

SOVIET AGRICULTURAL POLICY
AND GRAIN TRADE

by

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B.A. University of Kansas, 1977

A MASTERS REPORT

submitted in partial fulfillment of the

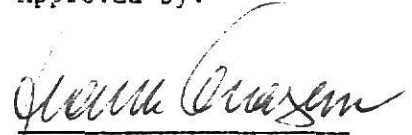
requirements for the degree

MASTER OF SCIENCE

Department of Economics
Agricultural Economics

KANSAS STATE UNIVERSITY
Manhattan, Kansas
1980

Approved by:


Major Professor

Spec. Coll.
LD
2668
.R4
1980
H45
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TABLE OF CONTENTS

I. INTRODUCTION	1
II. GRAIN PRODUCTION UNDER THE TSARS	4
III. THE MOVE TO COLLECTIVIZATION	9
IV. KHRUSHCHEV ERA	15
V. POST-KHRUSHCHEV ERA	18
VI. CHARACTERISTICS OF MODERN SOVIET AGRICULTURE.	23
VII. US-USSR GRAIN AGREEMENT	35
VIII. IMPLICATIONS OF PRESENT POLICIES.	41
IX. CONCLUSION.	44
APPENDIX A.	46
APPENDIX B.	47
BIBLIOGRAPHY	49

LIST OF TABLES

<u>Table</u>		<u>Page</u>
1	Russia's Export of Grain.	6
2	Government Procurement of all Food and Forage Grains from 1916-17 to 1927-28	7
3	Course of Collectivization	12
4	Harvested Grain Area and Production on Kolkhozi of the Uninvaded Zone, 1941-43, as percent of 1940.	14
5	Soviet Grain Statistics: 1953-63.	16
6	Soviet Grain Statistics: 1963-69.	19
7	Soviet Union: Grain Imports	20
8	Soviet Grain Statistics: 1971-75.	21
9	Sown Area Selected Years	28
10	Output of Mineral Fertilizer	29
11	Agricultural Output: Averages, 1961-75.	33
12	U.S. Agricultural Trade Balance.	38

INTRODUCTION

The twentieth century has seen the emergence of the Union of Soviet Socialist Republics as one of the powerful industrial nations in the world. The national GNP constitutes 20 percent of the world's output. The industrial growth rate of the U.S.S.R. has remained at 4-6 percent per annum; several times that of most other industrial nations. One of the major industries in the U.S.S.R. is agriculture. There are 255 million people to feed scattered across 8,599,300 square miles. Agriculture accounts for one-fifth (1/5) of the GNP of the U.S.S.R.; it employs one fourth (1/4) of the labor force, and receives some 20-25 percent of the capital investment in this planned economy.¹ The U.S.S.R. is one of the world's most important food producers, ranking first in the production of wheat, barley, potatoes, and sugar beets.²

About 27 percent of the total land area of the Soviet Union is agricultural of which only one-third (1/3) is arable.³ The farm land of the U.S.S.R. forms a fertile triangle, sweeping from the north (Baltic Sea) and west (Black Sea), eastward to Lake Baikal. This includes the "black soil" region of RSFSR and the Ukraine, the "chestnut" solid region, and to the east the "virgin lands" that were opened up and developed during the

¹Central Intelligence Agency (CIA), USSR Agriculture Atlas (Washington, D.C.: Government Printing Office (GPO), 1974), p. 4.

²Ibid, p. 1.

³Ibid, p. 17.

Khrushchev era. In December 1973, the Soviets initiated a program to improve the "non-chernozem" (non-black soil) region in northwest RSFSR.* The current plan (1976-80) has provisions to improve some 50 million hectares of the existing 224 million hectares of arable land.⁴

This paper considers the economical importance of Russian agriculture through time, emphasizing grain production trends and import/export patterns of the Soviet period. Grain is a useful indicator of the trends in Soviet agriculture because: (1) the leadership of the Soviet government places great emphasis on grain production, (2) about one-half (1/2) of the arable land is sown to grain each year and grain production makes up a large percentage of the total agricultural output,⁵ (3) grain is a valuable commodity on the international market and has been important to the Soviet economy as both an export and as an import commodity, and (4) grain, with potatoes, is the staple food of the Soviet diet, with the per capita consumption of bread and bread products at 143 kgs per year in the U.S.S.R. compared to 64 kgs in the United States.⁶ Furthermore, feed grains have become increasingly important as the leadership of the U.S.S.R. tries to raise the average per capita consumption of meat and meat products to meet consumer demands for a better diet. This paper begins with a discussion of grain production under the Tsars, then considers the changes wrought by the revolution and recent develop-

⁴ Ibid, p. 4.

⁵ Roy D. Laird and Betty Laird, "The Widening Grain Gap and Prospects for 1980 and 1990," The Future of Agriculture in the Soviet Union and Eastern Europe (Boulder, Colorado: Westview Press, 1978), p. 29.

⁶ Ibid, p. 41.

* RSFSR refers to the Russian Soviet Federated Socialist Republic.

ments under the Soviet regime. The U.S.S.R. has emerged as a major buyer of grain on the world market; this development is discussed from various angles. Finally, it examines the success and shortcomings of Soviet agriculture in broad perspective.

GRAIN PRODUCTION UNDER THE TSARS

Agriculture has always been of primary importance to Russia. As late as 1901, over 80 percent of the population lived in the countryside.⁷ Tsarist Russia was the great grain-producing region of Europe, the "bread-basket" of the continent. Most of the people of Russia were peasants who lived and worked on a nobleman's estate. Until 1861 a system of serfdom prevailed whereby the peasant owed his master so much rent, either in goods, money, or work. The nobles took this rent from the serfs or from his lands that the peasants had worked and sold these crops in Europe in exchange for the refinements of civilized life. Similar climatic and weather conditions prevailed then as today, and many years the grain taken from the farms was needed to feed the peasants through the winter.

After the emancipation of 1861, the peasants received legal title to some of the lands they worked. However, a system for extracting grain from the peasant remained in the form of government payments for the lands they had received. The collected grain continued to be sold to Western European countries. The payments for the lands were remitted in 1906, and a set of agricultural reforms were instituted by Stolypin, the Prime Minister of Russia from 1906-11. Under this program, those peasants who were already prosperous, and/or those who were ambitious and efficient, were given legal and financial advantages, so that the produce from their

⁷ Lazar Volin, A Century of Russian Agriculture (Cambridge, Massachusetts: Harvard University Press, 1970), p. 63.

lands found its way to market as easily as before. In the period just before World War I, Russia was exporting record amounts of grain. (See Table 1.)

