32	-34	-82
	U.S. \$/ton	-7,692	653	-785	-489	-851

SOURCE: Evans 1991.

policies. In June 1990, for example, the government provided one trillion won to the Korea Agricultural and Fishery Development Corporation to subsidize low-interest loans to farmers and to finance infrastructural programs in rural areas and job training programs for those wishing to leave agriculture (*Newsreview* 1990). In February 1991, the government announced the creation of 45 industrial farming villages to provide off-farm employment and provided 77 billion won to buy waste disposal systems for livestock producers. The government also announced plans to spend 2.5 trillion to 3 trillion won to compensate farmers for losses resulting from market openings during the 1992-96 period (*Newsreview* 1991).

The U.S. Approach to the GATT

From the discussion on prices and farm structure presented earlier, it is apparent that South Korea has a very uncompetitive agricultural sector. The opposite is true of the United States. Recent work by the U.S. Department of Agriculture (USDA) shows that the greatest competitive advantage for the United States is in agriculture and that this advantage has increased over the past 20 years (Vollrath 1991). The United States has had considerable success in convincing other countries to accept its proposal to tariffify and in gradually removing all its import barriers. To date, most of the debate at the GATT negotiations has occurred among the negotiators from the United States, the European Community (which has led the movement against liberalization), and a group of agricultural exporters known as the Cairns Group. Japanese and South Korean negotiators have attended the meetings and participated in the discussions, but the perception (in the United States) is that they are avoiding the more confrontational and controversial issues in anticipation of a much more moderate and acceptable outcome than the one the United States currently proposes.

It is not yet clear which prices will be used to establish the tariff level if tariffication is accepted; however, one possibility would be to compare wholesale prices with CIF prices, as has been done in Table 2. The tariff required to equate these prices would then be substituted for all existing barriers.

Depending on the nature of the agreement, this tariff would then be reduced by between 5 percent and 6 percent per year for five to ten years. From Tables 1 and 2, it is clear that tariffs of 200 percent to 400 percent would be required in South Korea. For example, the required tariff for Japonica rice obtained by using the prices in Table 1 would be 370 percent. A 5 percent reduction in this tariff would mean an annual 6.5¢/kg reduction in domestic rice prices (assuming that world prices did not increase). A 30 percent reduction would mean a 33¢/kg reduction in domestic prices, and producer prices for rice would decrease from U.S. \$1.60/kg to U.S. \$1.27/kg. For other commodities, the required reductions would be even more severe.

The South Korean Response to the U.S. GATT Proposal

South Korean farmers are currently the “poorer cousins” in relation to their city counterparts. A 33¢/kg reduction in rice prices, as calculated in the previous section, would effectively eliminate all returns to labor and make a low-income situation even worse. This situation would have the desirable effect of moving labor and capital into the urban sector where it is badly needed, but the social disruption would be enormous. Existing policies have greatly increased incomes in urban areas and are encouraging young people to move to the cities. The young people who remain in rural areas find it difficult to find suitable marriage partners and must face life in communities that are gradually dying (Hayes 1990).

A large reduction in farm prices would reduce the value both of fixed assets in the rural sector and of breeding animals, which would reduce the wealth and income of farmers. South Korean society seems well aware of this issue and is prepared to pay more for food until it is resolved.

With these issues in mind, the South Korean government responded to the U.S. tariffication proposal by stating its support for a conclusion to the negotiations that leads to a “fair and market-oriented trading system.” The government also asked that any agreement take into account the underdeveloped nature of South Korean agriculture, the desire to achieve some measure of food

security, and the preservation of rural culture and employment. South Korea originally proposed a list of 16 commodities that would be excluded from tariffication and requested that tariffication of the remaining products be gradual and implemented on a commodity-by-commodity basis over a seven-year period beginning in 1991. Once those commodities have been tariffied, South Korea offered a 30 percent tariff reduction over a ten-year period (Choi et al. 1991).

The South Korean government also promised to allow imports of up to 1 percent of domestic consumption, but asked that safeguard measures be adopted to avoid import surges. The government requested an exemption from commitments to reduce internal support to producers and argued that, as a developing country, South Korea should be allowed to retain its rural development, income-stabilizing, and food security programs and general services. In effect, therefore, the entire proposal consisted of an agreement to tariffy only the less important agricultural items and to reduce tariffs by 30 percent over a 17-year period. Later, in response to U.S. concerns about the proposal, South Korea reduced the list of excluded items to nine: rice, barley, soybeans, corn, beef, pork, chicken, milk, and eggs (*Newsreview* 1990b).

