FS 97-20 December 1997

Non-Tariff Barriers and Political Solutions to Trade Disputes:

A Case Study of U.S. Poultry Exports to Russia*

by

**Glenn C.W. Ames

^{*}Paper presented at the annual meeting of the Southern Agricultural Economics Association in Little Rock, Arkansas on February 1-4, 1997.

^{**}Professor, Department of Agricultural and Applied Economics, University of Georgia, Athens, Georgia, 30602-7509. Ph:(706)542-0757, Fax:(706)542-0739, Email: games@agecon.uga.edu

Non-Tariff Barriers and Political Solutions to Trade Disputes:

A Case Study of U.S. Poultry Exports to Russia

Abstract

This paper examines the recent U.S.-Russian trade dispute over poultry meat exports.

Russia embargoed U.S. poultry on February 16, 1996, alleging that the U.S. inspection system did

not meet Russian standards. An agreement signed on March 25, 1996, establishing an inspection

criteria for exports to Russia and a testing protocol for salmonella and residues, resolved the trade

dispute. Analysis indicates that Arkansas leg quarters prices are closely linked to U.S. poultry

exports to Russia.

Keywords: Non-tariff Barriers, Trade Disputes, Poultry, Russia.

Non-Tariff Barriers and Political Solutions to Trade Disputes:

A Case Study of U.S. Poultry Exports to Russia¹

A trade dispute in 1996 threatened U.S. poultry exports to Russia, our fastest growing market. The rapid rise in Russian poultry meat imports is attributed to supply problems in Russia and differences in consumer tastes and preferences between the U.S. and Eastern Europe. The decline in Russian food production is well documented (Liefert, 1996; Braun 1996). In the last five years, Russian grain production has fallen 46%, sugar production 41%, dairy production about 29%, and overall agricultural production 33%. Between 1991 and 1996, poultry meat output dropped by 44% (Maillet, 1996, p. 1). Russian integrated poultry operations are working at about 50% capacity (RUSAG-L, Deptember 16, 1997, #91). Imported food now accounts for 40% of all food consumed by Russians - in Moscow and St. Petersburg the figure is 80% (RUSAG-L, Feb. 4, 1997). Given such drastic declines in Russian food self-sufficiency, Russian concern over the market share captured by imports is understandable.

In 1996, the Russian Federation Council's Agrarian Policy Committee proposed quotas on basic foods rather than tariffs to control food imports. In addition, conservative members of the Agrarian Party advocate the creation of a state monopoly on major food groups. The growing uneasiness of Russian officials over the country's increasing dependence on food imports was a contributing factor to the subsequent poultry meat import embargo of 1996. Food imports antagonize some Russian producers and fuel nationalist and conservative forces in Russia who see

¹An earlier version of this paper has been submitted to the <u>Review of Agricultural Economics</u> for publication but it does not contain the Arkansas leg quarter price analysis. The author acknowledges the assistance and constructive suggestions of Svitlana Chavarha in the preparation of the price analysis section.

the market economy as serving the interests of the West and destroying Russia's domestic industry (Maillet, 1996, p. 1).

The objectives of this case study are: (1) to review the history of the U.S.-Russian poultry trade dispute, (2) to analyze the dispute settlement procedures, summarizing implications for meeting the marketing challenges in transition economies of Central Europe and the Newly Independent States of the Former Soviet Union, and (3) to estimate the impact of the Russian embargo on Arkansas leg quarter prices.

The U.S.-Russian Poultry Trade Dispute Background

The causes of the Russian poultry meat embargo include: (1) allegations of subsidized exports, (2) Russia's attempts to protect its domestic industry, (3) technical problems in a few U.S. export shipments to the country, and (4) a host of other problems, mainly political.

The success of U.S. poultry exports to Russia may have contributed to the protectionist measures in the Russian market. U.S. poultry exports to Russia have increased 253% in the last three years, to \$912 million in 1996, making Russia the largest export market for American poultry (Table 1). American poultry accounted for over 75% of all poultry imported by Russia in 1995-96. "Poultry exports accounted for over 20% of all U.S. exports to Russia . . . Many Russian economists believe that the American chicken can only be sold as cheaply as it is in Russia -- undercutting domestic competitors -- because of 'covert export subsidies'" (Maillet, 1996, p. 1).

