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POLICY OBJECTIVES AND MANAGEMENT GOALS IN SOVIET AGRICULTURE

By

Philip M. Raup

Department of Agricultural Economics

University of Minnesota
Institute of Agriculture
St. Paul, Minnesota 55108

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IN SOVIET AGRICULTURE

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Policy Objectives and Management Goals in Soviet Agriculture ^{1/}

I. The Soviet Agricultural Structure

Agricultural policy in the Soviet Union has fluctuated violently, in the 52 years since 1917, but it has never been far from the center of the national policy stage. This is appropriate in a country in which over three-fourths of the population was engaged in agriculture in 1917, and which in 1967 still housed almost half its population in rural areas and employed thirty-five per cent of its civilian labor force in agriculture. ^{2/}

The size of the country and enormity of its agricultural problems make presumptuous any attempt to discuss them within the limits of a short paper. The most that is attempted here is an outline of major directions of agricultural policy evolution in recent decades, and some frankly speculative interpretations of past and probable consequences of policy changes.

These interpretations draw heavily upon data supplied by other research workers, especially Jerzy F. Karcz, Arcadius Kahan, Nancy Nimitz, Alec Nove, Gregory Grossman, and Karl-Eugen Wädekin. These and other sources are supplemented by primary data collected in interviews with Soviet agricultural officials and farm managers during study tours of the U.S.S.R. in 1958 and 1968. The interpretation of developments in the Soviet Union has also

^{1/} Paper prepared for symposium on "Farm Policy Goals and Research Needs," North Central Regional Farm Policy Research Committee, NCR-56, Chicago, Illinois, March 10-11, 1969. In revising the paper I have benefitted greatly from discussions with Max Langham and Yujiro Hayami. They have had no opportunity to review the final paper and cannot be held responsible for the use I have made of their suggestions.

^{2/} U.S. Dept. of Commerce, Estimates and Projections of the Labor Force and Civilian Employment in the U.S.S.R.: 1950-1975, Washington, Bureau of the Census, International Population Reports, Series P-91, No. 15, June 1967, Table 5, p. 15.

benefitted greatly from interviews with farm managers and agricultural officials throughout Eastern Europe, in the course of research in Bulgaria, Czechoslovakia, Hungary, Poland, Rumania, and Yugoslavia in 1967, and in Czechoslovakia in early August 1968. ^{3/}

The broad outlines of Soviet agricultural policy are common knowledge, with the dominant direction set by the decision to collectivize in 1929. ^{4/} No discussion of the subsequent evolution of policy objectives and management goals is possible without reference to the three-part structure of Soviet agriculture that emerged, comprising state farms, collective farms and private plots.

Table 1 attempts to set forth the bare bones of this structure, in terms of number and size of farms, labor force, and livestock inventories for the average state and collective farm, in 1960 and in 1967.

In that period, state farms increased sharply in numbers but declined in average size, both in terms of acres sown and number of workers. Much of the expansion in number of state farms in the 1950's occurred in the "virgin lands" areas, where for awhile continuous cropping was attempted. A shift to summer fallowing in the 1960's accounts in part for the decline in average sown area per state farm. This decline was also due in part to the consolidation and conversion of (usually smaller) collective farms into state farms. This conversion of collective to state farms was accelerated by abolition of the machine tractor stations in 1958 and the subsequent financial crisis on collective farms when

^{3/} These research tours were made possible by support from the Louis M. and Maud Hill Family Foundation of St. Paul, Minnesota and from the University of Minnesota, which is gratefully acknowledged.

^{4/} The most recent, and best, account of this historic transformation is M. Lewin, Russian Peasants and Soviet Power, London, George Allen and Unwin, 1968. The French original, La Paysannerie et le Pouvoir Sovietique, was first published in 1966 in Paris by Mouton.