In December 1990, as the original round of GATT negotiations became bogged down, U.S. negotiators became frustrated with the last-minute rejection by the European Community, Japan, and South Korea of compromise proposals. Of concern to the United States was the distribution of anti-U.S. and anti-import comic books to South Korean children by what was perceived to be an organization controlled by the government. U.S. officials talked openly of revenge and accused the South Koreans of renegeing on earlier agreements by replacing visible barriers with invisible ones (*Newsreview* 1990c). In 1991, the South Korean government reduced the list of excluded items to include only rice and put the other eight items into the 17-year reduction plan.

The response of South Korean farmers, consumers, writers of newspaper editorials, and academics to the ongoing GATT discussions was truly remarkable. Even before the government

began reducing the list of excludables, South Korean producers and producer groups had begun a vocal opposition strategy. Many of these producers were frustrated by existing prices and debt loads and the relative decline of the South Korean agricultural sector. The GATT negotiations were perceived as a way of making a bad situation worse, and the very modest government proposal was perceived as a way to devastate South Korean agriculture (*Newsreview* 1990a).

Editorials from *Chosun Ilbo* and *Korea Times* were also very anti-GATT and anti-United States. Phrases used in these articles included "prejudice against Korea," "aiming at Korea," "Korea's sacrifice," "one year under extreme U.S. pressure," "Korea dragged," "one-sided suffering," "Korea pushed to the corner," "let us fight," "U.S. arrogance in trade negotiations," and "continuous U.S. pressure" (Choi and Kim 1989).

A survey published in 1989 showed that only 33 percent, 59 percent, and 46 percent of students, businesspeople, and politicians, respectively, agreed with the statement that U.S. pressure to open markets was understandable. The percentages agreeing with the statement that the GATT is not an effective mediator in South Korean-U.S. relations were 85 percent, 81 percent, and 81 percent, respectively, and the percentages agreeing with the statement that an equal partnership between the United States and South Korea is no longer possible were 54 percent, 97 percent, and 98 percent, respectively. This survey was conducted before tensions at the GATT mounted in 1989 and 1990, and opinions today would probably be even more anti-United States.

Academic analyses of the likely impact of a GATT agreement--performed primarily at the Korea Rural Economic Institute--have also been overwhelmingly negative. For example, Lee (1990) estimated that South Korean producers would lose U.S. \$7.8 billion in surplus if the market were opened and indicated that, for red beans, rye, barley, corn, sorghum, buckwheat, milled soybeans, peanuts, rape, sesame, bananas, garlic, and red peppers, "the possibility of zero production after liberalization could not be excluded." Lee, Cho, and Cho (1990) estimated the effects of 30 percent,

40 percent, and 50 percent tariff reductions on the amount of value added in selected agricultural industries. These results are summarized in Table 6 and show that, under a 30 percent reduction, the value added in rice production would decrease by 40 percent and the value added in beef production would decrease by 50 percent. Interestingly, the results show that the value added in fruit production would increase, regardless of the degree of liberalization.

The results just summarized show that the South Korean government's ambiguous attitude toward the GATT is well founded. Because South Korean agriculture is so well protected and because the farm structure is so underdeveloped, South Korean agriculture would be badly affected by a moderate (30 percent) reduction in tariffs. South Korean consumers, in part because of concerns about food safety and in part because of sympathetic feelings for farmers, are very concerned about the situation.

Table 6. The effect of tariffication reduction (billion U.S. dollars)

Commodity	1989 Value Added	2001 Value Added		
		30 Percent Reduction	40 Percent Reduction	50 Percent Reduction
Rice	8.08	4.91	4.18	3.48
Vegetables	3.08	3.76	3.60	3.45
Fruit	1.11	1.49	1.49	1.49
Livestock	2.15	2.26	2.13	2.03
Beef	1.12	0.65	0.54	0.44
Others	3.47	2.53	2.41	2.30
Total	17.90	14.94	13.82	12.75

SOURCE: Lee, Cho, and Cho 1990.

Note: Values are based on real 1989 U.S. dollars and a conversion factor of 671.4 won/U.S. dollar.

Is There A Common Ground?