The rapid growth in frozen poultry exports to Russia began during the Bush Administration when the U.S. provided loan guarantees to American exporters to stimulate the sale of dark meat to Russia (Gordon, Feb. 24, 1996, p. 33). Between 1991 and 1994, the

Commodity Credit Corporation provided \$59.8 million in loan guarantees under GSM-102, the short-term Export Credit Guarantee Program covering 62,579 metric tons of frozen poultry to Russia (USDA, FAS, 1991-94). Export credit guarantees only covered 50% of the shipments during the 1991-92 years of Russian market development. In 1993 and 1994, export credit guarantees covered only 3% of poultry exports to Russia. No export credit guarantees were used since 1994. Thus, export credit guarantees were only instrumental in risk reduction in the first few years of the Russian market development (Gordon, January 18, 1996, p. 1D). Moreover, direct export subsidies for poultry meat under the Export Enhancement Program were not used in the Russian market in the 1990s.

The debate in Russia became heated as some Russian officials accused the U.S. of trying to destroy the Russian poultry industry (Maillet, 1996, p. 2). American poultry is generally less expensive than most other meats in Russia. In February 1996, American chicken was selling for about R9,000 per kilogram (\$1.83/kg or \$0.83/lb retail) in Russia while European chicken sold for R25,000 and Russian chicken ranged from R10,000 to R13,000 per kilogram (Maillet, 1996, p. 2). Thus, American poultry sold for 29% less than Russian poultry prior to the embargo.

Differences in tastes and preferences between U.S. and Russian consumers also fueled the surge in import demand for poultry meat. U.S. consumers generally prefer white breast meat for ready to prepare meals (Gordon, January 18, 1996, p. 1D; Maillet, May 1, 1996). Russian consumers developed a taste for dark meat, legs and thighs. Quality differences were also important, "Russian chicken is generally poor quality, with even breast meat stringy and unappealing. That's one reason dark meat is more popular; the other is that it has a stronger flavor and can be used in soup," (Pierce, 1996, p. 68). The supply of dark meat in the U.S. found

a ready outlet in the Russian market as domestic supplies declined and the cost of production rose with the removal of production subsidies. "Russian . . . processors have to make 10,000 rubles a kilogram (about \$2.10) to break even. Imported chicken has been going for 8,500 rubles (about \$1.80) in Moscow and other cities," (Pierce, 1996, p. 68).

The "chicken war" had been expected for some time. In an attempt to reduce imports and raise revenue, customs duties on food imports into Russia were initiated in 1994. Despite higher import taxes, American poultry exports to Russia continued to increase. Duties were increased in 1995, but these tariffs still did not reduce imports. The industry alleges that Russian tariffs were never really collected, at least until just recently (Sumner, 1997).

The critical factors in triggering the 1996 embargo incident appear to be technical problems related to an apparent breakdown in export shipment and food safety requirements (Sumner, 1996, p. 4). Poultry products intended for the U.S. fresh chilled domestic market may have been inadvertently shipped in the export market without special attention to refrigeration requirements. As Gordon, (1996 p. 33) states: "Russian officials turned to the Ministry of Agriculture and the threat of more rigorous health checks. In fact, Russian inspectors toured U.S. poultry farms and slaughter houses in January [1996] and supposedly found serious violations of Russian veterinary requirements. The U.S. completely disagreed with the results of their inspection. A shipment of spoiled chicken from ConAgra in late 1995 seems to have served as the basis for the more recent claims of unsafe food imports." In this case, it is apparent that slippages in quality control resulted in adverse consequences for the entire industry. Not all of the food safety problems can be attributed to lax quality control by the American poultry industry. In the early market development phase, Russian distributors experienced some setbacks handling frozen

imported product. "Some chicken spoiled when the Russian buyer failed to manage the cargo properly," (Gordon, January 18, 1997, p. 1D).

