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This Report is one of a series of papers prepared in an interdisciplinary research project on the political economy of the USSR, presented at a workshop in March 1989, and in most cases updated since then. Almost all of the papers will be published by Cambridge University Press in a volume entitled "Political Control of the Soviet Economy", David R. Cameron and Peter Hauslohner Eds., forthcoming.

The paper uses a telling review of Soviet agrarian policies and practices to identify a potent collection of interests and interest groups that have evolved over the years to support the existing system and oppose current reforms. It then describes elements to look for of a pro-reform coalition that can be built, and possible strategies for its success. The opening section describes the paper in more detail. Sources of political support for agrarian reform, and conclusions, start on page 43.
Food supplies must be improved if perestroika is to succeed. Perhaps, as Vladimir Bashmachnikov, an agricultural economist and consultant to the CPSU Central Committee, claims, Soviet agriculture has been "in a permanent depression punctuated by periodic crises" since collectivization.\(^1\) But General Secretary Gorbachev and his more radical critics agree that making agriculture work better now is a matter of primary importance for the regime's survival. Not only is agriculture responsible for perhaps a third of the Soviet budget deficit, but some economists foretell famine.\(^2\) These dire predictions suggest that the Soviet Union faces a "subsistence crisis" of a kind the capitalist world has not known for almost two centuries.

Even after steeply discounting for the rhetoric of politicians who seek support by arguing that the choice is their program or disaster, the crisis is real enough. Battered by war and collectivization, Soviet agriculture has never produced very generously—output levels of the last pre-World War I year, 1913, were not achieved again until the early 1950s. Labor productivity in agriculture remains about half of what it is in American agriculture, as it has been for the

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past thirty years. Increases in Soviet food supplies have come from improvements in equipment and technology (replacement of peasant tools and inventory with more modern ones), enlargement of sown areas (the Virgin Lands campaign of the early 1950s) and greater capital investment (Leonid Brezhnev's strategy after 1965).

All these avenues of expansion are now blocked. Years of poor agronomy and economic mismanagement threaten to ruin much of Soviet farmland. As General Secretary Gorbachev's proclamation of the "New Agrarian Policy" at the March, 1989, Central Committee plenum indicated, there is now little choice but to try to change the organization of Soviet agriculture, moving it, however haltingly, toward a more market-oriented system. But reform in the countryside goes poorly, as 1989 turns out to be yet another in a seemingly endless sequence of bad years for the Soviet farmer.

This essay examines the anti-reform forces in the Soviet countryside. Opposition to agrarian reform is rooted in the organization of Soviet farming. Soviet agrarian arrangements express the policy preferences and drive for power of the coalition within the Bolshevik party which supported Stalin in his rise to power and then made the Stalinist system operate. Like any other complex organization, the collective and state farm system and the vast bureaucracy which runs it was a political creation reflecting "the interests, strategies, and compromises of those who exercise political power."3 The original goal of the kolkhoz system was political. Economic development,

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increases in agricultural output, mattered less to the regime than ensuring political stability.  

The Stalinist coalition that developed the kolkhoz system no longer exists, destroyed, in large part, by the dictator himself. But the rural institutions established then to dominate the peasantry and keep the workers politically quiescent by providing the cities with cheap food endure. They generate and support political actors who have an enormous stake in the continuation of the existing system. Individuals may admit that the political purpose for which the kolkhoz system was established has long been achieved. Many of them understand how it hinders economic improvement. But they cling to and defend their own positions within those outmoded structures, frustrating reform by tenaciously defending their particular, often individually very reasonable, interests. Not only do members of the ruling elite act this way, but, more crucially for the success of agrarian reform, so do front-line agricultural managers and rank-and-file farm workers. Until the mid-1960s, Soviet farmers had little share in the benefits, such as job security and guaranteed earnings, that socialism's welfare measures brought to the urban population.  

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4 This political purpose is clearly shown by Stalin's revision of the draft Politburo resolution on collectivization which was eventually issued on January 5, 1930. The eliminated paragraph provided that “the degree of success of work in the area of collectivization will be evaluated by the party Central Committee not only on the basis of the growth in the number of families [khoziaistvo] united in the collectives, but first of all based on by how much one or another district will be able to actually expand sown areas, increase yields and improve livestock-raise on the basis of collective organization of the means of production and labor.” N.I. Nemakov, Kommunisticheskaya partiia - organizator massovogo kolkhoznogo dvizheniia, 1929-1932 gg. (Moscow: Izdatel'stvo Moskovskogo universiteta, 1966), p. 100.  

they do share some of them, however, the peasants themselves are a principal
obstacle to successful reform. The problem of agrarian reform is to create a
political coalition among both the ruling elite and the rural population to support
and implement organizational change.

After describing some salient features of Soviet agricultural organization,
the political forces on the farms which support the existing system are sketched.
Then the current reform proposals, particularly land-leasing and the formation of
supply and marketing cooperatives, are discussed. The essay concludes by
considering what kind of a pro-reform coalition can be built in the Soviet Union
and possible strategies for its success.