With a somewhat unstable political situation, genuine concerns about the security of the food supply, a relatively poor rural sector, and a vocal producer lobby, it would be political suicide for South Korea to accept the current U.S. proposal for a 70 percent reduction in the tariff equivalent of its import-restricting policies. However, it is also extremely unlikely that the European Community would accept the current proposal. A more likely outcome is European acceptance of the 30 percent reduction over five years from a 1990 base proposed by Mats Hellstrom, the Swedish foreign minister. South Korea has effectively offered a 30 percent reduction over 17 years if rice is excluded.

Rice occupies an almost mystical position in South Korean culture. It is the principal component of the diet, the primary source of agricultural incomes, and employment and exercise to older producers who may not wish to or are incapable of working in industry. The South Korean government would find it very difficult to open its rice market under these conditions.

For many other commodities, however, the situation is less serious. Economic incentives are in place to reduce the number of people in agriculture, and one might therefore expect a gradual improvement in the structural situation. Also, production of certain fruit crops could survive, even under complete liberalization. As incomes and the demand for these commodities increase, land will be diverted for increased fruit production.

The original South Korean proposal was probably formulated in 1988. Four years have since passed, and it will probably be another year before an agreement is finalized. The provisions of an agreement would not be implemented until January 1993 at the earliest. Thus, six years will have passed since South Korea decided that it needed seven years to begin tariffication, so it should not be too difficult for South Korea to agree to tariffy by 1993. However, there may be a small group of commodities for which an extension is merited, including garlic and red pepper (important foods in

South Korea that would be greatly affected by tariffication). The question then arises as to whether the United States and other GATT participants are prepared to exclude rice and possibly one or two other commodities in return for full liberalization.

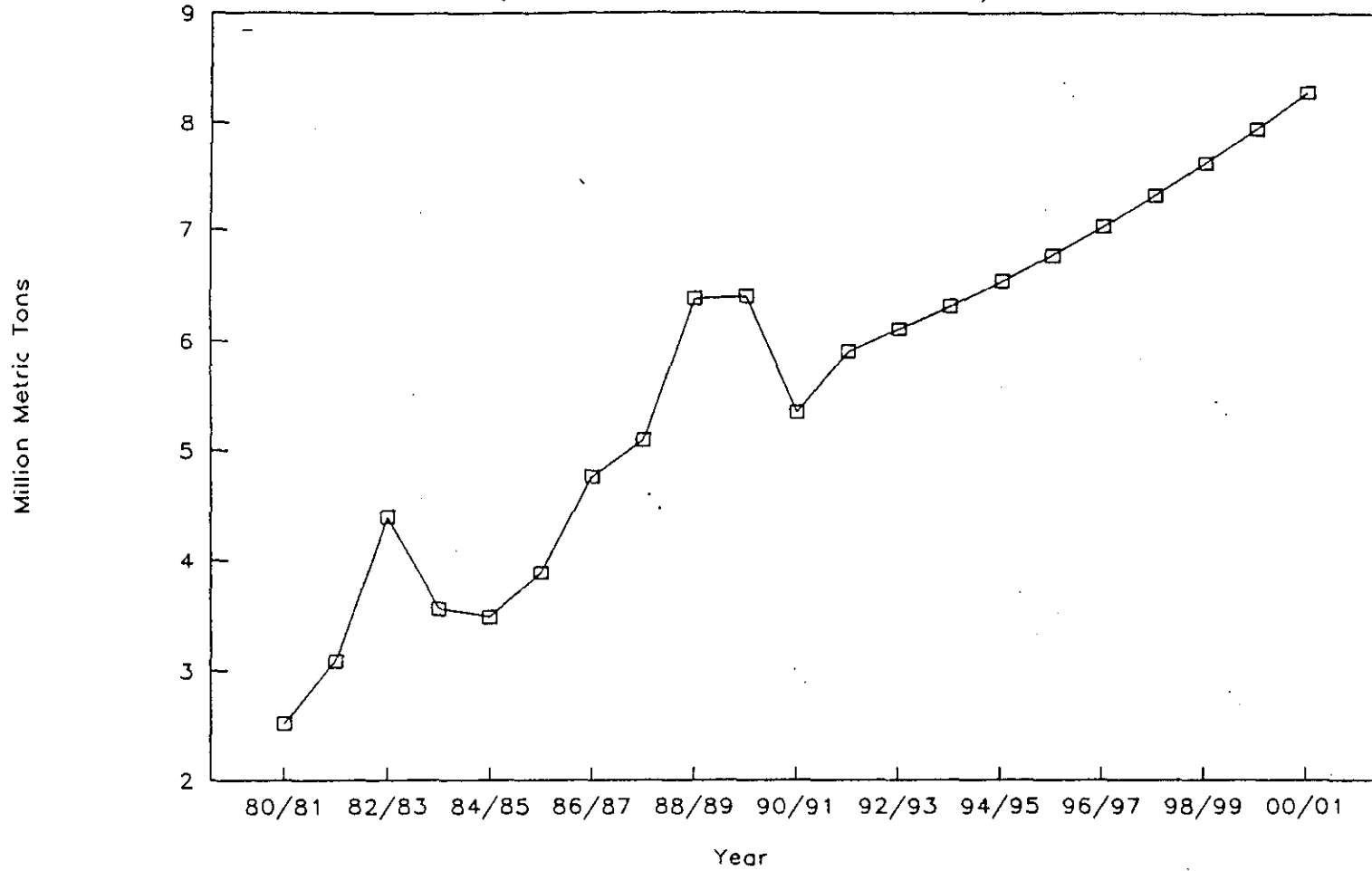
Any new rice import markets created by tariffication of the South Korean rice market would increase worldwide demand for high-quality Japonica rice. Because Japonica rice is grown in California, U.S. producers would benefit in the short run. However, expansion of California's rice area could occur only if additional subsidized water is provided. In addition, other Asian countries such as Thailand and China could eventually produce high-quality Japonica rice. The United States would then have to choose between subsidized U.S. production or unsubsidized Thai production.