The Winter Crisis 1996

When the dispute over quality control in exports shipments arose in late 1995, Russian agriculture ministry officials complained that they were not satisfied with the safety of U.S. poultry meat nor about the effectiveness of the U.S. inspection system. In response to Russian concerns about U.S. poultry processing conditions, 400 poultry processors doing business in Russia provided \$600,000 to pay for five Russian veterinary groups to tour U.S. processing facilities. The tours began in mid-January 1996, and were scheduled to be completed in April 8, 1996 (Stewart, March 20, 1996, p. 1C). Prior to the completion of the Russian tours of U.S. facilities, the embargo of poultry imports into Russian erupted on February 16, 1996.

When reports surfaced that some facilities did not meet Russian inspectors approval, U.S. Secretary of Agriculture, Dan Glickman, immediately responded by stating that the U.S. agreed in no way with the inspection results (Stewart, 1996, p. 1D). In fact, the president of the U.S. Poultry & Egg Export Council, Jim Sumner, stated "I'm told the primary reason for plants not being approved is simply lack of preparation for the inspection: records not being made available, for instance" (Stewart, 1996, p. 1A). Here again, with such allegations, the U.S. believed that Russia was simply worried about becoming too reliant on food imports.

The flash point of this dispute began on February 16, 1996, when the Russians stopped issuing import licenses for poultry meat from the U.S. This change in policy signaled a dramatic shift in Russian import regulations.

The Poultry Trade Dispute Settlement Process

In an attempt to resolve the poultry trade dispute, Vice President Al Gore invited a delegation of Russian negotiators to Washington in mid-March 1996. Dr. Vyacheslav Avilov of the Russian Ministry of Agriculture's Veterinary Inspection Service led the delegation (Blustein, March 19, 1996, p. C02). The final trade negotiations were held under the auspices of the U.S. Trade Representative (USTR) in Washington.

The resolution of the poultry trade dispute involved a wide range of federal agencies, the Office of Vice President Al Gore, U.S. senators, poultry industry associations, and private companies representing poultry producers and exporters. Dr. Vyacheslav Avilov of the Russian Veterinary Service conducted negotiations for the importers. Cathy Novelli, European Desk Officer at USTR headed the U.S. negotiating effort along with representatives of the U.S. Department of Agriculture. The USTR which represents the Executive Branch in trade negotiations and the Department of Agriculture's Food Safety and Inspection Service (FSIS) led by Tom Billy, Deputy Administer, were central to the negotiations because the dispute involved allegations of inadequate food safety standards in poultry processing, shipping and exporting to Russia.

The negotiators reflected an effective liaison between the poultry industry, its associations, and the federal government. Early in the process, Secretary of Agriculture, Dan Glickman, appointed John Reddington, Director of the Dairy, Livestock and Poultry Division of USDA's Foreign Agricultural Service, as the task force coordinator. Mr. Reddington brought together the interested parties to resolve the technical issues involved in the final agreement (Sumner 1996, p. 13).

Important political catalysts in the negotiating process included Vice President Al Gore, 39 U.S. Senators who urged resolution of the dispute on behalf of constituents, and industry associations such as the USA Poultry & Egg Export Council, the National Broiler Council, and the National Turkey Federation. U.S. poultry export companies provided technical information to the USTR and FSIS regarding the impact of changes in the food safety and inspection requirements on the industry.

Considerable political capital was expended in resolving the poultry dispute. The good relationships between Vice President Al Gore and Russian Prime Minister Victor Chernomyrdin played a key role. The Gore-Chernomyrdin Commission, established in 1993 at the Vancouver Summit, has nine committees, including one on agricultural business, which meet twice a year. The Commission fosters communications between the Vice President and the Prime Minister and their respective government agencies. Gore and Chernomyrdin remained in close contact throughout the negotiations. Other evidence indicates considerable political pressure was also brought to bear on the negotiations.