Kolkhoz Organization

The institutions which rule the Soviet countryside and the procedures for
administering Soviet agriculture which they embody developed incrementally
during and after the mass collectivization drive in the early 1930s. Codified in
the Model Kolkhoz Charter adopted in 1935, the collective farm system
weakened during the war, only to be rebuilt in the late 1940s. In many
fundamental respects, it has remained unchanged since then, despite
continuous tinkering intended to solve particular problems.

As a device for agricultural and economic development the kolkhoz
system was less than optimal, but it provided sufficient control of the peasantry
that much of the little they produced, and many peasants, could be pumped out
of the countryside and sent to the cities to help the country's industrialization.

Walter D. Connor, Socialism’s Dilemmas: State and Society in the Soviet Bloc
Soviet collective farms did not simply suffer from a tendency on the part of city-based authorities to exploit them as sources of labor and capital for urban industrial development. The regime's declared purpose was to make farm work into a peculiar kind of industrial labor in which the factories happened to lack roofs. Only when the peasants had become completely proletarianized could they be admitted as truly equal citizens.

Stalin argued that compared to traditional peasant farms the kolkhozy provided enormous economies of scale, and ordered the creation of extraordinarily large farms to gain those claimed advantages. By 1937, the average kolkhoz in the USSR included some 76 peasant households and had a total of 1,534 hectares of agricultural land. By 1965, the mean size of a collective farm was 420 households and 6,100 hectares of agricultural land.6 In 1987, the average kolkhoz had 6,300 hectares of agricultural land, 3,500 hectares of sowings and 45 tractors with which to work the land. State farms, always larger, now have an average of 15,600 hectares of agricultural land.7 By comparison, in 1985 the average American farm was just less than 450 acres, or 180 hectares, in size.

Kolkhoz organization presumed that labor power was abundant and cheap while capital goods were extremely scarce and dear. This assumption fit the Soviet Union in the 1920s, a country still largely rural with large areas plagued by persistent rural underemployment. The peasants' slaughter of their draft animals when faced with forcible collectivization and the ruin of many production facilities which followed as incompetent urban managers tried to organize the new farms made even the simplest implements and equipment

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scarce. This same capital scarcity provided the economic rationale for the establishment of Machine-Tractor Stations (MTS) which concentrated equipment to increase its utilization. The MTS quickly became devices for extracting produce from the farms whose economic justification remained only as an ideological fig-leaf. A.M. Markevich, the head of the first tractor column (forerunner of the MTS), was condemned for his "technological deviation" because he insisted that the "participation of the peasants be absolutely voluntary" and so refused to use his equipment to enforce collectivization and party-state control over the new kolkhozy. (He was rehabilitated only after the Brezhnev regime came to power.10)

Even after the MTS were abolished in the late 1950s11, the underlying assumptions of farm work organization remained the scarcity of machinery and the abundance of labor. Rural population has declined throughout the Slavic areas of the USSR, catastrophically so in some areas of European Russia. By 1982, in Tula oblast' there were six equipment operators for every ten tractors in the Kireevskii raion and urban workers were being sent out to milk the cows on

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the Shchekino raion's kolkhozy. A million hectares of agricultural land has
gone out of cultivation in Pskov oblast' since World War II for lack of people to
work them. Remaining farmers are getting older with few replacements. But
the system continues to function as though labor were still abundant. The labor
force is artificially (and very inefficiently) expanded by sending students, urban
workers and professionals, and military units to help with the farm work.

From the beginning, the kolkhoz was much more than just a production
unit. Residence permits and internal passports were issued to, and held by, the
farm authorities in order to prevent the peasants from leaving without
permission. Rural soviets rapidly declined in influence in relation to the farm
authorities, since the kolkhoz managing board (in reality, its chairman)
controlled the budget for schools, clubs, roads and similar facilities while rural
soviets had virtually no funds to carry out their work. Farms dictate where their
members can live, giving them building lots and household plots on which to
grow their own food and keep a little livestock.

Even today, although farmers hold their own documents and can leave,
the chairman controls the lives of his farmers: he chooses whether or not to
provide them with transportation to the city when they get sick, he can evict them
at will, and he and his subordinate bookkeepers and brigadiers can assign the
farmer good-paying or poorly-paid jobs or simply cheat him of part of his pay.
However, farmers can now fight back by threatening to leave if they don't like
the management. Poor farms may have trouble keeping enough labor to do the

12 A. Nikitin, “Maloliud’e,” Literaturnaia gazeta, No. 43, October 27, 1982, p. 11.
13 V. Vorob'ev and V. Somov, “Pytalovskii proryv: Arenda vozvrashchaet liudei
sela k polnokrovnoi zhizni, vedet k prodovol'stvennomu dostatku,” Pravda,
September 5, 1988, p. 2.
14 A. Chernichenko, “Vertikal',” Komsomol'skaia pravda, September 19, 1982,
p. 2, reports a striking case where a komsomol raikom instructor took over a
sovkhoz in Kalinin oblast' with 250 able-bodied workers, of whom only 35 were
under thirty.
work. The system of residence permits (propiska) makes it difficult for farmers to go to major cities unless they either stay in the urban area after school or the army or marry someone with a city propiska, but moving from one farm to another requires only a decision of the kolkhoz general meeting. In some cases farmers are able to extort payment from the farm for work they haven't done by threatening to move to another farm.\textsuperscript{15} However, most farm workers are not likely to be very mobile, since many are manual workers or pensioners.