Table 1:

Selected Comparative Data for State and Collective Farms in the USSR, 1960 and 1967^{a/}

<u>Item</u>	<u>Unit</u>	<u>State Farms</u>		<u>Collective Farms</u>	
		<u>1960</u>	<u>1967</u>	<u>1960</u>	<u>1967</u>
Number of farms	farm	7,375	12,773	44,000	36,187
<u>AVERAGES PER FARM</u>					
Workers ^{b/}	persons	745	618	383	418
Sown area	hectares	9,000	6,900	2,700	2,800
	acres	22,239	17,050	6,672	6,920
Sown area per worker	hectares	12.1	11.2	7.05	6.7
	acres	29.8	27.6	17.4	16.6
Horned cattle	head	1,715	2,019	807	1,092
of which cows	head	689	726	286	386
Swine	head	1,715	918	609	599
Sheep and goats	head	4,280	4,045	1,612	1,533
Milk yield per cow	kilo	2,185	2,268	1,854	2,042

^{a/} Computed from SSSR v tsifrakh v 1967 godu, Moscow, Central Statistical Office, 1968, pp. 82, 92, 93.

^{b/} For state farms, number of farm workers; for collective farms, number of collective farm members.

faced with the requirement that they buy their own farm machinery. But in both sown area and labor force, the average state farm in 1967 was still almost two and one-half times larger than the average collective.

The resulting farms are the largest in the world. On average, a collective farm seeds eleven square miles of crop land each year, and a state farm nearly twenty-seven square miles. These size data have significant implications for management policies for they make clear the fact that the average farm encompasses a wide range of land types and soil quality, even in a country noted for its vast sweeps of relatively uniform soil types.

In spite of forty years of stress on farm mechanization the sown area per farm worker has declined in recent years, on both state and collective farms. Sown areas in 1967 averaged 17 acres per worker on collective farms, and 28 acres on state farms. In the United States, the comparable figure for 1966 was 58 acres of sown area per farm worker. ^{5/}

In gross value terms, the trends since 1958 in agricultural output by sectors are shown in Table 2. Over the eight years 1958-65, the gross value of output at constant prices remained virtually unchanged for collective farms, and for the private plots, while doubling for the state farms.

In percentage terms, collective farms in 1958 produced 47 per cent of gross output, state farms 16 per cent, and the private plots 37 per cent. In 1965, the share produced by collective farms dropped to 42 per cent, the state farm share rose to 26 per cent and the private plots fell to 32 per cent.

^{5/} Government Printing Office, Soviet Economic Performance, 1966-67, Joint Economic Committee, 90th Congress, 2nd Session, Washington, May 1968, p. 32.

Table 2:

Estimates of Gross Agricultural Output

by Sector Shares, USSR, 1958-65^{a/}

(In billions of 1958 rubles)

	<u>SOCIALIZED SECTOR^{b/}</u>						PRIVATE		TOTAL ALL SECTORS
	Collective Farms (Kolkhoz)		State Farms (Sovkhoz and Related Firms)		Total Socialized Sector		SECTOR		
	Billion Rubles	%	Billion Rubles	%	Billion Rubles	%	Billion Rubles	%	Billion Rubles
1958	23.0	47.4	7.5	15.5	30.5	62.9	18.0	37.1	48.5
1959	--	--	8.2	--	--	--	--	--	--
1960	22.3	44.8	10.2	20.5	32.5	65.3	17.3	--	49.8
1961	--	--	12.5	--	--	--	--	--	--
1962	21.3	41.1	13.3	25.6	34.6	66.7	17.3	33.3	51.9
1963	19.0	39.6	--	--	31.6	65.8	16.4	34.2	48.0
1964	23.0	41.9	--	--	38.3	69.8	16.6	30.2	54.9
1965	23.5	41.7	14.8	26.3	38.3	68.0	18.0	32.0	56.3

^{a/} Adapted from Karl-Eugen Wadekin, "Kolkhoz, Sovkhoz and Private Production in Soviet Agriculture," Agrarian Policies and Problems in Communist and Non-Communist Countries, W. A. Douglas Jackson, Editor, Seattle, University of Washington Press (in press)."

^{b/} Data for state farms and related state controlled agricultural units are reported in Soviet sources in more detail than are data for collective farms, or for the private sector. Collective farm and private sector data must be taken as approximations only.