This prosperity, however, was not apparent in the peasant society. Most peasants still toiled along, hard hours on a meagre acreage. World War I was the last blow needed to dispatch the monarchy; for after three years of fruitless fighting in Europe, the old regime crumbled. By the end of the year 1917, one segment of the Social Democrats (Bolsheviks) was in control of the government. One of the first decrees of the Bolshevik government allowed the peasants to legally seize the lands held by the noblemen.

As the Bolsheviks desperately tried to consolidate their position in the cities, friction between the government and the peasants mounted over the procurement of food. Grain was in short supply and those peasants who held stores were disinclined to sell their grain in exchange for the inflated ruble. To help the government secure grain, "committees of the poor" were organized. These committees consisted of poor peasants who were given license to seize the stores of their more well-to-do neighbors. This method successfully extracted most of the available grain from the villages and supplied the cities with minimum subsistence. However peasants, because of the shortage of seed and because they felt that increased production would not bring profit but food detachments, grew less and less grain. (See Table 2.)

Therefore in 1921, Lenin proposed to take "one step back for two steps forward" and signalled the advent of his New Economic Policy (NEP).

TABLE 1

RUSSIA'S EXPORT OF GRAIN
1895/96-1912/13

Year	Million Metric Ton	Rubles (Millions)
1895-98*	8.12	348.0
1898-1901	6.54	294.1
1901-04	9.72	437.1
1904-07	10.00	503.1
1907-10	10.09	583.6
1910-13	10.73	639.9

* Year ending August 31.

SOURCE: Joseph Goldstein, Russia, Her Economic Past and Future
(New York: Russian Information Bureau, 1919), p. 29.

TABLE 2

GOVERNMENT PROCUREMENTS OF ALL FOOD
AND FORAGE GRAINS FROM 1916-1917 to 1927-28*

Year	Quantity	Year	Quantity (Tsnds. metric ton)
1916-17	8,323	1923-24	6,842
1918-19	1,768	1924-25	5,248
1919-20	3,480	1925-26	8,913
1920-21	6,012	1926-27	11,616
1921-22	3,814	1927-28	10,993
1922-23	5,916		

SOURCE: Lazar Volin, A Century of Russian Agriculture (Cambridge: Harvard University Press, 1970), p. 162.

This policy allowed for personal incentives and individual initiative, and agricultural output showed remarkable recovery, in spite of the drought in the "black-soil" region in 1921-22.

THE MOVE TO COLLECTIVIZATION

The mixed system of the NEP was an unstable dichotomy of socialist and capitalist elements. This dualism was tolerated in the early years of the NEP, when there was urgent need for a breathing spell and the recovery of production after the catastrophic decline of the revolutionary years. But as the critical period passed new difficulties appeared and new misgivings developed in the Bolshevik Party.⁸ In 1928, the government took the offensive against the kulaks (prosperous peasants) once again. Collectivization became the goal of the government and in a fierce struggle the kulaks were all but wiped out. The peasant holdings were organized into State and Collective farms, which, with minor administrative changes, continue today.

The official justification given by the Soviet government for the move to collectivize was and still is that of benefiting the peasant by uniting him into organizations that would help him along the road to communism. Under the system all land belongs to the people as a whole (just as all the factories in the cities) and the peasant works to produce food for the whole society. There are two alternative models of collectivization: the "sovkhoz" (State economy) and the "kolkhoz" (Collective economy). On the State farms the peasant owns no private property and works under the direction of the administrators who are appointed by, and is responsible to, the Central Planning Agency--the

⁸Ibid, p. 190.

Community Party. The State farms are truly the "food factories" desired by the Soviet leadership. The other model, considered an intermediate step on the road to Communism, is the Collective farm. On these farms the peasant, while not owning the land or machinery, does retain his home, a small plot of land for his own use, and some limited livestock. By a system of "work day units" which rate a proportion of the total farm profits, the wages of the peasant are directly related to the output of the farm as a whole. Again the farm is run by administrators, who in theory are elected by all the members of the Collective farm and act under a charter. In practice, these men (and women) are nominated by Party apparatus and receive orders from the Central Planning Agency that must be fulfilled.

While the Collective model is indeed ideologically more palatable to the Soviet regime than individual farms, there are many other factors that supported the move to collectivize. The organization of the Collective farm is an effective means of political control over the peasants. The main support of the Bolshevik revolution had been the poor and landless peasants who rallied around the slogan "Bread, Land, Liberty," and one of the relentless problems of the new regime up to 1928 was the instability of the peasant support and the possibility of another peasant revolution. The collective structure allowed the Party to increase its control over the peasants by controlling the administration of the farms and controlling the inputs and investments into the system and to the individual farms. The Collective farm organization continues as an effective means of issuing propaganda and spreading the socialist doctrine in the countryside.

Other benefits to the Soviet government that proceeded from collectivization include the increased facility in producing foodstuffs for the population in the cities and other raw materials for industry and export. Since the government controls the market, it can buy the grains and foodstuffs at artificial prices; until the 1950s, large savings were forced out of the agricultural sector of the economy to subsidize the industrial sector. Increased efficiency of manpower by joining the small plots released some peasants from traditional farm work for labor in industry.

The question that must be asked is "how successful was the move to collectivize, both in terms of the goals of the leadership and in terms of agricultural production?" Political benefits are hard to measure, but since the Soviet government is still in control, it can be assumed that the political requirements were fulfilled. Grain procurements and grain for export rose immediately after collectivization (see Table 3), but grain production went down and by 1932 (five years after the initiation of the program) famine ravaged the countryside. The system's cost of collectivization continue to be argued by agronomists, Soviet and Western. Western experts contend that, although Soviet agriculture has made gains since 1917, these have not been that great and these gains do not match the potential of agriculture in the Soviet Union under some other system of management.⁹

After the initial loss in production caused by the violence of collectivization, Soviet agriculture showed moderate progress. Output

⁹Scholars include: Naum Jasny, Roy Laird, Alec Nove, and others.

TABLE 3

COURSE OF COLLECTIVIZATION

Year	Thousands of Coll. Farms	Percent of Peasant Households Collec- tivized	Grain Harvests Million Tons
1928	33.3	1.7%	73.3
1929	57.0	3.9	71.7
1930	85.9	23.6	83.5
1931	211.1	52.7	69.5
1932	211.1	61.5	69.6
1933	224.6	65.5	68.4
1934	233.3	71.4	67.6
1935	245.4	83.2	75.0
1940	242.4	93.5	95.6

SOURCE: Lazar Volin, A Century of Russian Agriculture, p. 211; Harry G. Shaffer, "Soviet Agriculture: Success or Failure?" Soviet Agriculture. Ed. Harry Shaffer. New York: Praeger Publishers, 1977.

gradually increased as machinery and other technological investments that could be spared from the industrial effort reached the farms. But the main agriculture area was devastated during the Second World War by the German occupation. Grain production in the unoccupied areas of the U.S.S.R. fell even though lands that had not been cultivated before felt the sharp edge of the plow. (See Table 4.) Inputs such as tractors and trucks fell off as industry turned to making munitions.¹⁰ After the War, the status of agriculture remained much as it had been before the crisis, the unheeded stepchild of Soviet planning, as the industrial economy strove to recover pre-war levels of production. By 1952, industrial production was 67 percent above 1940 output, but agriculture outputs were barely above pre-war levels.¹¹

¹⁰Lazar Volin, A Century of Russian Agriculture, p. 277.