Under Stalin, the planning and procurement system gave kolkhozy little economic incentive to produce or market crops or livestock products. From 1933 on, state plans for sown area and herd sizes were determined according to farm size.\textsuperscript{16} Each hectare of agricultural land was expected to produce a certain amount of each crop and feed for so many animals. The plan targets were centrally set, then mechanically divided up among all the units at each lower level in the territorial-administrative hierarchy. Specialization in a particular line of agriculture or animal husbandry for which a farm might be particularly well suited by natural endowment, location, or characteristics of its labor force was impossible. Rather than rotating crops from field to field to maintain fertility, the same land often had to be planted in the same crops year after year to satisfy the sowing plans. Much of the harvest was turned over to the MTS as payment for their services. Most of what remained went to the state as required deliveries for which the farm received a purely symbolic payment. In practice, procurement agencies often took everything, whether or not the


farm's plan had formally been fulfilled.\textsuperscript{17} Per-hectare planning has been denounced and supposedly abolished by party and state decrees at least five times, in 1940, 1955, 1964, 1980, and 1986. In practice, however, farms remain bound by simplistic assignments passed down from above.\textsuperscript{18}

**Individual Incentives**

Individual farmers had little economic incentive to work for the farm. By the mid-1930s, every task on every farm was supposedly evaluated and normed. For fulfillment within the expected time at the standard level of quality a farmer would receive a credit of a certain number of labor-days (\textit{trudodni}). Running totals of farmers' labor-day earnings were kept by the kolkhoz administration. At the end of the year, once all other financial and delivery obligations had been met by the farm, whatever remained in cash and kind was shared out among all the kolkhoz members in proportion to each individual's total labor-day earnings. During the 1930s, 1940s, and 1950s, most farms had nothing left to give their farmers at the annual settlement. Many kolkhozy ended up in arrears to the state because they had failed to fulfill their delivery plans or had borrowed seed and working capital during the year. By the late 1930s, farms were supposed to pay ten percent of the estimated value of each farmer's labor-day earnings as an advance. Most farms never paid more than the advance. The advances were almost entirely paid in kind. As recently as 1953, more than 100 of the 1,404 kolkhozy in Moscow oblast', one of the most


commercialized and prosperous farming areas of the country, paid no cash for their labor-days.\textsuperscript{19}

It would be difficult to imagine a worse incentive system. Labor-days were worth very little, and their exact value was unknown. The labor-day's value depended on the work of everyone on the farm and on arbitrary decisions from outside the farm about production plans and procurement prices, so the individual farmer could not affect his earnings much by adjusting the quantity or quality of his work. The press constantly complained about payment of inflated numbers of labor-days to farmers. From the individual's point of view, earning more trudodni (preferably for the same amount of work) must have seemed the only way to increase his earnings, even though increasing the total number of labor-days earned on a farm cut the value of each one even further.

Most kolkhozniki worked for the farm only in order to retain the right to a private plot, which provided them with their own food and (when they were lucky) something to sell in the cities. Effectively, they were reduced to a natural economy based on their gardens.\textsuperscript{20} The May, 1939, AUCP(b) Central Committee plenum implicitly recognized that economic incentives for work on the kolkhozy had failed by instituting a requirement that only farmers who had earned a certain minimum number of labor-days on the farm could keep their plots.\textsuperscript{21} A survey of slightly more than one thousand kolkhozy done in 1969


\textsuperscript{21} KPSS v rezoliutsiiakh i resheniiakh s"ezdov, konferentsii i plenumov TsK (Moscow: Izdatel'stvo politicheskoi literatury, 1971), Vol. 5, p. 404.
found that 92% of farms surveyed then required their members to work some minimum number of days. Such rules are still reported in a matter-of-fact way, suggesting they remain common.

Since the farm paid them little or nothing, most farmers felt justified in stealing what they could from their kolkhoz. Peasant “midnight requisitions” (trudonochi) were an accepted part of kolkhoz life. An enormous apparatus of guards and a complex system of monitoring and inventorying developed to safeguard the farms’ property from their own members. Since the farms were communities and people knew each other, the farm management had many opportunities for petty corruption and harassment of farmers. Occasional toleration of known criminals provided another lever for destroying village solidarity against the officials as well as a way to ensure peasant compliance with management wishes.

Khrushchev began experimenting with changes in the labor-day wage system to give individual farmers more economic incentive in the late 1950s. In 1966, the Brezhnev-Kosygin leadership mandated guaranteed wages for all kolkhoz members according to piece-rate scales adopted from the state farms. Wages were now to have priority over new investment in apportioning the farms’ gross income. State-guaranteed pensions were to be provided by the

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kolkhozy for all their retired members. These changes effectively eliminated the major organizational difference between the collective and state farms.\textsuperscript{26}

In theory, the labor-day system had emphasized the end result, a good crop, since a good harvest would make each individual labor-day more valuable. Under the guaranteed wage system, farmers had a monetary incentive to maximize the number of operations they performed. Complex bonus systems were supposed to be used to reward high production. But because they were tied to badly-drawn, overoptimistic plan targets they were rarely effective incentives. The guaranteed wages system as it developed during the 1960s had the effect of rewarding quick fulfillment of as many intermediary operations as possible.\textsuperscript{27}