The most noteworthy fact revealed by these statistics is that state farms in 1965 accounted for only slightly over one-fourth of gross agricultural output, in spite of strenuous efforts over forty years to support and expand them as superior forms of socialist agricultural enterprises. Equally noteworthy is the fact that private plots, occupying only 1.4 per cent of the agriculturally used land and accounting for only 3.2 per cent of the sown area, had 31 per cent of total livestock units in 1965, and produced 32 per cent of gross agricultural output. ^{6/}

The resulting structure of agriculture in the Soviet Union is tripartite. The state farm sector is fully socialized, and operates at a scale that is unique. The collective farm sector resembles the traditional peasant household, writ large, as we shall see. And the private plots constitute a traditional sector that invites comparison with subsistence sectors in "dual-economy models" of developing countries. In their evolution these sectors have developed an interdependence that provides a principal key to the understanding of current and prospective trends in Soviet farm policy.

^{6/} Karl-Eugen Wädekin, "Kolkhoz, Sovkhoz, and Private Production in Soviet Agriculture," Agrarian Policies and Problems in Communist and Non-Communist Countries, W. A. Douglas Jackson, editor, Seattle, University of Washington Press (in press). It should be noted that private plot holders are frequently able to use free hay, straw and pasture generated by the collective farm. The inputs into the private sector are thus greater than is indicated by their proportionate share in agricultural land or sown area.

II. The Structure of Farm Prices

No appraisal of Soviet farm policy objectives and management goals is possible without a brief review of the structure of relative agricultural product prices at the farm level. This is done in abbreviated form in Table 3. To provide a basis for comparison, August 1968 farm prices for key food products are shown for Minnesota, in the U.S.A., and for the Rostov-Krasnodar area (to the east of the Black Sea) in the U.S.S.R.

In interpreting the Soviet prices, two characteristics of farm price policy must be kept in mind:

- 1) Prices are set at the central planning authority level, may remain unchanged for several production cycles, and are subject to drastic episodic changes. The most dramatic recent change was in March 1965 when prices were raised for most farm products, and livestock products were especially favored. ^{7/}
- 2) Prices are designed to cover costs of production and are graduated by geographic zones, with different zones for different products. Zonal boundaries typically coincide with republic, krai, or regional (oblast) administrative boundaries. Within zones, some price variation is possible if supported by economic studies showing wide deviation in production costs due to natural conditions. ^{8/}

^{7/} See Naum Jasny, "Production Costs and Prices in Soviet Agriculture", Soviet and East European Agriculture, Jerzy F. Karcz, Editor, Berkeley, University of California Press, 1967, pp. 216-228.

^{8/} Information from interviews with staff of the Novosibirsk branch office of the All-Union Institute of Agricultural Economics Research, September 1968.

Table 3

Comparison of
Prices Received by Farmers
in Minnesota and in the USSR
(Rostov-Krasnodar Area)
August 1968

Product	Unit	Minnesota	USSR
		(at local markets) ^{a/}	Rostov-Krasnodar area (at farm gate) ^{b/}
		Dollars	Dollars
Wheat	bushel	1.33	1.96
Corn	bushel	.96	1.68
Hogs	cwt.	18.90	51.00
Beef cattle	cwt.	25.70	57.00
Milk, wholesale	cwt.	4.35	6.55 (3.6% b.f.) 7.45 (4.0% b.f.)
Chickens	pound	0.055	.63
Eggs	dozen	0.27	.91

^{a/} Minnesota Crop Reporter, St. Paul, September 1968 (prices for Aug. 15, 1968).

^{b/} Obtained in interviews with state and collective farm managers near Rostov and Krasnodar, RSFSR, August, 1968. Prices in rubles are converted at the official rate of ruble 1.00 = \$1.11. Note that Minnesota farm prices are at local markets, with the farmer bearing the cost of transport, and any shrinkage (in the case of livestock). Soviet prices are net at the farm gate, with the state procurement agencies bearing the cost of transport and shrinkage. If the farms transport the product to market, they are paid transport costs by the procurement agencies.

Because the official exchange rate of the ruble at \$1.11 is inflated in terms of real purchasing power, the data from Table 3 can not be used without major adjustments to make meaningful price comparisons for a given product between the U.S.A. and the U.S.S.R. But it is possible to use the data for an analysis of relative prices within regions of each country.