¹¹Ibid, p. 323.

TABLE 4

HARVESTED GRAIN AREAS AND PRODUCTION OF KOLKHOZI OF
THE UNINVADED ZONE, 1941-43, AS PERCENT OF 1940

	1941	1942	1943
Area	98.7%	100.2%	86.7%
Production	97.4	61.1	46.0

SOURCE: Lazar Volin, A Century of Russian Agriculture, p. 280.

KHRUSHCHEV ERA

The importance of agriculture in the Soviet economy was finally realized and reflected in public policy under the leadership of Khrushchev, who brought the needs of agriculture production into public focus. As one remedy for the food problems in the U.S.S.R., he initiated the "Virgin Lands" campaign, which brought forty million hectares of virgin and long-fallow land under the plow, mostly in Kazakhstan and Siberia.¹² These new lands greatly increased the grain output of the U.S.S.R. for a few years. (See Table 5.) The Virgin Lands were far to the east of the traditional grain regions and they generally served as insurance against the weather conditions of the West. These lands also were sparsely populated, so that most of the yield from these great expansive farms went to the government. However in 1963, disaster struck all of the agricultural areas.

First the drought of 1962-63 and then the harsh winter with little snow damaged the western crop, and the extensive, non-conservative methods used to farm the marginal lands of the East brought a 25 percent decrease in the level of production.¹³ This drop in grain output lead

¹²Harry G. Shaffer, "Soviet Agriculture in the 1976-1980 Plan," The Future of Agriculture in the Soviet Union and Eastern Europe (Boulder, Colorado: Westview Press, 1978), p. 86.

¹³United States Department of Agriculture (USDA), Foreign Agriculture, Washington, D.C. periodical, August 10, 1964.

TABLE 5

SOVIET GRAIN STATISTICS: 1953-1963

Year	Production (million metric tons)	Exports	Imports
1953	82.5	--	--
1954	85.6	--	--
1955	103.7	3.7	0.31
1956	125.0	5.4	1.90
1957	102.6	6.2	1.50
1958	134.7	7.7	1.70
1959	119.5	6.8	1.00
1960	125.6	7.0	0.80
1961	130.9	8.4	0.80
1962	140.1	8.3	0.60
1963	107.4	4.7	10.40

SOURCE: Harry Shaffer, "Soviet Agriculture: Success or Failure,"
p. 71.

to the first big grain purchase in the West (Europe and North America) by the Soviet Union and signaled a new era in Russian grain trends into rather than out of the country.

POST-KHRUSHCHEV ERA

Before 1963, the Soviet Union had been the fourth largest grain-exporting country in the world.¹⁴ In 1963, no one foresaw that the U.S.S.R. would come to rely on foreign grain as the decade continued. Indeed, the next year the U.S.S.R. was again a net exporter, but in 1965, they imported more grain than was sent out of the country. (See Table 6.) Most of the exported grain went to the countries in the East European bloc and during the 1960s, most of the imported grain was bought from Canada. (See Table 7.)

In the first half of the 1970s, agriculture was uneven at best. (See Table 8.) The grain harvest of 1972 was poor and the Soviet government planned to recoup the losses in 1973, so investment in agriculture rose to 25.4 billion rubles, a 10 percent increase over 1972.¹⁵ This effort plus excellent weather, produced a bumper crop in 1973; all-time production records were claimed for all major products.¹⁶ The next year (1974) was an average harvest, but in 1975, disaster struck again, with a harvest of 140 million metric tons. The government of the U.S.S.R. cancelled exports to East Europe, cut back on livestock holdings, dipped into grain reserves, and made extensive purchases abroad.¹⁷ But typically, the

¹⁴David Schoonover, "Soviet Agriculture in the 1976-1980 Plan," The Future of Agriculture in the Soviet Union and Eastern Europe (Boulder Colorado: Westview Press, 1978), p. 86.

¹⁵USDA, Foreign Agriculture, May 1976.

¹⁶Ibid, July 9, 1973.

¹⁷Ibid, November 3, 1975.

TABLE 6

SOVIET GRAIN STATISTICS: 1962-1969

Year	Production (million metric tons)	Exports	Imports
1962	140.2	8.3	0.6
1963	107.5	4.7	10.4
1964	152.1	4.3	2.6
1965	121.1	5.3	9.0
1966	171.2	5.3	3.9
1967	147.9	6.4	2.3
1968	169.5	7.4	1.2
1969	162.4	7.6	1.8

SOURCE: U.S.D.A., Agricultural Situation, USSR (Washington, D.C.: USDA, 1979), p. 4.

TABLE 7
SOVIET UNION: GRAIN IMPORTS

Type and Source	1965	1966	1967	1968	1969
		(million metric tons)			
Wheat:					
Canada	5.2	2.7	1.4	0.1	1.1
Australia	.6	--	--	--	--
Argentina	2.2	--	--	--	--
Other	.6	--	--	--	--
TOTAL	8.6	3.1	1.8	.5	1.5
Feedgrains:					
Argentina	*	*	*	*	*
EC	--	--	--	.1	--
Other	.1	.3	.3	.2	.4
TOTAL#	.1	.3	.3	.3	.4

* Less than 50,000 tons.

Partially estimated to allow for small imports from East European sources, includes none from the United States.

SOURCE: Foreign Agriculture, November 29, 1971.

TABLE 8

SOVIET GRAIN STATISTICS: 1971-1975

	1971	1972	1973	1974	1975
(Millions of hectares)	207.3	201.7	215.0	216.5	218.0
Tractors (thousand)	472.0	477.8	499.6	531.1	--
Grain Harvested (Million metric tons)	181.2	168.2	222.5	195.7	140.1
Grain Exports (Million \$US)	602	329	549	882	--
Grain Exports (million metric tons)	6.7	1.8	6.1	5.3	0.7
Grain Imports (million \$US)	148	540	1041	350	--
Grain Imports (million metric tons)	8.3	22.8	11.3	5.7	26.1
Imports from U.S. (million metric tons)	N	9.5	2.7	1.0	4.0

SOURCE: Roy D. Laird and Betty Laird. "The Widening Grain Gap and Prospects for 1980 and 1990," The Future of Agriculture in the Soviet Union and Eastern Europe. Ed. Roy Laird et al. Boulder, Colorado: Westview Press, 1977, p. 29; Agricultural Situation, pp. 24, 55; David M. Schoonover, "Soviet Agriculture in the 1976-1980 Plan." The Future of Agriculture in the Soviet Union and Eastern Europe, Ed. Roy Laird et al. Boulder, Colorado: Westview Press, 1977.

harvest of 1976 was excellent at 216 million metric tons, rivalling the 1973 records in some cases.¹⁸

¹⁸David Schoonover, "Soviet Agriculture in the 1976-1980 Plan," p. 83.