Many unprofitable collective farms were converted into state farms during the late 1950s and early 1960s. Since state farms paid guaranteed wages, their wages bills became a direct charge on the state budget. Remaining unprofitable kolkhozy, or those which did not make enough to cover the wage increase brought about by guaranteed wages, were allowed to cover the new costs with state bank credits. Although intended as a transitional device, the bank loans quickly became standard practice. Since plans continued to be capriciously set, and funds were freely available from the bank, farms had little incentive to increase final output or efficiency to cover their wages bills. Most of

\textsuperscript{26} Despite the legal, statistical, and ideological differences (kolkhozy are cooperatives while state farms are state enterprises; kolkhoz farmers are classified as peasants while sovkhoz farmers are workers; kolkhozy are a "lower" form of property, sovkhozy "higher," etc.), there are few practical differences between the two organizations. Even now, when property rights and legal responsibilities have become a serious issue once again in the Soviet system, kolkhozy and sovkhozy are acting identically in leasing out the land and inventory.

the Central Committee plenary sessions on agriculture since the 1960s have included writing off accumulated farm debt as one item in their resolutions.

Farm Management

From collectivization at least until the 1970s, the farmers have had little economic incentive to produce, so a vast bureaucratic system grew up to coerce them into working. It issues orders to the state farms and "recommendations," which are in fact binding commands, to the collective farms. (In 1987, some 13,000 separate "instructions, limitations, and prohibitions" governed the farm manager's actions.) On command from above, the party-state apparatus mobilizes the farmers in a "campaign" for sowing, feed-preparation, harvesting, or whatever task needs to be done. The principal levers for mobilization are the incessant demand for reports of fulfillment issued by each level of the administrative pyramid to its subordinates (and the promise of punishment for not getting the job done) and the sending of emissaries from each administrative level to its subordinates in order to ensure reported results are actually achieved. Until the 1960s, such "plenipotentiary" representatives of the party district committee effectively replaced most farm managers at the most critical times of the year. They are still used today, although somewhat less routinely—the telephone has largely replaced on-the-spot representatives as a way to ensure obedience. This campaign system, developed during collectivization, remains the basic device both for accomplishing routine agricultural tasks and for introducing organizational innovations on Soviet farms.

Piece-rate wages, the organization of farmers into large brigades, theft, and the need for centrally directed campaigns to get the work done, combined to create an enormous pool of nonproductive workers occupied as quality controllers (the real job of Soviet farms' agronomists), brigade leaders and timekeepers, bookkeepers, guards and controllers, and administrators within the farms. The flood of paper from higher levels soon demanded, and still requires, most of the administrators' time and effort, keeping them from effectively supervising farm work and multiplying the number of management jobs.29

Since management posts have generally been easier and better paid than actually working on the land, they have attracted the best-qualified or best-connected farmers. They also have been occupied disproportionately by able-bodied rural men. Even before the demographic disaster of World War II most farm brigades' rank-and-file were overwhelmingly women, teenagers, and the old. By 1937, the “average” kolkhoz field brigade in the Russian Republic included twenty-two men, twenty-eight women, and eight “youth” (podrostki).30 Equipment operators (“mechanizers”), then separately organized in the MTSs, were and are overwhelmingly male, so the overall sex ratio on the republic's farms was slightly better. But there were few enough mechanizers in the whole rural population that the imbalance certainly remained. Moreover, becoming a machine operator was often a way-station on the journey from countryside to city.

30 Kollehozy vo vtoroi stalinskoi piatiletki: Statisticheskii sbornik (Moscow: Gosplanizdat: 1939), p. 49.
His situation makes the kolkhoz chairman or sovkhoz director as dependent on his superiors as individual farmers are on him. Although the kolkhoz chairman is, in principle, elected by the kolkhoz membership, he is actually nominated by the district authorities just as a state farm director is. Even when, in recent times, the election has been contested, all the candidates have been vetted by the raion party committee. Nomenklatura approval gives the district authorities decisive power over the managers. Stories of a district first secretary’s “battlefield” firing of a farm chairman in the middle of harvest season are not uncommon. Front-line managers such as brigadiers and heads of livestock sections may be subject to district party committee approval as well.

Most farm chairmen apparently do not hold their jobs very long. Descriptions of the eighteen-hour days put in by good farm managers suggest that the attrition and burnout rate may be high. For many aspiring politicians a period of service as a farm deputy chairman or chairman is a matter of resume-building for future use. As Jerry F. Hough noted almost twenty years ago, the number of rungs on the agricultural career ladder compared to the one faced by an industrial manager makes it important for an ambitious young manager not to spend too long at the farm level. In 1988, one-quarter of all

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kolkhoz chairmen had been in their posts for less than three years, and a year later General Secretary Gorbachev said that “in three years, approximately two-thirds of the managers of enterprises, construction projects, kolkhozy and sovkhozy, and local soviet and party organs have been replaced.” As a result, most farm managers have a short time horizon for success.