Paddy land ties up a significant proportion of the agricultural area of South Korea. If this land was removed from rice production, other uses would be found. This change would inevitably lead to increased production of other commodities for which the United States may have a more dominant position. This situation might make it possible for the United States to exempt rice and would, therefore, indicate that a solution is possible. South Korea would agree to reduce its tariffs by approximately 30 percent beginning in January 1992, and rice and possibly one or two other commodities would be excluded. The South Korean government could tax consumers more as food prices fell and provide direct income support to farmers.

Impact of Liberalization on South Korea's Import Patterns

Figures 1, 2, and 3 show projections of South Korean imports for feed grains, soybean meal, and wheat, respectively, under a 33 percent tariff reduction from a 1986-88 base (FAPRI 1991). Because South Korea has made some reductions in the tariff equivalent of its import policies since the 1986-88 base period, these 33 percent reductions would have less impact than a 30 percent reduction from a 1990 or 1991 base. These projections are suspect, however, because the assumptions on which they are based assume no structural change in South Korean agriculture.

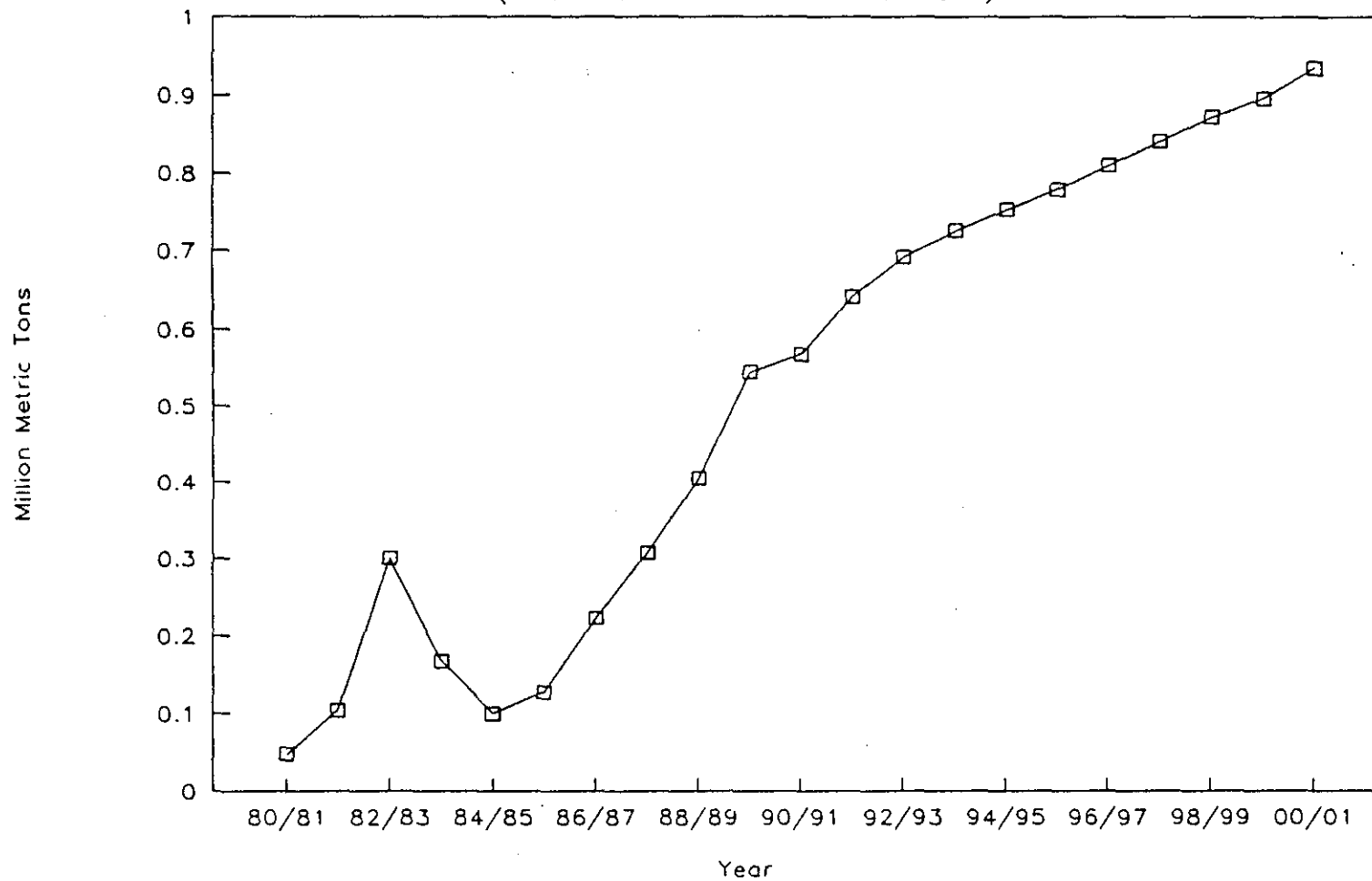
Fig 1. South Korean Feed Grains Imports
(moderate GATT liberalization scenario)



SOURCE: Based on FAPRI 1991.