CHARACTERIZATION OF MODERN SOVIET AGRICULTURE

In 1972, the Soviet Union appeared on the market as a long-term importer of world grain. There were many reasons for this shift at this time from net exporter to net importer: new policies and emphases, new terms of trade, and the old adversary--the weather and climate. The U.S.S.R. does not have an ideal climate for agriculture, in latitude it is similar to the Northern Plains States and Canada. The major grain growing regions are far from major bodies of water and are ringed by mountains that divest clouds of rain. The southern grain growing area frequently experiences dry winds from the Pakistan desert that scorch the crops as they stand. The northern agricultural region, aside from its extreme latitude, has too much water. The land is marshy and ill drained, leached of basic minerals and unsuitable for major grain crops. The Virgin Lands region lies east of the Ural Mountains; rain is not dependable so far inland. These marginal lands are farmed extensively and only about 12-15 percent of the land is held in fallow each year. For comparable land in the United States, 25-50 percent fallow is recommended. When the Virgin Lands were first cultivated in 1956, it was hoped that these lands would provide a reserve when crops were bad in European U.S.S.R., as they are on a different weather cycle. However, as time progressed, the grain of the new lands was not considered accessory but a requisite part of the total grain crop. Therefore, a shortfall in either the European U.S.S.R. or in the Virgin Lands region

undercuts the plans as set forth by Gosplan (the Central Planning Agency). When bad weather strikes both regions as it did in 1963 and 1965, the results are painful.

The unpredictable weather patterns of the U.S.S.R. do not fit nicely with the rigid requirements of the Soviet plan. Each year's production is calculated and distributed in advance. For example, in the Tenth Five Year Plan (1976-80) an average grain production of 215-220 mmt is targeted. The maximum normal weather peak of 235 mmt is targeted for 1980, virtually assuming self-sufficiency for planned requirements. But the grain crop of the U.S.S.R. has been variable: the 1976 harvest was 223.8 mmt, 1977 was 195.7 mmt, 1978 was 235 mmt, and the 1979 estimate is 185 mmt.¹⁹ The average for the period is 201 mmt. Demand for grain is based on the 215-220 mmt average, so shortfalls and excesses are equally disruptive.

The pricing mechanism, which in a free market economy indicates maladjustments of supply and demand and leads to readjustment, is not one of the Soviet planning tools. Prices in the U.S.S.R. are fixed so as to extract the minimum procurements at a minimum price and to reward surplus above quotas. Prices for commodities vary from region to region based on cost of production and planned demand. In areas where the cost of production is high, such as Kazakhstan for grain, the price paid for the commodity is correspondingly high. In years of surplus the Collective and State farms receive lots of bonuses for the surplus they sell to the Ministry of Procurement, but in bad years, the farms are penalized for

¹⁹ CIA, Handbook of Economic Statistics, 1978 (Washington, D.C.: GPO, 1978).

below quota receipts. This happens at a time when the farms need all resources available to produce a better crop the next year. After the 1972 crop of 168 mmt, the Soviet government allocated an increased 10 percent of investment money to agriculture--a total of 25.4 billion rubles.²⁰ The 1973 harvest was a record breaking 222.5 mmt, but this level of production was not sustained.

In the U.S.S.R. as in the U.S., a big harvest produces almost as many problems as a shortfall. Reports filtered to the West in 1973 of wheat rotting on the ground, too wet to store and too much to transport. One of the major efforts of the 1975-80 plan is to increase storage facilities. Total off-farm storage capacity in 1975 was 140 mmt, about 100 mmt in warehouses and flat storage that require lots of man-hours of labor. The Tenth Five Year Plan called for an additional 30 mmt of off-farm storage to be built.²¹ Each year about one-half (1/2) of the Soviet grain crop must be dried and in a big crop year, this can be a burden of facilities. During the current Five Year Plan an additional 45,000 tons per hour drying capacity is to be constructed.²² Generally, grain in the U.S.S.R. of 18 percent moisture or over is dried to 14.5-15.5 percent moisture for long-term storage.

Transportation facilities in the U.S.S.R. are mixed. Most grain travels to the cities by rail and by water (89 percent and 11 percent

²⁰ USDA, Foreign Agriculture, January 22, 1973.

²¹ Ibid, March 21, 1977.

²² Ibid.

respectively).²³ But the railroad system is not well developed, there are fewer feeder lines, only main arteries stretched across the country. Often tractor and wagons or occasionally horse and wagons transport the grain to the rail heads. Off-farm storage facilities and drying facilities are also concentrated near the railroads.

Land management in the U.S.S.R. is a matter of State policy and planning. As a general rule, farms produce a little of each kind of crop that can be grown in the region and traditional crops are cultivated long after the usefulness or price-effectiveness has passed. Farm work has traditionally been labor-intensive, but the widely recognized flight of farm youth to the cities is changing the balance of available labor. As a result new forms of management and new techniques have been introduced. Mechanization of the poultry and dairy industries is becoming the rule rather than the exception, but for every machine that operates, there is one broken down, so the labor-intensive practices are often preferred by the workers. Traditionally, workers were organized into large brigades--upward to 100 workers--and sent out to work large tracts of land on a schedule set up by the administration. An alternative method of labor management is the *zyeno* (link) a small group of workers who are responsible for a particular plot of land. This idea has been repeatedly rejected by Soviet authorities as ideologically unacceptable, but it keeps returning because it is effective. Recent literature suggests

²³Paul E. Lydolph, Geography of the USSR (Elkhart Lake, Wisconsin: Misty Valley Publishing, 1979), p. 421.

that the idea has surfaced again, as a means to keep the youth on the farm by allowing them to work in family groups.²⁴

After opening the Virgin Lands in 1956, the U.S.S.R. had almost reached the limit of arable land. To raise agricultural production it became necessary to intensify inputs rather than to extend holdings. Over the years, some marginal land has been retired. (See Table 9.) Brezhnev continued Krushchev's policy emphasizing agriculture and since 1964 agricultural investment in the U.S.S.R. has risen substantially. Soviet agriculture's share of fixed capital investment has grown from 19.6 percent in 1961-65 to 27 percent of the total in 1976-80.²⁵ This includes productive investment as well as nonproductive investment such as housing. Productive agricultural investment alone accounts for 20 percent compared to less than 5 percent in the United States.²⁶