A farm's success depends on reported plan fulfillment. All the devices for getting a “good” plan familiar from studies of management of Soviet industry are used in agriculture as well. Since inputs such as fertilizer, equipment, and building materials are allocated by specialized agencies working to fulfill their own plans over which farms have little control, informal bargains pay a large role in getting them on time and in the needed amounts. Even the state procurement agencies may capriciously refuse to accept produce if their monthly plan has been fulfilled, or they may unilaterally declare its quality (and so the price to be paid for it) to be less than the farm claims. Being late with needed supplies or holding a herd of cattle at the slaughterhouse or loaded trucks at the grain elevator may adversely affect the whole year's results. So currying influence with the suppliers and procurement agencies is a necessary part of any manager's job.

These coordination problems have tended to strengthen the position of the rural district and oblast' party committee first secretaries as “prefects” able to intervene on behalf of their farms. General Secretary Gorbachev recently described the territorial party apparatus' coordinating role:

For a long period the party was built into the administrative-command system for the rule of society and lived according to the laws of that system. And it was not merely built into it, but, in essence, towered over everything, monitored all processes of state, economic and ideological life, supplanting and bypassing everyone else, issuing indisputable directives and commands to state and economic organs and social organizations.38

In rural areas, the role of party secretaries in obtaining and distributing resources, protecting favored clients and punishing those who dared to violate their wishes grew during the Khrushchev and Brezhnev years as the regional secretaries were increasingly able to evade central control and twist central directives to their own wishes.

**Brezhnev’s policy**

By the mid-1960s, the kolkhoz system had changed in several important ways. The most coercive and economically irrational aspects of Stalinist agriculture had been abolished, as purchase prices increased, wages were guaranteed, and machinery was integrated into the farms. The Brezhnev regime sought to build on this base to change peasant attitudes toward the regime and give them serious economic incentives to increase production. To a large extent, the Brezhnev-era policy succeeded in reconciling the peasants to the existing system. But guaranteed wages, the (Khrushchev-era) transformation of kolkhozy into sovkhozy, and immense capital investments aimed at least partly at paying off Brezhnev’s supporters in heavy-industrial

ministries and the regional party apparatus all ensured that these changes would take a large and increasing share of the state's resources. As those costs mounted, they distorted the whole economy, significantly contributing to the fiscal crisis which now afflicts the USSR and making agrarian reform imperative.

Brezhnev sought to achieve his goals mainly by providing more money for agriculture. Purchase prices for deliveries to the state went up repeatedly between 1965 and 1982. At Central Committee plenary sessions in 1965, 1966, 1968, 1970, 1978, and 1982, Brezhnev argued for increasing overall agricultural investment. By the 1980s, more than 30% of all state capital investment was going to agriculture and related branches of the economy. Brezhnev earmarked the increased investment for a number of priority purposes. He sought to stabilize and increase yields by land reclamation and irrigation. A huge program for this purpose was announced in May, 1966, followed by a special Central Committee resolution on land reclamation in the Russian Republic's Non-Black Earth Zone (NBEZ) in 1974. A program aimed at a large increase in meat and milk output by constructing large, highly-mechanized "complexes" for livestock, based on work in concentrating

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production done in the Belgorod and Penza oblasti in the late 1960s, became a national drive with the General Secretary’s blessing in 1976.\textsuperscript{41}

These measures both reacted to Khrushchev’s policies and attempted to buy political support from powerful actors in the Soviet system. Khrushchev had concentrated investment in the Virgin Lands in order to extend sown areas and reap quick gains in yields. As a result, the traditional Russian and Ukrainian agricultural heartland of the country, devastated by World War II, got little state aid during the 1950s or early 1960s. By the mid-1960s, however, the marginal lands in the new areas were suffering from drought, erosion, and weed infestations, raising questions about their long-term viability. (The Party Presidium reportedly discussed abandoning the Virgin Lands entirely at the time of Khrushchev’s ouster in 1964.) The NBEZ, with its poor soils but adequate rainfall, promised steady yields and so offered a way to avoid another forced foreign grain purchase like the emergency imports in 1963. Since much of it was traditional dairy-farming country as well and it was located near the country’s major population centers, investment in the NBEZ also promised increases in meat and dairy products without high transportation costs and associated high rates of spoilage and loss. Irrigation and reclamation work also expanded in the country’s grain-producing areas in southern Russia such as Volgograd and Rostov oblasti and the Ukraine. Here, the land was better but rainfall uncertain. Taking water from the Volga, Don, and other great rivers that traversed the region seemed to offer a technologically relatively simple, if expensive, way to stabilize and increase yields there as well. More

\textsuperscript{41} “O dal’neishem razvitii spetsializatsii i kontsentratsii sel’skokhoziaistvennogo proizvodstva na baze mezhhkhoziaistvennoi kooperatsii i agropromyshlennoi integratsii,” Leninskaia agrarnaia politika KPSS, Moscow: Izdatel’stvo politicheskoi literatury, 1978, pp. 481-494.
predictable yields would permit the country to keep larger herds of meat and dairy cattle.