Senator William V. Roth (R-Del), chairman of the Senate Finance Committee, argued in a letter to U.S. Trade Representative Mickey Kantor that the U.S. response to the embargo should be forceful. Senator Roth alluded to retaliatory measures. These included retaliation under Section 301 of the Trade Act of 1974 against imports of Russian products in the U.S., a freeze on U.S. Export-Import Bank loans and credits for the Russian aircraft industry, and suspension of U.S. aid and assistance programs for Russia. Finally, Roth urged the administration to reconsider its support for the \$10.2 billion loan from the International Monetary Fund (*International Trade*

Reporter Mar., 6, 1996, p. 384). Thus, a lot of political pressure was applied on both sides to resolve the poultry dispute.

Final Agreement on Resuming Poultry Exports to Russia

The comprehensive agreement, signed on March 25, 1996, between the FSIS and the chief Russian veterinarian Dr. V. Avilov, "...essentially re-confirms existing inspection criteria for exporting U.S. product to Russia and establishes a testing protocol for salmonella and residues" (U.S. Poultry & Egg Exporter 1996, p. 10). Disease free certification of U.S. poultry flocks, residue testing and salmonella testing had been the primary demands of the Russian Veterinary Service all along for the resumption of import certificates.

U.S. and Russian agreement provides for (1) the Department of Agriculture to issue new certificates verifying that U.S. poultry shipments to Russia meet Russian veterinary health requirements, (2) Russia, meanwhile, agreed to begin issuing new import licences to U.S. poultry exporters, and (3) under the accord, U.S. and Russian officials agreed to jointly inspect U.S. plants that produce poultry for the Russian market to ensure compliance with Russian standards. These inspections involve spot-checks of some 40 plants annually, or about 10% of those plants exporting poultry to Russia. The new procedures require that new U.S. certificates, verifying that U.S. poultry meets Russian veterinary health requirements, must accompany each shipment of U.S. poultry to Russia. The U.S. also agreed to provide a new bilingual inspection certificate from the Food Safety and Inspection Service (FSIS) and USDA agreed to certify that poultry meat exports for further processing come from flocks free of six specific diseases.

Under the new certificate program, poultry meat exports must be tested for pesticides, antibiotics and heavy metal salts. In addition, each consignment must be tested for all types of

salmonella and certified salmonella-free. Mechanically deboned meat and ground poultry meat must come from carcasses that test negative for salmonella and must be labeled in Russian, for further industrial processing only. Processor plant and cold storage facilities must be in compliance with USDA regulations and pass Russian inspection (*U.S. Poultry and Egg Exporter*, Spring 1996, p. 10).

A side agreement was approved at the last moment which allowed for the testing and shipment of 60,000 to 80,000 metric tons of frozen poultry meat in U.S. storage to Russia (Sumner, 1996, p. 14). If this volume of product were sold in the U.S., it would depress U.S. prices drastically.

In another side agreement, the U.S. industry agreed to invest in a failed Russian poultry operation to convert it into a world class production facility. The U.S. industry agreed to finance the project at a cost of several million dollars (Brown, 1997, p. 4). The joint venture to produce broilers in Russia will be under the direction of the Executive Committee of the U.S. Poultry and Egg Export Council, a poultry trade association (Brown, 1997, p. 3). Industry sources believe that U.S. market access will be more secure if there is a balance between imported poultry and domestic production. The vertically integrated production and processing complex will be self-supporting and includes a training facility for technology and information transfer.

Impact on U.S. Industry

The profitability of the U.S. broiler industry is becoming increasingly dependent on the export market. Monthly chicken part exports to Russia dropped from 261 million pounds to 73 million pounds between February and March, 1996 (Figure 1). U.S. leg quarter prices and exports to Russia are highly correlated according to analysts at the Foreign Agricultural Service.

"Nearly 65% of the price variability in Arkansas leg quarter prices can be linked to broiler shipments to Russia (USDA, FAS, 1996, p. 79). This basic analysis has been expanded to include the one-time embargo effect plus the collection of tariff changes in late 1996.