Mechanization has always been a major tenet of Soviet planning. Tractor deliveries in the U.S.S.R. have exceeded U.S. deliveries for almost 20 years. In 1975, the Soviet factories delivered 370,000 tractors to their State and Collective farms compared to the 140,000 new tractors produced in the United States.²⁷ However, tractors in the U.S.S.R. seem to require lots of repairs--about one-fourth (1/4) of the tractors will be in the shops at any one time. Soviet farmers retire about 12-13 percent

²⁴Arcadius Kahan, "Shifts to Off-Farm Agricultural Inputs in the Tenth Economic Plan," The Future of Agriculture in the Soviet Union and Eastern Europe Ed. Roy Laird, et al. (Boulder, Colorado: Westview Press, 1977).

²⁵Harry G. Shaffer, "Soviet Agriculture in the 1976-1980 Plan," p. 31.

²⁶Ibid, p. 52.

²⁷Ibid, p. 32.

TABLE 9

SOWN AREA SELECTED YEARS
(million of hectares)

	1950	1963	1965	1970	1974
Total Sown Area	203.0	218.5	209.1	206.7	216.5
To Grain	115.6	130.0	128.1	119.3	127.2
Fallow	32.0	7.4	14.7	18.4	12.7

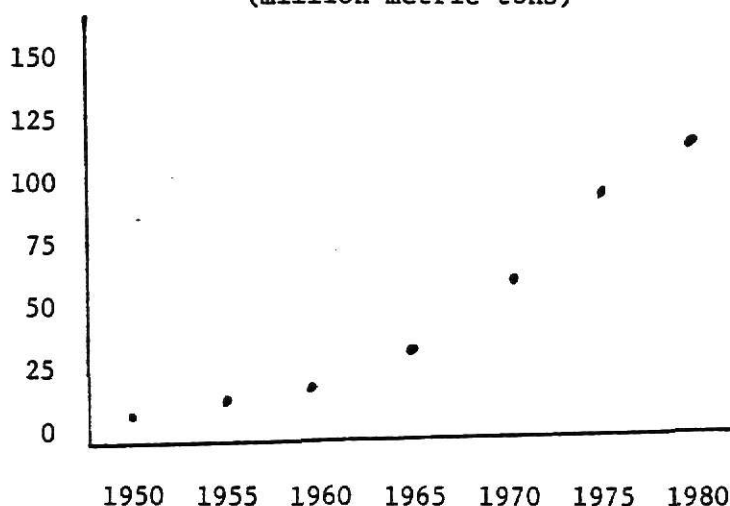
SOURCE: Roy D. Laird and Betty Laird. "The Widening Grain Gap and Prospects for 1980 and 1990," p. 29.

of their tractors each year, which hinders the drive to increase overall numbers.²⁸ A large number of man-hours are spent in the on-farm shops waiting for parts to repair the tractors. As a result, tractors are junked, torn apart, or on some farms, held in reserve for the time when others need repairs. Industrial tractors and trucks are recruited at harvest time to make up the deficit of tractors.

Recently fertilizer has been singled out as the one most important input to increase yields. Output of mineral fertilizer has increased dramatically:

TABLE 10

OUTPUT OF MINERAL FERTILIZER
(million metric tons)



SOURCE: M. Gardner Clark, "Soviet Agricultural Policy," Soviet Agriculture (New York: Praeger Publishers, 1977), p. 34.

(in million tons)

1950	1955	1960	1965	1970	1975	1980(planned)
5	10	14	31	55	90	115

²⁸Paul E. Lydolph, Geography of the USSR, p. 233.

²⁹Harry G. Shaffer, "Soviet Agriculture in the 1976-1980 Plan," p. 34.

Most of the fertilizer produced is nitrogen (45 percent) followed by phosphates (29 percent) and potash (26 percent). Fertilizer is applied according to scientific principles set down by the local agriculture research facility for the entire area. According to Soviet sources, there is never a fertilizer shortage, for the fertilizer supplied is the amount planned for application.

A profound problem that confronts Soviet agriculture is that of transmitting to the farmer in a meaningful fashion the practical application of the research taking place in the agricultural research stations around the country. But the huge tracts of land on each State or Collective farm are considered a unit and cultivated as such. Farm workers, brigade leaders, even administrators have little leeway with regard to the use and cultivation of the land. Crop mixes are determined by procurement quotas, time of cultivation and harvest by a timetable, and inputs are added according to the plan. These measures make everyone equal but do not produce the best yields from the available inputs. Planning does not foster change and innovation, nor does the farm factory idea promote the unique care necessary for each piece of land in each situation. In the research stations, Soviet scholars are in the forefront in plant variation and climatization, etc. However, no channel exists for this information to flow to the farms or into the planning process.

A third area of large investment for Soviet agriculture is land improvement. Along with the traditional emphasis on irrigation projects, a new project has been initiated to improve the non-chernozem region in Northwest RSFSR (around Moscow). This fifteen year plan, started in 1974, provides for the reclamation or improvement of some fifty (50)

million hectares of arable land; thirty-two (32) million hectares of cropland and eighteen (18) million hectares for grazing.³⁰ The price of improving this land is great; the current Five Year Plan (1976-80) calls for thirty-five (35) billion rubles to be invested in agriculture in the non-chernozem region. This includes draining the land, liming the soil, fertilizer, machinery and other improvements.³¹ While the cost is high, the Soviet officials hope it will be worth it. As this area is the most populated region of the U.S.S.R., there will be a ready market for the products, which will be mainly vegetables and meat and dairy products. The increased production of vegetables will relieve some of the pressure of the demand for grain and will also free some hard currency for importing hard-to-grow foodstuffs.

Agriculture in the U.S.S.R. is no longer the ignored sector it was under Stalin. Since Khrushchev opened the Virgin Lands in 1956, agriculture has been a top priority. In response to the added inputs production has increased by 36.8 percent since 1961. (See Table 11.) Why then is the U.S.S.R. importing U.S. grain? The average harvest of 182 mmt (1971-75) is more than adequate to feed the Soviet people; approximately 60 mmt of grain are processed each year for flour, groats, and other products for direct human consumption.³² The increased demand

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³⁰Fletcher Pope, Agriculture in the United State and the Soviet Union (Washington, D.C.: USDA, 1977), p.13.

— ³¹USSR Agriculture Atlas, p.4.