Construction of large livestock-raising facilities ("complexes") had ideological as well as economic and political purposes. They would do for the small, isolated livestock sections what collectivization had done for small peasant farms, combining them into large, modern, highly-mechanized units gaining huge economies of scale. In the process, the stockraisers would exchange their grimy overalls for clean workers' smocks. Instead of working split shifts to do morning and evening milking, milkmaids would work industrial-style seven-hour days. The last major vestige of peasant farming would be assimilated to modern industry. Economically, the complexes would permit a great increase in meat and dairy products. Because production costs per unit in the new complexes would be so much lower, no price increases would be needed and supplies would increase. The enlarged output would, in turn, finally permit Khrushchev's dream of catching up with US levels of meat and dairy product consumption to be attained. The "social contract" with urban dwellers would be reinforced by their higher living standard.

These Brezhnev policies also helped in his struggle to consolidate power after Khrushchev's ouster. Against Prime Minister Kosygin's emphasis on light industrial production as a way to provide better incentives for the urban work force Brezhnev stressed food as the basic consumer good. The need to construct enormous amounts of new machinery for the farms, the reclamation agencies, and the complexes, as well as the demands of the construction itself, would benefit the producers of heavy machinery and equipment, the "group B" ministries whose interests remained dominant even as arguments about

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economic reform proceeded. Brezhnev's background as a defense and heavy-
industry specialist probably also inclined him to favor machine-building:
factories that can build combines can easily be converted to produce tanks.

Unlike Khrushchev's abortive experiment with the territorial-production
administrations, Kosygin's emphasis on light industry and a quasi-market
economy, and Voronov's demand for reorganization of agricultural to allow
farmers to more effectively use the resources they already had, Brezhnev's
policies did not threaten the interests of the oblast' party first secretaries, many
of whom held or would be promoted to hold seats on the Central Committee.
With defense, heavy industry, and much of the regional party apparatus among
his supporters, Brezhnev was able to consolidate his own power and eliminate
his rivals during the 1970s.

Results of the Brezhnev Program

The most obvious result of Brezhnev's policy was an increase in wages
for farmers. Between 1970 and 1985 the average monthly kolkhoz wage grew
from about sixty to seventy percent of the average worker's earnings. An
average sovkhoz worker's earnings increased from just over eighty percent to
ninety-seven percent of the average for all workers (see table 1). However,
farmers work longer than industrial workers to earn these average amounts.
One source reported that, in Smolensk oblast' in 1966, an able-bodied male
kolkhoznik worked 2,600 hours a year in the public sector, plus an additional
hour a day on his private plot. An able-bodied woman worked 2,380 hours in
the public sector, but put in almost three hours daily on the plot. By contrast, an average "optimal" working year in industry was said to be 2,000 hours.\textsuperscript{43}

\begin{table}[h]
\centering
\caption{See page 51.}
\end{table}

As might be expected from the increased wage bill, the share of wages to profit in kolkhozes' gross income increased, rising from about two-thirds in 1965 to 95\% in 1981 (see table 2).\textsuperscript{44} State farms, always higher-cost producers, were spending more than 110\% of their gross income on wages at least in the drought year of 1975 and 1980.\textsuperscript{45} State farm data are unavailable for other years, but it seems likely their wage costs were not much less for any other year in the late 1970s. Some 56\% of all sovkhozy ran a loss in 1980.

\begin{table}[h]
\centering
\caption{See pages 52 & 53.}
\end{table}

Unit cost of production of agricultural goods certainly rose much more than could be accounted for by the wages increase alone.

The solution was increased state subsidies. They offered the easiest way to make the rural profit and loss accounts seem to balance. Raising the subsidies was far less difficult than attacking the complex problems of supply and pricing which would otherwise have demanded solution. Increased subsidies also seemed to achieve the regime's declared goal of insuring that

\begin{itemize}
\item \textsuperscript{44} Gross income (valovoi dokhod) is calculated in the Marxian manner, as the sum of wages and other payments to the labor force and surplus (profit) which remains after fixed capital costs are met.
\item \textsuperscript{45} Calculated from the sources cited for Table 2.
\end{itemize}
the price of bread and baked goods (and, by extension, other basic foodstuffs) remained low, “even though outlays on their production are rising.”

Direct state payments for all plant-growing and livestock products more than doubled between 1970 and 1987. Payments for livestock products tripled.

By the 1980s, the official retail sale price for beef was only 40% of what the state paid the farm for it. As a result, almost any farm could make a profit on cattle-raising, and there was no incentive to produce more efficiently. By 1985, after state purchase prices were increased greatly in 1981 and 1982, only 23% of sovkhozy were still unprofitable. This improvement partly resulted from the introduction, on January 1, 1983, of special additional payments for unprofitable farms designed to make them profitable. It was estimated that this additional subsidy would cost some sixteen billion rubles annually.