An example of this use of the data is given in Table 4, in which hog-corn and beef-corn price ratios have been computed for Minnesota and for the Kuban (Krasnodar). Although corn in the Kuban is not the dominant feedstuff for beef and hogs that it is in Minnesota, it is fed to these animals. Corn yields per hectare in the Krasnodar Krai are among the highest in the U.S.S.R., and farm managers do have some freedom in deciding whether to sell their corn, or feed it.

The prices in Table 3 and the ratios in Table 4 provide a rough estimate of the extent to which prices for animal products relative to field crops are higher in the Kuban than in Minnesota. In an economy guided by market prices, a hog-corn ratio of 30 and a beef-corn ratio of 34 would guarantee a rapid expansion in hog and beef feeding. Yet red meats are in short supply in the U.S.S.R. Pork output in particular has been shown to recover from the disastrous decline in 1963-64, when pig numbers dropped from 70 million to 41 million.

One reason is that the emphasis in livestock management has typically been on numbers rather than on quality. It has been a goal of farm managers to have a big inventory of livestock on January 1, the annual census date. As a consequence, cattle and hog numbers are often out of balance with feed supplies. In poor crop years, enforced grain deliveries tend to exhaust farm feed supplies, and managers must buy feed at very high prices. This has

Table 4

Hog-Corn and Beef-Corn Price Ratios,
Minnesota, U.S.A., and the Kuban, U.S.S.R.

August 1968 ^{a/}

Hog-Corn Ratio

	<u>Price in</u> <u>\$</u>	=	<u>Ratio</u>
U.S., Minnesota			
<u>Price of hogs per 100 lbs.</u>	<u>18.90</u>	=	19.7
<u>Price of corn per bu.</u>	<u>.96</u>		
U.S.S.R., Krasnodar area, the Kuban			
<u>Price of hogs per 100 lbs.</u>	<u>51.00</u>	=	30.4
<u>Price of corn per bu.</u>	<u>1.68</u>		

Beef-Corn Ratio

U.S., Minnesota			
<u>Price of beef cattle per 100 lbs.</u>	<u>25.70</u>	=	26.8
<u>Price of corn per bu.</u>	<u>.96</u>		
U.S.S.R., Krasnodar area, the Kuban			
<u>Price of beef cattle per 100 lbs.</u>	<u>57.00</u>		33.9
<u>Price of corn per bu.</u>	<u>1.68</u>		

^{a/} Data for Minnesota from Minnesota Crop Reporter, St. Paul, September 1968 (data for August 15, 1968). For USSR, data from interviews with collective farm officials in the Krasnodar area, RSFSR, Aug. 1968. Price conversions at the official exchange rate of ruble 1.00 = \$1.11.

discouraged grain-feeding of livestock, in spite of nominal livestock-grain ratios that appear favorable. If feed must be purchased, the ratios are very unfavorable.

Although the Krasnodar and Rostov areas cannot be regarded as representative of the U.S.S.R., these differences in relative prices suggest that price signals in the Soviet agricultural economy are only weakly related to supply responses. Products that are keenly desired--red meats, and eggs, for example--are high priced by any standard yet supply has consistently fallen short of demand. To understand some of the reasons for this failure of performance to match objectives it is necessary to look more closely at the framework within which production decisions are made in the U.S.S.R.

III. The Evolution of Management Goals

Until quite recently three words were seldom heard in the Soviet Union: rent, interest and profit. Land was the property of the states, and was assigned at no cost to farms, factories or housing authorities. Although mandatory delivery quotas, low procurement prices and (prior to 1958) the system of payment in kind for services of the Machine Tractor Stations (the MTS) were clearly methods for appropriating economic rent by the state, there was no overt calculation of economic rent. No price for the use of land entered into the calculation of costs of production.

In using capital, a rate of interest was not used in computing the relative costs and benefits of different investment opportunities. Ingenuous alternatives were developed to measure the relative attractiveness of different projects. These were usually based on some variation of the "pay-out period," or the number of years it would take to replace the original capital at the anticipated annual rate of profit or benefit. In this sense, there was no adequate price on time. Capital would be tied up in half-completed projects for long periods of time, and there would be no mounting interest charge to spur completion.