³²Paul E. Lydolph, "Agricultural Potential in the Nonchernozem Zone" The Future of Agriculture in the Soviet Union and Eastern Europe. (Boulder, Colorado: Westview Press, 1973), p.72.

for grains in the U.S.S.R. does not come from population pressures. As the natural rate of increase has been about 9 per 1000 for some years.^{32a} The grain problem of the U.S.S.R. is one of feed grains necessary to feed the livestock. One of the consistent goals of the Brezhnev era has been to improve the diet of the people, particularly meat consumption. From 1961-75 meat production increased 78 percent. (See Table 11.) The Soviet people consumed about 58 kg per capita of meat and poultry in 1975. This was a vast improvement over the consumption of 1965--41 kg, or 1950--26 kg, but it falls short of the 82 kg that the nutritionists of the Soviet Academy of Science recommends.³³

The Soviets began to emphasis meat production in the 1960s. From 1965-76 cattle numbers increased from 87 million head to 109 million head and hog numbers rose from 52 million to 72 million.³⁴ A new form of farm organization accounted for these increased numbers, mainly complexes to which several area farms supply labor and feedstuffs. There are about 2000 complexes scattered across the country. Hog production has traditionally been a priority item, although in the current Five Year Plan, poultry production is slated to receive large investments. The hog units are large, generally multiples of 54,000 head; the largest unit is 216,000 head located in Gorky. Cattle complex size is dependent on the availability of local roughage; cattle receive only a small portion of the feed concentrates.

^{32a}Paul E. Lydolph, Geography of the USSR, p. 105.

³³Harry Shaffer, "Soviet Agriculture: Success or Failure," p. 125.

³⁴USDA, Foreign Agriculture, July 4, 1977.

TABLE 11

AGRICULTURAL OUTPUT: AVERAGES, 1961-75
(in millions of tons unless otherwise stated)

	1961-65	1966-70	1971-75	1971-75
Gross Agricultural Production (billions of Rubles)	66.5	80.5	92.0	136.8
Grain	130.5	167.6	180.2	138.1
Meat	7.9	11.6	14.1	178.4
Milk	51.7	80.6	87.5	169.2
Cotton	5.0	6.1	7.7	154.0

Index 1961-65 = 100.

SOURCE: Harry G. Shaffer, "Soviet Agriculture: Success or Failure?," p. 78.

The preferred hog feed is corn, followed by barley. Cattle concentrates are a mixture of barley, corn, or wheat. Protein source includes oilseed and sunflowerseed meal and dried peas. However, feed conversion efficiency is hampered by: (1) poor grinding of roughage, (2) failure to mix roughage and concentrates, and (3) failure to keep mixed rations in front of livestock.

US-USSR GRAIN AGREEMENT

When the Soviets came into the international market to buy grain in 1963, their major trading partner was Canada, followed by Argentina and Australia. (See Table 7.) The U.S.A. was considered as a supplier only after other sources had been bought out. Again in 1972 the Soviets entered the world market, but that year reserves were down all over the world, so the U.S.S.R. turned to the United States to buy the grain they needed. Although estimates vary, it is agreed that the Soviets bought some 15-18 mmt of grain from the U.S. in 1972-73. Up to that time, supplies in the U.S. had been in surplus and the government supported international grain sales by subsidies. As the Soviets bought the grain low and other buyers (including contractors of the U.S.S.R.) bought high, with the U.S. government paying the difference, accusations have been made that the U.S. government subsidized the 1972-73 grain for the U.S.S.R.³⁵

As a result of the volatile price behavior in 1972, due to secret Soviet buying, disclosure measures for the major grain companies were regulated by the United States Department of Agriculture. Subsidies for export were revised and finally suspended. Greater efforts were made to improve information in the marketplace, one of which was the US-USSR Agricultural Agreement of 1973. This accord provided for annual exchange of agricultural scientists and scholars, seminars on selected

³⁵The Great Grain Robbery, etc.

topics, and more information about crops in progress and expected harvests and import needs. This Agreement was one of the many accords signed by the two nations in 1972-73, among the other SALT I and the Trade Agreement of 1974. The Trade Agreement was rejected by the Soviets after the Senate approved the Jackson-Vanek amendment, which tied MFN (most favored nation) status to free movement of citizens across international boundaries.

The Soviet grain harvest of 1975 was 140 mmt, one of the lowest in ten years. Again the Soviets turned to the United States to buy grain--some 20 mmt. But the public outcry changed the course of events in 1975. Angry Americans protested and the longshoremen refused to move the grain onto ships. President Ford was forced to lay an embargo on grain exports. Under this pressure, the US-USSR Grain Supply Agreement was signed. This Agreement put U.S.-U.S.S.R. trade on a steady footing and provided for one-third (1/3) of all shipments to travel on American carriers. President Ford lifted the embargo in late 1975.

Under the US-USSR Grain Supply Agreement, the U.S.S.R. agrees to purchase at least 30 mmt of U.S. wheat and corn during the five year period beginning October 1976. The Agreement, which binds the Soviets to buy at least 6 mmt of grain each year and to space its purchases and shipments throughout the year, requires U.S. consultation for purchases larger than 8 mmt. It also gives the U.S. the option to reduce the quantity of wheat and corn available for purchase by the U.S.S.R. in years when the total U.S. grain supply falls below 225 mmt. Consultations under the Agreement are held every six months.³⁶

³⁶USDA, Foreign Agriculture, March 6, 1979.

The US-USSR Grain Supply Agreement secures a new steady market for U.S. grain at a time when grain exports are vital to the agricultural economy and to the country as a whole. Since the 1950s, it has been apparent that the U.S. farmer can provide adequate diet for the American people and grow a surplus for export. In 1979, the products from about one-third (1/3) of the U.S. crop acreage will be exported and about 20 percent of the U.S. farm cash receipts are derived from exports. In 1979, the agriculture trade balance of \$15.7 billion offset the \$38.1 billion trade deficit to make the whole balance of trade -\$22.4 billion.³⁷ Over the last 10 years, U.S. agriculture exports have risen from \$8.25 billion to \$32.0 billion. (See Table 12.) The U.S.S.R. is one of the new markets for U.S. agricultural goods, but the list includes Poland, Yugoslavia, China and other non-market economies as well as the traditional trade partners of Japan and the Economic Community.

The Agreement increases information about one of our major trading partners. Consultations are held every six months; at that time information concerning crop predictions, import requirements and export supplies is exchanged. The information generated at the biannual meetings fosters confidence in the market pricing mechanism. A steady demand of 6 mmt is assured for each marketing year; however, if at any time the U.S. grain harvest falls below 225 mmt, the Agreement allows sales to be halted. A precedent for orderly marketing between the U.S. and the U.S.S.R. is set by the terms of the Agreement. In the U.S.S.R. all foreign buying and

³⁷USDA Statistical Handout, May 1979.