More capital investment (in addition to procurement payments) was supposed to cure the problem of low yields. Overall agricultural investment (by the state and kolkhozy taken together) increased by about 75% between 1970 and 1987. The greatest increase was in “non-productive” construction of such things as houses and village buildings, which almost tripled, from 4.5 billion rubles in 1970-75 to 12.8 billion in 1987. Investment in melioration, equipment, livestock facilities and other production items increased overall by about fifty percent to 34 billion rubles in 1987. The largest increment of “productive”

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49 Narkhoz ’86, p. 265.
investment went to equipment. The share of equipment in all productive investment rose from twenty-six percent at the beginning of the 1970s to almost thirty-seven percent in 1987. Between 1970 and 1985, funds devoted to equipment purchases almost doubled, increasing from 5.9 billion rubles to 11.9 billion.\textsuperscript{51}

Despite all the money, output stagnated in the later Brezhnev years. Overall harvest reports are highly suspect because of the large admixture of foreign matter and the low quality of much that is produced, and estimates of spoilage and waste range up to 25\% of the grain crop. So even in areas where yields grew, little more might have been available for sale, especially since the procurement system is not geared to handle more than an (average harvest) planned amount, and routinely turns away “excess” production. But aside from such problems, it is clear that output has not generally been increasing as it might have been expected to. At the XXVII Party Congress in 1986, USSR State Agroindustrial Committee (Gosagroprom) Chairman V.S. Murakhovskii, the state official then in charge of the whole agricultural sector, complained that despite massive investments, “many oblasti of Russia’s NBEZ, western Siberia, the Ukraine and Kazakhstan reduced their production of plant-growing products during the last five-year plan and failed to achieve any significant increase in livestock output.”\textsuperscript{52} In Saratov oblast’, a southern grain-growing region with sometimes uncertain rainfall but good soil, grain yields have remained stuck at ten centners per hectare for the past thirty years.\textsuperscript{53} (A reasonable harvest would be perhaps thirty centners/hectare.) In Vladimir oblast’, an NBEZ province, grain yields averaged about fifteen centners per hectare “until recently.” In the

\textsuperscript{51} Calculated from Sel’skoe khoziaistvo SSSR: Statisticheskii sbornik, Moscow: “Finansy i statistiki,” 1988, pp. 385-387.
\textsuperscript{52} Pravda, March 3, 1986, p. 3.
twelfth five-year plan, the oblast' gathered 94 centners per hectare of potatoes. With normal seeding rates of 40-45 centners per hectare, the oblast' got just two potatoes for each one planted. Until 1983, 140 of the oblast's 220 farms were unprofitable. By 1985, after the additional subsidies for low-profit farms had been implemented, only 21 farms were still unprofitable.54

Even the expensive improved lands often didn't produce much. According to the agricultural economist V.A. Tikhonov,

In the eleventh five-year plan a fifth of the irrigated land of Uzbekistan, Turkmenia, Kazakhstan, Georgia and Armenia yielded less than fifteen centners per hectare. Forty-five percent of Russia's irrigated land planted to corn, thirty-one percent of it in the Ukraine, Georgia and Armenia, and forty-one percent of it in Uzbekistan yielded less than thirty centners of corn per hectare. One-third of all irrigated lands [planted in it] yielded less than forty centners per hectare of hay.

Such yields are low for any land planted to a commercial crop, and they are, as Tikhonov scathingly comments, evidence that many billions of rubles have been invested absolutely uselessly in such “improved” land.55

All of Brezhnev's money bought relatively little increase in agricultural production. Where did it all go? A number of Soviet commentators have suggested that most of the money devoted to agricultural investment during the Brezhnev era wound up not on the farms, but with their suppliers and service agencies.56 The unit cost of agricultural equipment to the farms rose steeply.

56 For instance, V. Tikhonov, “Sel'skoe khoziaistvo i mezhotraslevye sviazii,” Ekonomika sel'skogo khoziaistva, no. 2 (February, 1978), pp. 18-27, V.
"Tie-in" sales of unneeded equipment with necessary items or spare parts are certainly common. Independent agencies, such as the agricultural equipment supplier "Sel'khoztekhnika," have been primarily concerned to fulfill their own plans for sales and income. When the Abasha raion sel'khoztekhnika was made part of an experimental district agroindustrial association (RAPO) in the mid-1970s to stop such "departmentalism," it fell to last place in the national socialist competition of agricultural machinery outlets because its volume of sales and repair work declined so steeply against its plan.\textsuperscript{57} Because the construction and equipment agencies control supplies and materials, farms also commonly pay their "partners" for work which they will then do themselves in order to get spare parts or building materials which they can't get elsewhere.\textsuperscript{58}

Much of the new investment was uselessly tied up for very long periods. The land reclamation agencies' work backlog reached enormous proportions. Several major irrigation and drainage systems begun in the late 1960s had not yet been completed in 1988.\textsuperscript{59} Poor work meant that more money was simply wasted. By the mid-1980s, investment in new land reclamation in Volgograd oblast' was doing little more than balancing losses of previously "improved" land from rising ground water and secondary salination.\textsuperscript{60} Some funds were also siphoned off by corruption, to buy political protection for individual leaders

\textsuperscript{58} For instance, Anatolii Kongro, "Prodovol'stvennuiu programmu - v deistvie! khozaiain pered vyborom," \textit{Literaturnaia gazeta}, No. 39 (September 29, 1982), p. 11.
\textsuperscript{60} Viktor Skachkov, "Verkhovye vetry: Razmyshleniia byvshego direktora sovkhoza," \textit{Don}, No. 5 (May, 1988), pp. 140-152.
and a good life for the pampered children of the elite, including Brezhnev's
daughter Galina Churbanova.