The abolition of the MTS in 1958 forced a reform in capital and credit policies. State farms and the MTS had received allocations of capital according to need, and in this sense have been referred to as "primitive socialist enterprises." With abolition of the MTS, the collective farms faced immediate credit needs to enable them to buy the old MTS equipment and needed new equipment. A system of bank credit has emerged, designed especially to serve the collective farms. Loans are available, but at artificially low interest

rates. Production credit in the summer of 1968 was available at 2%, while the same banks were paying 3% on deposits by the farms. ^{9/}

With no price on land (no charge for economic rent), and no adequate price on capital (which is to say, no good measure of the time-costs of production), the factor pricing policies of the U.S.S.R. resulted in acute distortions in economic activity. Product prices were set at levels believed high enough to cover costs of production on average farms in each production zone. With no charge for land, costs of production were understated on the best lands, or on lands near cities. The result was that lands with alternative uses for urban or industrial purposes were used wastefully. With land left out of the reckoning, there was no price signal to flash a warning when land was being misused. This situation prevailed through 1968.

The lack of a functional interest rate has also led to long-standing distortions in production. There was no adequate price signal to warn that farm mechanization in the U.S.S.R. was going too far and too fast in the 1930's. Millions of rubles were invested in farm machinery at a time when there was excessive farm labor in the countryside and few alternative jobs. Capital has been "cheap" in the Soviet Union, due in part to lack of an interest rate to use in computing the opportunity cost of capital, and depreciation. This delayed the development of a realization that "time is valuable", in an economy that was shifting rapidly from an agricultural to an industrial base.

^{9/} Interviews with state and collective farm managers in the Rostov and Krasnodar areas, August 1968.

The goals set for farm managers have had similarly distorting effects. Throughout the war years and until the end of the 1950's the goal for farm managers in the U.S.S.R. was to "maximize output per hectare." This was a physical goal, measured in kilograms, tons and liters. It gave the individual farm manager no guidance in selecting among different products, and it was not intended to do so. Decisions as to what to produce were made by the planning authorities. The farm manager was given a set of delivery quotas for the different products, and it was left to him to use his available resources to meet these goals.

Following abolition of the MTS there was a gradual change in management goals, and the target of "maximum output per acre" was converted into a money equivalent. The new goal was to "maximize gross output", in money terms. It led to strange results. The farm manager often had little incentive to pick the cheapest input that would do the job. "Maximizing gross output" also led to an emphasis on high-valued products, at the expense of lower valued products which might still be important as food staples (potatoes, for example).

After 1966 a new management goal was introduced, the "maximization of gross income." In practice, this meant maximizing returns from farm product sales, minus the costs of purchased inputs. This is a Soviet version of "value added in production." It too led to strange results.

Labor cost is the principal component of value added. On state farms, labor is a "purchased input." But until quite recently this was not true on collective farms. To maximize gross income, or value added on a collective farm, it might pay to use more labor rather than less. Spreading manure by hand, for example, would yield a higher gross income to the farm than spreading it by machine. Where labor was rewarded by a share in gross income,

the goal discouraged economizing on labor and the manager might be tempted to substitute labor for machines.

Farm management decision making was also profoundly affected by assurances that accompanied the price increases of March 1965. Managers were told that prices would not be changed (and certainly not lowered) for five years. Procurement quotas were also guaranteed to remain unchanged for five years. These guaranteed prices and quotas were intended to reassure and protect farm managers. Instead, the guaranteed levels immobilized managers. Many have wanted to introduce changes, drop some product lines, or increase specialization. They have been inhibited from doing so by the rigidities of the price structure and delivery quota system.

This was the situation in 1967-68. There was no price on land to permit the calculation of its economic rent. There was no realistic price on time (interest rate) to permit calculation of the marginal productivity of capital. And on collective farms there was a possibility that management goals were encouraging the use of more labor at a time when labor was increasingly needed for non-farm jobs.

The new management goal of maximizing gross income highlighted the potential conflict between labor force and management on collective farms. To prevent distribution of all available income in the form of wage payments, central planning authorities retained direct control over the wages fund. For each farm, the annual production plan included a fixed limit on the total fund that could be used for wage payments. Within each farm, the management set a limit on the wages fund for each brigade, or sub-unit. But some control was needed, to prevent farm workers from bringing pressure on management to distribute all earnings as wage payments. In this fashion an awkward form of profit maximization was introduced as a management goal.