Model Specification and Data

The demand for U.S. farm products in the 1990s is closely tied to the export market. In the case of the exports, impediments to normal trade flows can create substantial fluctuations in price. These trade distortions include tariffs, quotas, embargoes, and non-tariff barriers. In the case of poultry meat exports, the Russian market dominates U.S. sales, accounting for an estimated 40% of U.S. exports. Any disruptions in the Russian import market would be expected to have an impact on the U.S. price (Figure 2).

The price of Arkansas leg quarters (4/10 pack) was specified as a function of monthly exports to Russia, a trend variable, and two dummy variables to account for the import embargo of U.S. poultry in February, 1996, and the resumption of tariff collection on poultry meat in November 1996.

The general form of the equation is as follows:

$$P_{t} = f(Q_{t}, D_{1}, D_{2}, T)$$
 (1)

where P represents the price per pound of Arkansas leg quarters, (4/10 pack of leg quarters, fob shippers dock), the monthly exports of frozen broiler meat to Russia (Q), a dummy variable D₁ for the Russian import embargo (1 for Feb., Mar., and April 1996, 0 otherwise), a dummy variable D₂ for the implementation of tariff collection in Russia (1 for November, 1996 through October, 1997, 0 otherwise), and T a trend factor. In November, 1996, the Russian customs service began

collecting a 30% import tariff on all poultry meat entering the country. Both trade policies, the embargo and the tariff, were expected to have a negative impact on leg quarter prices in the U.S.

Data on monthly U.S. broiler exports to Russia were obtained from the U.S. Department of Agriculture, Foreign Agricultural Service. Arkansas leg quarter prices were obtained from U.S. Department of Agriculture, Poultry Market News.

A log-log function was used to estimate the impact of monthly exports to Russia on the Arkansas leg quarters prices as specified in equation 1.

$$LN(P_t) = \beta_0 + \beta_1 LN(Q_t) + \beta_2 D_1 + \beta_3 D_2 + \beta_4 T + U_t$$
(2)

Ordinary Least Squares (OLS) was employed to estimate equation parameters.

Results and Interpretations

Results of the OLS of Arkansas leg quarter prices are presented in Table 2. Since the loglog function was used in the estimation, the coefficient of the quantity variable represents the price response with respect to the quantity exported.

As expected, the monthly quantity exported to Russia was positively associated with Arkansas leg quarters prices. The coefficient was significant at the α =0.03 level. The coefficient of dummy variable representing the implementation of the embargo was negative as expected since a cutoff of the export market placed additional supplies on the domestic market which would reduce prices. The coefficient was statistically significant at the α =0.01 level. The coefficient of the dummy variable representing the collection of the tariffs on imported poultry would also reduce leg quarter prices since exporting firms would be paying the levy to the Russian customs service. Tariff collection would reduce the expected price of leg quarters. The coefficient was statistically significant at α =0.0001 level. The coefficient of the trend variable was

positive and significant at α =0.0001 level. Leg quarter prices have been increasing over the period of analysis partially due to exports. The adjusted R-square was 0.7662 indicating that 77% of the variability in the monthly price of Arkansas leg quarters explained by the model.

Conclusions

The results of this study clearly indicates how dependent the U.S. market is on exports and how changes in the international market can impact prices and profits in the domestic market. Since 1991 poultry exports to Russia have grown from zero to 40% of U.S. poultry exports worth \$912 million in 1996. This phenomenal growth led to the Russian embargo of February 1996 when allegedly quality control in a shipment of poultry meat triggered the Russian embargo of U.S. poultry imports. The resolution of the trade dispute required the combined efforts of U.S. processors, trade associations, the U.S. Food Safety and Inspection Service (FSIS), and Vice President Gore's Office. Subsequently, the Russian customs service began collection of tariffs in late 1996. These factors - the growth in exports, the embargo, and the tariff collection - had an impact on Arkansas leg quarter prices.

Leg quarter prices dropped nearly 25% to 32.5 cents per pound in one month as a result of the embargo. Prices recovered in mid-1996 to pre-embargo levels and then fell about 18% as Russian tariff collection began in late 1996. These factors illustrate how dependence on a single market can have an adverse impact on domestic prices. The industry has rebounded from these problems. Exports of poultry to Russia reached \$404 million in the first six months of 1997, up about 13% over the previous year.