TABLE 12

U.S. AGRICULTURAL TRADE BALANCE
1971/72-1978/79

	71/72	72/73	73/74	74/75	75/76	76/77	77/78	78/79
Exports (\$ billion)	8.24	14.98	21.61	21.85	22.76	24.00	27.30	32.0
Imports (\$ billion)	5.94	7.74	10.06	9.47	10.51	13.38	13.89	16.3
Trade Balance	2.30	7.24	11.55	12.38	12.25	10.62	12.42	15.7
Exports (million metric tons)	60.7	99.7	93.4	87.2	106.7	102.2	121.7	127.9

SOURCE: U.S.D.A. Statistical Handbook, May 1979.

selling is the province of special government organizations (Exportkhleb controls the flow of grains); therefore, a monopsony situation can develop which disrupts the competitive market. The intervention of the U.S. Government in this case protects the participants in the U.S. market and forces the U.S.S.R. to abide by fair market practices. This policy sets good precedent for future trading relationships between the U.S.S.R. and U.S. market firms. Recognition of the particular aspects of a command economy allows the U.S. firms and the U.S. Government to compensate for possible unfair advantages. Finally the Grain Agreement does have impact on U.S.-U.S.S.R. political relations. Smooth trade negotiations create an atmosphere for other smooth negotiations. The U.S.A. has become one of the major (if not the major) sources of imported grain for the U.S.S.R. and this can be a positive political element in the United States political policy.

The Grain Agreement has advantages for the Soviet Union. Allowing U.S. supply as the variable factor in their supply equation, the Soviet Union can continue its policy of providing more consumer goods to the people (especially meat) without paying the price to stabilize domestic production (which might be an impossible task). This frees resources to other sectors of the economy, such as manufacturing and munitions. The issue of consumer products is politically viable and a steady supply of meat in some measure forestalls political unrest.* An assured supply of

*My personal assessment is that the Soviet government is in firm control in the U.S.S.R., but it is true that the citizens are very sensitive to the price and the availability of food products. It is by providing the necessities of life at a cheap price that the Communist government gains legitimacy; so the issue of meat does not effect the long-term governing but it does make life easier for the people on the street and the people in power.

grain from the United States minimizes the necessity for a comprehensive storage program and lessens the costs of large stockpiles. Finally foreign grain is cheaper to buy than grain produced on the State and Collective farms in the U.S.S.R. In 1977 the average price paid to the State and Collective farms for government procured grain was 109.70 rubles/ton. (This includes bonuses paid for overfulfillment of the Plan.)³⁸ That equals \$153.58/ton at the exchange rate of \$1.40 = 1.00 ruble. The average price of grain on the U.S. exchanges was about \$2.70/bushel in 1977, or \$99.21/ton. The price of shipping included, U.S. grain is cheaper.

³⁸ USDA, Agricultural Situation USSR (Washington, D.C.: USDA, 1979), p. 29.

IMPLICATIONS OF PRESENT POLICIES

Grain trade does not take place in a vacuum; it is related to all the interaction on the international markets. For many years, U.S. citizens have been buying more imported goods than they have exported. Of course, this has created severe balance of payments problem. In that breach, agricultural products were encouraged for export. The U.S. has a comparative advantage in agriculture; U.S. products are cheap and plentiful. As the dollar devalued vis a vis other currency, the price of agricultural and other products relatively improved. The US-USSR Grain Agreement is in the mainstream of this policy orientation. However, the policy has several domestic implications; some that deal directly with Soviet trade, some that do not.

The immediate effect of selling surplus abroad is to increase prices to the U.S. consumer. For many years, the U.S. farmer has produced a surplus of agricultural products, especially grain and during the same time consumer demand for grains and grain products has remained steady. Therefore, the price of grains fell to the clearing point for supply and demand; in face of inelastic demand curve, prices fell drastically. Selling grain overseas changes the demand for and raises the price of grain. The domestic consumer, therefore, pays a higher price for his grain products.

At the same time, the price at which the domestic market stabilized (prior to the increase in export demand) was unacceptable to the farmer

and to his representatives. Therefore, for many years the U.S. consumer was paying a record sum for his grain in the form of government subsidy to the farmer. It is beyond the scope of this paper to measure the relative costs of these two policies. However, the strong price on the market lessens the need for subsidies, so the U.S. consumer pays one higher price, but the foreign buyer also contributes by paying the same price.

A dependence on foreign sales to equalize supply and demand makes the U.S. farmer dependent on the decisions of foreign countries for the price of his grain. Particularly, the Soviet Union essentially exports her fluctuations in harvests to the United States. The U.S. markets bear the cost of domestic fluctuations in the U.S.S.R., for purchases by the U.S.S.R. have varied from 8 mmt to 18 mmt. Nor does the Grain Agreement stabilize prices on the U.S. market, for since the introduction in 1976, prices have varied from \$2.00 to \$4.50 and more. While the Agreement may interject foreknowledge of supply and demand trends and oblige the U.S.S.R. to abide by fair market practices, it does not, of itself, stabilize prices.

Close trade ties between the U.S.A. and the U.S.S.R. may increase market demand for surplus agricultural goods, but there are some political considerations

It might be that close trade relations are inimical to overall political relations, for at times the United States may wish to distance itself from the Soviet Union. The theory of "linkage"* works both ways. Good trade relations might smooth

*"Linkage" is a political theory supported by Henry Kissinger that holds that all aspects of international relations impact on one another; that nothing can be divorced from the whole situation. Soviet authorities

the way for political relations; so might bad trade relations worsen political situations. Finally, if political relations become strained, this might disrupt domestic markets dependent on foreign demand.

have refuted the linkage theory over the years, for they feel that each aspect must be judged on its merits (i.e., they can continue peaceful trade with capitalist countries, while at the same time supporting anti-capitalist movements in other parts of the world).

CONCLUSION

In the context of the history of Soviet agriculture, the present US-USSR Grain Agreement is part of a pattern of increasing integration in the world economic structure and an increasing trend by the Soviet Union to turn to the world markets to make up for shortfalls in domestic efforts. The traditional method of increasing production in the U.S.S.R. was to plant more land, but all arable land is now under cultivation; further increases must come from modern farming practices and increased efficiency. The Collective system of management has built-in weaknesses such as waste due to indifferent management and unrealistic decisions based on orders sent down from the Central Planning Agency. Stalin ignored these structural problems by accepting a low standard of living for the people; the present regime skirts the problem by buying foreign grain to make up for shortfalls in domestic production.