A much more radical step is being taken with regard to land. On 13 December 1968 a drastic change in land legislation was enacted by the Supreme Soviet of the U.S.S.R., effective July 1, 1969. This law provided for the valuation of land, set up a national cadaster or register of rights in land, and made it clear that compensation was to be paid for any land taken by the state. If land is taken from a farm for a highway, the farm is to be compensated. If a city expands, and engulfs a collective farm, "city hall" or the housing authorities must pay compensation for the land taken. Fifty-two years after the "October Revolution," a price was finally put on land in the Soviet Union. ^{10/}

The significance of this step is great. If the policy is implemented, it will enable the establishment of more realistic crop production and delivery targets by planning authorities, and will provide farm managers with a better guide to wise use of land resources, especially in areas of encroaching urban uses. A more immediate gain may concern the planned "automatic extension of credit" to the collective farms. To obtain this automatic credit, the collective farm must submit its development plan for the coming 5 years. Given the principle of "no plan, no credit", the economic evaluation of land may give a firmer basis for the extension of credit on the strength of the plan. Collective farm officials in the Fall of 1968 felt that this could well be one of the most significant improvements to result from the new land law.

^{10/} For a translation of the complete text of the new law, see Current Digest of the Soviet Press, Vol. 21, No. 1, January 22, 1969, pp. 12-20. A basic background document is Zemel'nyi Kadaster SSSR (Land Cadaster of the USSR), Moscow, Izdatel'stvo "Ekonomika", 1967.

Putting a price on land did not meet with universal acclaim in agricultural circles. Some farm managers and agricultural economists interviewed in 1968 feared that a price system that included land prices might be used by non-agricultural planners to restructure the old system of geographically differentiated quotas and enforced deliveries, in a new guise. Land prices based on reasonably accurate calculations of economic rent would point up the favorable position of those farms that were advantageously situated. Higher quotas might well be the consequence. Some of the agricultural economists of the USSR have not been enthusiastic supporters of the decision to price land.

In the long run, the pricing of land may turn out to be the necessary step that had to be taken before true costs of production can be calculated by the USSR and its trading partners in the Council of Mutual Economic Assistance (COMECON). In this sense, pricing land in the USSR may be a necessary condition for the development of a freely convertible ruble in international trade. If this is the consequence, it will mark a historic step in the development of the Soviet economy. Realistic costs of production, permitting comparisons with world market price levels, will enable the USSR to enter the trading world freed from the nagging fear that it may be exporting the wrong products.

Prices that represent true production costs are the first requisite for freedom in trading negotiations. Trade negotiations can be left up to individual firms, freed from the rigid dominance of state trading authorities, only if prices are reasonably satisfactory measures of the values being exchanged. With no charge for land rent in Soviet prices, it is clear that political decisions had to dominate foreign trade relations. In both micro and macro dimensions, putting a price on land could turn out to be one of the most important events in the history of the evolution of socialism in the Soviet Union.

In both symbolic and operational terms, a similarly dramatic shift has taken place in the method of paying collective farm workers. Beginning gradually in 1966-67 and accelerating in 1968, collective farms shifted to a monthly wage for their farm workers. In the past, and still today on some farms, the collective farm worker has been credited with "labor days" for each job performed, according to a graduated scale. An 8-hour day in one job might be worth 0.6 labor day units, while the same hours in a highly skilled job might be credited as 3.0 labor days. The accumulated sum of labor day units at the end of the year determined the worker's share in total farm income.

The shift to a monthly money wage plus a possible bonus if the farm has had a profitable year has removed the biggest barrier to meaningful cost comparisons between state and collective farms. State farm workers have always been paid on a cash wage basis, but the uncertain money value of the labor day unit on the collective farms made it difficult to compare labor costs of production on state and collective farms.

This difficulty is being removed. One consequence is to throw a sharper light on the high labor costs of production on some farms. This is leading planning authorities, economic research workers, and farm managers to focus attention on comparative labor productivity. And it is contributing to a convergence of management norms on the state and collective farms.

This convergence was accelerated by a shift after 1966 to a requirement that state farms finance capital investments out of earnings. In the past, state farms received capital allocations for major investments from the state authorities. The procedures followed were reminiscent of the methods by which a rural town in the United States might acquire a new post office.