Implications for Trade and Marketing in Transition Economies

The true challenge in this issue is the stability of the Russian market. The ban on American poultry meat imports has already been implemented once, and could be again. Despite assurances from Russian Prime Minister Viktor Chernomyrdin in early March that the ban would not be implemented, U.S. chicken was banned from entering Russia on March 16, 1996. The Russian Veterinary Service had already stopped issuing new import licences a month earlier. The effects of the ban left shipments of poultry stranded in ports and warehouses (Maillet, 1996). After the embargo, Russian officials elevated tariff rates again. Ultimately, in an accord was negotiated between the USTR's Office and Russian Negotiations on March 29, 1996, establishing a 30% ad valorem tariff on five categories of poultry imports (U.S. Poultry and Egg Exporter, Spring 1996, p. 14). Moreover, demand for protectionism in Russia remains high because incentives to increase agricultural production are weak due to ineffective price information systems, high transaction costs, segmentation of food policy, and poor infrastructure (Braun et al., 1996, p. 20).

What can be learned about the most recent round of "chicken wars." First, success in gaining market share may result in a protectionist backlash. Second, governments are determined to protect their consumers from unsafe foods. Moreover, in a market where "natural" foods are common, consumers are reluctant to risk public and private well being in the consumption of imported foods not deemed or perceived safe. Third, carelessness in international trade can have dire consequences. Finally, the poultry trade dispute indicates that governments and trade associations can work together to resolve disputes to the mutual benefit of all concerned, if trust is established among the contracting parties.

References

- Blustein, Paul. "Russia's Foul Relations with the U.S.; Moscow Sending Representatives to Discuss Ban on Chicken Imports." *The Washington Post*, March 19, 1996, p. C02.
- Braun, Joachim von, Serova, Eugenia, Seeth, Harm tho, and Melyukhina, Olga, *Russia's Food Economy in Transition: Current Policy Issues and the Long-Term Outlook*, IFPRI, Discussion Paper 18, Washington, D.C.: October 1996.
- Brown, R.H., U.S. Announces Joint Venture with Russia on Poultry Production. *Feedstuff*, 69(No. 7) (Feb. 17, 1997), p. 4.
- Brown, R.H. "U.S., Russian Poultry Venture Forges Ahead." *Feedstuffs*, 69(17): May 12, 1997, p. 3.
- Gordon, Michael R., U.S. Chicken in Every Pot? In Russia Apparently Not. *The New York Times*, (Feb. 24, 1996), Section 1, p. 33.
- Gordon, Michael E. "U.S. Chicken in Russian Pots." *The New York Times* (January 18, 1996, p. 1D).
- International Trade Reporter. U.S. Hopeful Poultry Dispute with Russian Can Be Resolved." 13(1):March 6, 1996, p. 384.
- Kennett, Jim, 2 Months On, Poultry Feud Quiet. *The Moscow Times*, (June 8, 1996); Section 977.
- Khotin, Rostislav, Ukraine Seeks to Suspend U.S. Chicken Imports. *The Reuter Business Report*, Reuters, Limited (March 26, 1996).

- Liefert, W.M., Russian Agriculture Could Remain Uncompetitive on World Markets Even if Reform Continues. *Former USSR Situation and Outlook Series*. WRS-96-1, U.S. Department of Agriculture, Washington, D.C., May 1996.
- Maillet, Lynda L., Playing Chicken: The U.S.-Russian Poultry Trade Conflict. *IAC(SM)*Newsletter Database (TM). Thomson Corporation Company, No. 5, Vol. 6, (May 1, 1996).
- Martin, David. "Poultry Processors Benefit from Exports to Russia." *Feedstuffs*, 69(16):May 5, 1997, p. 19.
- Pierce, J.J. "Russians Lift Ban on U.S. Poultry but Higher Tariffs Still in Force." Quick Frozen Foods International. 37(4):68.
- RUSAG-L., Russian Agriculture. *RUSAG-L@UMDD.UMD.EDU*, Current Events #86, Feb. 4, 1997 and Current Events #91, September 16, 1997.
- Sheffield, Sharon S., U.S. Agricultural Exports Projected to Grow in Fiscal 1996, HVPs