Many observers and participants in Soviet agriculture suggest many solutions to these problems. Western observers and Soviet agronomists are both critical of the system, but in different ways, and their remedies differ accordingly. Some Westerners suggest that the Collective model is a major cause of trouble for Soviet agriculture; others mention the low machinery and fertilizer inputs compared to Western countries. Soviet scientists suggest ways to work within the system to improve efficiency, increase the variety of grains planted, and extend conservation practices. In response to the soil, climate, and variable weather conditions, little

can be done to mitigate these circumstances; but many measures are mentioned repeatedly in the literature dealing with the technical and social problems of Soviet agriculture. They include: (1) more investment in terms of tractors, trucks, mechanization of chores, fertilizer, soil improvement, etc. The government has increasingly been aware of these needs and has taken measures to fulfill them. (2) emphasis on research and conservation--variety and diversity of grains, summer fallowing, crop rotation, wind breaks, weed control, optimum measures of fertilizer, water, and seed, and farming practices tailored to local conditions, and (3) social improvements--improved housing, more incentives and a greater share in decision-making for the manager and the peasant, more personal involvement in agricultural production.

Agriculture has become increasingly important in Soviet policy over the years. At the inception of the Soviet state agriculture was considered a second (or third) priority; indeed, savings were forced from the agricultural sector of the economy to be invested in the industrial sector. But after Khrushchev, the policy was reversed until today the agriculture sector receives about one-fourth of investment expenditures in the U.S.S.R. Change comes slowly for Soviet agriculture is hampered by climatic conditions that cannot be changed and by structural factors which will not be changed. Therefore, the Soviet government has chosen to supplement domestic production on the foreign market and the United States has emerged as their major trading partner. Under present circumstances, this situation is likely to continue. Soviet policy makers are working to improve Soviet agriculture, but the needed changes are exactly those structural changes that are hardest to accomplish.

APPENDIX A
GRAIN STATISTICS 1901-1979
(million metric tons)

Years (average)	Grain Production	Imports	Exports
1901-04	60.7	na	9.72
1904-07	62.3	na	10.00
1907-10	67.2	na	10.09
1910-13	72.1	na	10.73
1925-29	73.3	na	1.2
1929	71.7	na	1.0
1930	83.5	na	5.4
1931	69.5	na	4.4
1932	69.9	na	1.4
1933	68.4	na	na
1934	67.6	na	na
1935	75.0	na	na
1940	95.6	na	na
1955	103.7	0.31	3.7
1956	125.0	0.9	5.4
1957	102.6	1.5	6.2
1958	134.7	1.7	7.7
1959	119.5	1.0	6.8
1960	125.5	0.8	7.0
1961	130.8	0.8	8.4
1962	140.2	0.6	8.3
1963	107.5	10.4	4.7
1964	152.1	2.6	4.3
1965	121.1	9.0	5.3
1966	171.2	3.9	5.3
1967	147.9	2.3	6.4
1968	169.5	1.2	7.4
1969	162.4	1.8	7.6
1970	186.8	1.3	8.5
1971	181.2	8.3	6.9
1972	168.2	22.8	1.8
1973	222.5	11.3	6.1
1974	195.7	5.7	5.3
1975	140.1	26.1	0.7
1976	223.8	11.0	3.3
1977	195.7	19.1	2.3
1978	235	14.3	2.9
1979	185 (est)	na	na

na - not available

SOURCE: Joseph M. Goldstein. Russia, Her Economic Past and Future; pp. 13, 29, Lazar Volin, A Century of Russian Agriculture, p. 232; U.S.D.A., Agricultural Situation, USSR, p. 4.

APPENDIX B PROBLEMS WITH THE DATA ON THE U.S.S.R.

One of the major problems confronting a student of the Soviet Union is the problem of data.

Concrete statistics on Soviet agriculture and industry are lacking for long periods of time. This gives Western scholars an opportunity to extrapolate statistics from insufficient facts. For purposes of comparison, some Western scholars deflate available grain Soviet statistics by 10 percent or more. These deflated figures may accurately reflect the statistics of that year, but they are irrelevant for time series analysis.

A problem that arises in U.S. statistics is the various time frames that can be considered. The marketing year begins in June and ends in May; the old fiscal year was from July to June, now it is from October and September; finally, the time frame for the US-USSR Grain Agreement is from October 15 to October 15.

Recently the Soviets have again begun to selectively publish statistics. Under Stalin only those statistics that reflected favorably on Soviet progress were published, then Khrushchev opened the printers and the Soviets quantified everything. However, in 1977 the Soviets only published value, not volume statistics for grain exports, so that historic analysis is disrupted. Time analysis is also set askance because the area of the U.S.S.R. changed over the years.

Standard weights and measures do not exist across the world. The term "grain" in a Soviet publication might include wheat, rye, oats, buckwheat, and occasionally rice. U.S. statistics are broken down into food grains--wheat, oats, rye--, and feed grains--corn and sorghum. Soviet statistics on wheat vary from U.S. statistics because of differences in moisture content and percent of foreign material. The total harvest figure in the U.S.S.R. varies from export/import figures in the same manner.

To overcome these problems, I have sought to use statistics from a few compatible sources. Volin's A Century of Russian Agriculture is a thoroughly researched and widely respected source of data. Thereafter I have chosen to use USDA statistics to maximize consistency of time frame and minimize the deflation or bias inherent in some data. Data on prices is less relevant than volume data in long run analysis unless the prices are properly indexed. Therefore, the paper focuses on volume statistics.

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SOVIET AGRICULTURAL POLICY
AND GRAIN TRADE

by

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AN ABSTRACT OF A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Economics
Agricultural Economics

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1980

ABSTRACT

The principle focus of this economic report is to evaluate the historical trend of Soviet agricultural policy and its impact on Western agricultural markets. It reviews the growing orientation of Soviet planners towards a policy of exporting the economic impacts of shortfalls in their domestic agricultural production to Western agricultural markets especially the United States. In this context, the U.S.-U.S.S.R. Agricultural Agreement of 1973 is evaluated in terms of its ability to moderate the disruptions to United States' agricultural markets, to foster stable and expanded trade relationships with the U.S.S.R. in the future, and to offset the monopsony power of a single Soviet purchasing organization (Exportkhleb). This paper also evaluates the U.S.-U.S.S.R. Agricultural Agreement of 1973 in terms of its ability to promote the comparative advantage of U.S. agricultural production in the world markets as well as to stabilize the prices and incomes of our domestic agricultural sector.

The conclusion of this economic report is that these objectives of the U.S.-U.S. Agricultural Agreement of 1973 have been significantly achieved. The Agricultural Agreement of 1973 forms a solid foundation for and can act as a prototype for similar and more comprehensive agreements with the U.S.S.R. and other agricultural trading nations in the world markets in the future.