This contributed to a certain carelessness on the part of state farm managers in computing realistic estimates of the marginal productivity of new capital investments.

Under the new principle of self-financing (the khozraschiot principle), state farms are no longer "on the budget." Irrigation projects, drainage, and certain large buildings and melioration works will still be financed by the state. But in general, farms are now required to finance investments from earnings. This is leading toward convergence in accounting practices and operational procedures among state and collective farms. This is revealing the high capital costs of production on some state farms. Over time it may contribute to a more realistic assesement of the relative efficiency of resource use. One consequence may be to dampen official enthusiasm for state farms, whose high costs of production have often been disguised in the past.

IV. Some Unintended Consequences of Policy
Goals and Management Practices

The decision-making framework for macro and micro agricultural management can be summarized in the following manner:

- 1) At the national policy level, a political welfare function is being maximized in which two goals dominate:
 - a) Insure a food and fiber supply for urban and industrial areas
 - b) Provide an export surplus of selected products to satisfy commitments to trading partners and to earn badly needed hard-currency foreign exchange.
- 2) At the planning level, a utility function is being maximized in which the utility of successes may be intangible and small (honors, prestige) while the disutility of failures may be painfully tangible and great (transfer, demotion, loss of job).
- 3) At the farm level, a modified profit function is being maximized, subject to two principal constraints:
 - a) An administrative control on global labor income
 - b) An investment policy that calls for internal self-financing of capital improvements (the khozraschiot principle).
- 4) Through 1968, there had been no charge for the use of land.
- 5) Production credit is heavily subsidized with the typical rate of interest set at 2%.
- 6) Product and factor prices are administratively fixed, and change at irregular intervals. In 1965, farmers were promised stable prices and unchanged delivery quotas for five years.

- 7) Product price levels are designed to cover average costs of production, by zones.
- 8) Forward supply contracts are negotiated between procurement agencies and state and collective farms, typically specifying guaranteed minimum delivery quantities with sometimes handsome bonuses for above-contract quantities or qualities. Base prices are not negotiable; premiums may be. For some products, minimum sown areas or planting quotas are specified, e.g. wheat. For others, maximum permissible sown areas are set, e.g. sunflowers. ^{11/}

The resulting matrix in which planning and management decisions are made is heavily biased toward caution and conservatism. Decision-making is fragmented, and decision-makers at the different levels are optimizing different functions. One consequence has been to penalize specialization in agricultural production.

In a capitalist economy, the lure of profits may lead decision makers to over-assess the probability of gains, and under-assess the probability of losses. Coupled with this is the expectation that profits can be largely retained, while serious losses may be passed on in part to others, especially if the firm operates with borrowed funds or shareholder equities.

In a socialist economy, an opposite set of expectations prevails. Decision makers at the firm or industry level seem likely to under-assess the probability of profits and over-assess the probability of losses. This is associated with the expectation that profits will have to be shared with other

^{11/} One farm manager observed in August 1968: "Sunflowers at present prices are so profitable I would put every hectare in sunflowers if I could."

(especially the state procurement agencies), while any losses will have to be borne wholly by the decision makers.

This suggests the following hypotheses:

- 1) The capitalist decision-maker's expectations of profit and loss are non-symmetrical, and skewed to the profit side. This encourages specialization.
- 2) The socialist decision-maker's (planner's, firm manager's) profit and loss expectations are also non-symmetrical, but skewed to the loss side. This discourages specialization.

In the Soviet economy, the high cost of failure reenforces the traditional peasant preference for a diversified mix of production, in order to reduce risk. This led to a repetition, especially at the collective farm level, of the "universal peasant household" as the model for production organization. A preference for risk insurance through diversification extends throughout the system, and is especially pronounced at top levels of command. This generation of Soviet agricultural officials is terribly afraid of running out of bread. This is perhaps the major reason why agricultural specialization has lagged in the USSR.