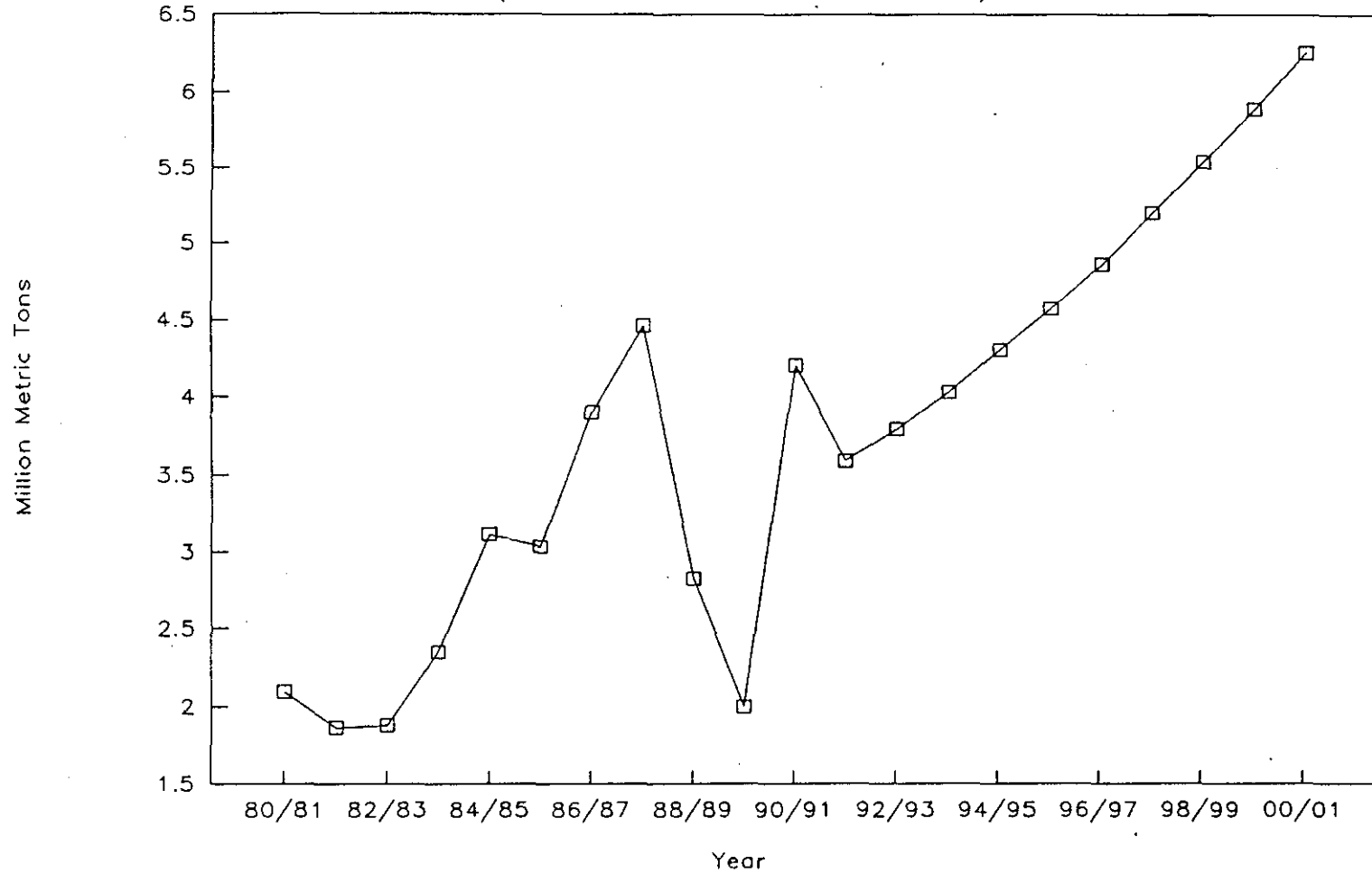
Fig 2. South Korean Soymeal Imports

(moderate GATT liberalization scenario)



SOURCE: Based on FAPRI 1991.

Fig 3. South Korean Wheat Imports
(moderate GATT liberalization scenario)



SOURCE: Based on FAPRI 1991.

South Korea is expected to import 160,000 tons of beef in 1991 and will begin importing pork in 1992. Under almost any scenario, livestock product demand in South Korea will continue its recent growth pattern. What is not obvious, however, is whether South Korea will continue to import feed grains with which to produce these products domestically, as most liberalization scenarios have assumed, or whether it will begin importing meats directly.

Two factors could affect these trade patterns: the United States has recently developed technologies for transporting chilled rather than frozen meats and existing South Korean import barriers are greater for meats than for feed grains. Any removal or reduction of these barriers would therefore favor meats over feed grains.

The relevant question is whether it is more economical from a cost perspective to produce meats in the United States, where feed grains are in surplus supply, or to transport the grains to South Korea for feeding. The answer will depend on the relative costs of transporting chilled meats and feed grains, the relative costs of farm labor in the United States and South Korea, and the relative feed-conversion efficiencies.

Transporting one ton of chilled meat from the Midwest to South Korea costs approximately ten times more than transporting one ton of feed grains, but this ratio is falling as Japan steps up importation of chilled meats. It takes approximately 17 pounds of feed grains to produce one pound of boxed beef and ten pounds of feed grains to produce one pound of boxed pork (Hayes 1991). The economics of the situation will depend on labor costs, labor efficiency, and feed-conversion efficiencies in South Korea. If we assume that feed-conversion efficiencies are the same in both countries, the issue will be decided by relative labor costs. As South Korean real wages increase relative to those in the United States and as the tariffs against meat imports decrease, it seems likely that additional beef needs and perhaps additional pork needs will be imported. This means that the

structural composition of South Korean's agricultural imports could change, which makes economic estimates such as the ones presented here very problematic.

Conclusions

South Korea's export-driven economy has been enormously successful at providing jobs and income growth in urban areas. By comparison, South Korean farmers have much lower incomes and are inefficient. Thus, one might argue that although South Korea qualifies as a developed country, its agricultural sector is that of an underdeveloped country.