 Continue to Dominate. in *International Agriculture and Trade Reports: former USSR Situation and Outlook Series*. WRS-96-1, Washington, D.C., May 1996.
- Stewart, D.R., Earnings Off 71.4% For Tyson, Embargo And Grain Costs Cut Into Second Quarter. *Arkansas Democrat-Gazette*, (April 30, 1996); p. 1D.
- Stewart, D.R., Chicken Plants Passing Muster Of Russians. *Arkansas Democrat-Gazette*, (May 7, 1996); p. 1A.
- Stewart, D.R. Russia, U.S. to Meet, Try to Scratch Out Chicken Pact. *Arkansas Democrat-Gazette*, (March 20, 1996); p. 1C.

- Stewart, D.R. "Earnings off 71.4% for Tyson Embargo and Grain Costs Cut into Second Quarter." *Arkansas Democrat-Gazette*, April 30, 1996, p. 1D).
- Stewart, D.R., State Funds Will Buy Poultry Testing Gear. *Arkansas Democrat-Gazette*, (July 11, 1996); p. 1D.
- Sumner, James H., Personal Communication. *President, USA Poultry and Egg Export Council*, Stone Mountain, Georgia, April 5, 1997.
- Suvorov, A.V. "System for Forecasting the Structure of Population's Expenditures, Problems of Forecasting." Department of Agriculture, Economic Research Service. *Newly Independent States & Baltics Update*. WRS-98-S1. Washington, D.C.: March 28, 1997.
- U.S. Department of Agriculture, Supplement to Livestock, Dairy, and Poultry Situation and Outlook, Washington, D.C., (February 16, 1996).
- U.S. Department of Agriculture, Supplement to Livestock, Dairy, and Poultry Situation and Outlook, Washington, D.C., (February 28, 1996).
- U.S. Department of Agriculture, Foreign Agricultural Service. *Livestock and Poultry: World Markets and Trade*. FL&P 2-96, Washington, D.C., (October 1996).
- U.S. Department of Agriculture, Foreign Agricultural Service. Summary of Export Values and Quantities for GSM-102 and GSM-103, FY 1991-94. Washington, D.C.: (1991-94).
- U.S. Department of Agriculture, Economic Research Service. *Former USSR Update Agricultural and Trade Report.* WRS-96-53, Washington, D.C., (October 25, 1996).
- Zhigulsky, Anton. "Health Issues Keep Poultry Ban on Table." *The Moscow Times*, No. 920:March 167, 1996.

Table 1. U.S. Poultry Meat Exports to Russia, 1991-96.

Item	Fiscal Years							
	1991	1992	1993	1994	1995	1996		
				\$ million				
Value	65	7	27	258	504	912		
			1,00	0 metric tons -				
Quantity	83	22	43	315	625	937		

Source: U.S. Department of Agriculture, Economic Research Service. <u>Former USSR Update Agricultural and Trade Report</u>. WRS-96-53, October 25, 1996.

Table 2. Parameter Estimates for Monthly Arkansas Leg Quarter Prices¹, 1993 to 1997

	Coefficient			
Variables	Estimates	t-value	Probability	
			Ť	
Intercept	3.0201	39.376	0.0001	
Monthly Exports				
to Russia - LQ _t	0.0213	2.194	0.0328	
Russian Embargo - D ₁	-0.1592	-2.748	0.0083	
Russian Tariff				
Collection - D ₂	-0.4425	-9.930	0.0001	
Collection - D ₂	-0.4423	-9.930	0.0001	
Trend - T	0.0116	7.762	0.0001	
R-Squared	0.7832			
F(4, 55)	46.0660			
Degrees of Freedom	55			

Prices are for Arkansas leg quarters in 4/10 boxes, the primary export packaging form for poultry cuts.

¹ One box contains 4 polybags, each bag holds 10 lbs of leg quarters. Prices are derived from a processor survey conducted by the Agricultural Marketing Service in Little Rock.