A preference structure with heavy emphasis on risk-avoidance has thus remained relatively intact in the transition from peasant or pre-socialist agriculture to socialist agriculture. This was rendered more or less inevitable by the probability that in a planned economy the marginal utility of a given

measure of success is less than the marginal disutility of a similar measure of failure. ^{12/}

Given this situation, the promotion of functional specialization requires that the costs of failure be lowered, or the benefits of success raised, or both. This the Soviets have begun to do. The emphasis on rigid delivery quotas has been reduced, and farm product prices have been raised. As a consequence, collective and state farms are shifting away from the "universal peasant household" model.

The shift is uneven, and the rewards offered in the form of higher product prices, or cheap credit, have been great. It seems probable that this strong preference for risk-avoidance is one of the explanations for the disproportionately high prices for livestock and poultry products, and the slow response of output.

A more direct explanation is provided by the treatment of capital in Soviet value theory and accounting practices. In theory, capital stocks other than land represent "embodied labor" or past labor. The labor invested in the production of capital goods gives them value, and the amount of labor invested determines relative values. If a mistake was made, the wrong investments may have little net productive value to the economy but accounting methods and the economic theory on which they rest prevent any writing off of this capital.

If market preferences shift, consumer tastes change, or new technology renders old capital stocks obsolete, it is difficult in the Soviet system to depreciate capital on any grounds other than physical wear and tear. This

^{12/} For a discussion of the consequences in socialist economies outside the Soviet Union, see Jerzy F. Karcz, "Certain Aspects of New Economic Systems in Bulgaria and Czechoslovakia," Agrarian Policies and Problems in Communist and Non-Communist Countries, W. A. Douglas-Jackson, Editor, Seattle, University of Washington Press (in press).

yields a structure that is consistently "over-capitalized," in terms of capital values based on true rates of marginal productivity.

The consequences for agricultural price policy are significant. As noted above, prices are set by central government authorities to cover costs of production, graduated by geographic zones. The costs considered are average costs rather than marginal costs. In general, the lowest prices for a product will be in areas most favored by climate and soils, or close to markets. The higher prices will be found in areas remote from market, or only marginally suited to production of that product in terms of soil and weather, since costs in those areas are high.

If building costs are included in reckoning costs of production, but land costs excluded, the effect is to overstate costs of production for animal products relative to field crop products. For products for which building costs may be an important part of total costs, e.g. milk, pork, or poultry, the consequence of heavy investments in poorly designed or inefficient buildings is to inflate costs of production, and these costs are subsequently built into product price levels.

The labor theory of value and accounting practices that derive from it insure that once made, a mistaken investment must be paid for. This occurs through incorporation of the costs of wrong investments. This too appears to be a significant part of the explanation for relative animal product prices in the USSR that seem out of line with crop product prices, by Western European or North American standards.

One pervasive characteristic of Soviet agricultural policy has been the impatience with which central planning officials have dealt with farm problems. We have noted the tendency for decision makers in a command economy

to put low values on probabilities of success and high values on probabilities of failure. This tendency seems to be reversed for agriculture, at the very highest levels of command. The first transitory successes of the virgin lands program in the 1950's led to a euphoric belief that the food problem was solved. In the preparation of the Seven-Year Plan for 1959-1965 the Soviets exhibited the same tendency to turn away from agriculture and cut back on investment that had characterized the Second Five Year Plan in India for 1955-59. Soviet agriculture stagnated after 1958 during the last years under Khrushchev, as it had in 1948-52 during the last years under Stalin. ^{13/}

Mismanagement of the dissolution of the MTS after 1958, the erratic interference by Khrushchev in details of farm planning, and subsequent bad weather in 1963 forced the USSR into the ranks of net bread grain importers. The shock effect of this experience led to a renewed attention to agriculture, to the price reforms of 1965, and to the management reforms of 1966 described above. These reforms in agricultural policy and management goals in the 1960's provided an incentive structure that is better suited to the exploitation of modern agricultural technology than ever before in the history of the Soviet Union. But it is still not clear that top policy makers have accepted the primacy of agriculture in development planning.

^{13/} Jerzy Karcz, "Soviet Agriculture: A Balance Sheet," Studies on the Soviet Union, Vol. VI, No. 4, 1967, pp. 134-137; Nancy Nimitz, "Agriculture Under Khrushchev: The Lean Years," Paper No. P-3073, Santa Monica, The Rand Corporation, March 1965.