In theory, rising incomes in South Korea should have created an increase in food imports from the United States; yet, apart from increased imports of feed grains for South Korea's livestock industry, this import growth has not materialized. South Korea has managed to maintain self-sufficiency in basic foods and to slow (but not halt) the necessary adjustments in its agricultural sector by using licenses, quotas, and tariffs that keep domestic prices two to three times those that exist in world markets.

U.S. policymakers and their constituents have criticized South Korea's desire for free access to U.S. markets while restricting U.S. entry to South Korean markets. The U.S. tariffication proposal has effectively highlighted South Korea's protectionist policies and in doing so has antagonized much of South Korean society. Should the United States and the European Community manage to agree in the ongoing GATT negotiations, increasing pressures will be brought to U.S.-South Korean relations. In such an event, the South Korean government will be forced to choose between reducing agricultural support on the order of 30 percent, which will be very unpopular, or risk being held responsible for the failure of the GATT round.

In this paper, it has been argued that a compromise exists requiring U.S. acceptance of South Korea's proposal to exempt rice and South Korean acceptance of a faster reduction in the rate at which it tariffs. It has also been argued that, because of the degree of protection that currently

exists, liberalization will change the composition of imports; for example, marginal beef and pork needs may be imported. This situation would reduce the growth rate of feed-grain imports and make it difficult to predict future trade patterns using available econometric models.

South Korea and the United States continue to be ideal trading partners, and the success of a GATT round promises to cement that relationship. Insensitive, aggressive, or hurried negotiating methods, however, could alienate South Korean society, thereby placing the South Korean government in a very difficult political situation. With the exception of the rice issue, which is much more important to South Korea than to the United States, the only substantial difference in positions between the two countries lies in the rate of tariff reduction. However, the GATT process has consumed (and will consume) so much time that South Korea will have been given the additional time needed to ease the transformation process. It seems likely, therefore, that a compromise acceptable to both parties can and will be found.

References

- Choi and Kim. 1989. "Korea-U.S. Trade Friction Content Analysis of the *Chosun Ilbo*, *Korea Times*, *Washington Post*, and *New York Times*." *Korea Observer* XX 4:507-35.
- Choi, Y.B., J.O. Lee, S.K. Choi, D.M. Kim, H.H. Kim, O.B. Kwon, J.K. Suh, and J.B. Lim. 1991. *Research on Establishing Strategies Against UR Agricultural Negotiation and Import Liberalization*. Seoul, South Korea: Korean Rural Economics Institute.
- Evans, Jalbert. 1991. "Government Intervention in South Korean Agriculture." *World Agriculture* 1991, 40-47.
- Food and Agricultural Policy Research Institute (FAPRI). 1991. "Implications of a GATT Agreement for World Commodity Markets, 1991-2000. Scenario A: Moderate Support Reductions of 50-33-33 with Expenditure Disciplines on Export Subsidies." GATT Research Paper 91-GATT. Ames: Iowa State University, Center for Agricultural and Rural Development, January.
- Hayes, Dermot J. 1990. "Fact-Finding Mission to Seoul, South Korea." Department of Economics, Iowa State University, Ames, May.
- _____. 1991. "The Impact of Trade Arrangements on Farm Structure and Food Demand: A U.S. Perspective." Paper presented at the XXI International Conference of Agricultural Economists, Tokyo, Japan, August 22-29.
- Lee, Jae-Ok. 1990. "An Analysis on the Economic Effects of Agricultural Import Liberalization in Korea." *Journal of Rural Development* 13: 9-23.
- Lee, J.H., D.R. Cho, and J.H. Cho. 1990. "A Note on the Effect of UR Negotiations on Korean Agriculture." *Korea Rural Economic Review* 13: 63-72.
- Newsreview* 1990. July 7.
- Newsreview*. 1990a. "Ag Fisheries Development Corporation Launched." July 19.
- _____. 1990b. "GATT Minister Calls for Korea to Make Concessions." October 27.
- _____. 1990c. "Talks Confirm Uncomfortable Trade Lies with U.S. after UR." December 22.
- _____. 1990d. "Uruguay Round Seen as Threat to Farmers." October 20.
- _____. 1991. April 6.
- U.S. Agricultural Attache Reports. 1991. "GEDES Voluntary Report," KS1021. Seoul, South Korea: Foreign Agricultural Service.

Vollrath, Thomas L. 1991. "U.S. Trade in Competitive World Markets." *Food Review* (January-March): 26-30.