All of these problems are familiar to students of Soviet industry. They
are, in Janos Kornai's terms, the results of a soft budget constraint, the lack of
any effective control over investment. Since enterprises can get as much state
investment as they wish (or can finagle) at no cost, they have an unlimited
appetite for it. The end results are chronic deficit, shortages, and, now, inflation
as money is devalued and allocation orders become the only way to get goods.
From being an exploited source of labor and supplies for the rest of the
economy, Soviet agriculture has become just another branch of industry,
working inefficiently and incessantly demanding greater state subsidies.

The transformation of Soviet agriculture presided over by Leonid
Brezhnev had an additional undesirable consequence. In 1963, the regime
had sanctioned the import of foreign grain to prevent hunger in the cities. By the
1970s, under the incentive measures adopted after Khrushchev's ouster in
1964, prodded by higher prices and better wages, agricultural production had
reached a level that ensured against a repetition of imports for that reason. But
drought in 1972 combined with Brezhnev's desire to improve diets and the
usual wasteful practices to make necessary grain imports for cattle feed to
maintain the larger herds needed by Brezhnev's livestock program. Intended
as a stopgap measure until the reclamation programs began to provide higher
guaranteed yields, such imports have become standard procedure. Not only
has Soviet agriculture now become a sink for capital, it also depends on foreign
suppliers for the feed it needs to keep producing meat for its population.
Political coalition created by old system

Although much of the Brezhnev-era investment may have been wasted in an economic sense, its distribution makes sense politically. Brezhnev's agricultural policy helped to create a political coalition to support him as General Secretary. Unfortunately for the agrarian reformers, that coalition continues to be nurtured by the institutional framework of Soviet agriculture.

Flows of money and influence in the Soviet Union cannot be traced in the way good investigative reporters can sometimes do the job in other systems. However, there is no shortage of anecdotal evidence illuminating the anti-reform coalition in agriculture. This evidence requires making the assumption that a person's economic and social role largely determines his political viewpoint. While true in the aggregate, this may not be so for any particular individual, so predictions based on this kind of analysis can describe expected group behavior, not individual actions.

The coalition which benefits from the existing system unites at least three elements. One, among the party and state elite, directs policy for individual and factional benefit in the eternal struggles for power and influence among the leadership. Such elite conflict is, however, a subject for a paper in itself, and will not be discussed in detail here. A second element of the anti-reform coalition is the mid-level party, state, and trade-union officials, who benefit directly in privilege and position from the existing system. These are the

61 On Soviet agricultural politics, see especially the works by Sidney Ploss and Werner Hahn, already cited, as well as George Breslauer's more general treatment, Khrushchev and Brezhnev as Leaders: Building Authority in Soviet Politics (London: George Allen & Unwin, 1982). I examine elite conflicts over agricultural policy since perestroika began in my 'To Be Master of the Land': The Politics of Reform in the Soviet Countryside, 1935-1989, manuscript in progress.
universally-denounced "bureaucrats." There are at least 400,000 of them in the
full-time agricultural administrative apparatus. Many of these people do seem
consciously and collectively to defend their privileges. The most important
actors in this part of the anti-reform coalition are the oblast'- and raion-level
party secretaries, the prefects whose position depends largely on their ability to
intervene in economic matters on behalf of their subordinates and who find
influencing the distribution of state resources for agriculture a powerful means
of favoring some and hurting others to shore up their own control in their
territory.

The third and most important grouping which blocks reform is composed
of many of the people who have lived their lives on the farms, as workers,
specialists, managers, and pensioners. Their power is even greater than that
of the apparatus, because they can block the implementation of even the best-
designed reforms by refusing to change their everyday behavior.

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Table 3 See pages 54 & 55.

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As table 3 indicates, even now about two-thirds of all kolkhoz and
sovkhоз peasants, some sixteen million people, are not counted in Soviet
statistics as having any particular job skill. They are manual laborers. Their

62 Narkhoz '86, p. 270.
63 N. Savitskaia and V. Cherkizov, "Ne povtorit' sud'bu Khudenko," Pravda,
September 5, 1989, p. 2; Andrei Nuikin, "Idealy ili interesy? Po stranitsam gazet
i zhurnalov," Novyi mir, No. 1 (January 1988), 190-211, and No. 2 (February
1988), 205-228.
64 For a more detailed stratification analysis of Soviet farms which retains much
of its validity, see Karl-Eugen Wadekin, "Soviet Rural Society: A descriptive
Much valuable data on specialists is given in Cynthia S. Kaplan, The Party and
Agricultural Crisis Management in the USSR, Ithaca, NY: Cornell University
annual earnings are less than the kolkhoz average. Their bonuses come from payments to their brigade or the farm for good work. It is likely that more of their income than that of skilled workers and specialists comes from their private plots. Unlike the specialists or skilled workers, these people work only at peak times, when extra labor is needed. They are the “aunts with hoes” who weed the sugar beet fields by hand\textsuperscript{65}, the people who move the grain with shovels when the loaders on the threshing floor break down (as they often do). The manual workers may be somewhat older than the specialists and skilled workers. They are predominantly female and less educated than other groups.\textsuperscript{66} They have nowhere to go, and nothing to do except their occasional farm work.

The manual laborers are, perhaps, the people who have most to fear from organizational change on the farms. Although they don’t earn much, they are assured of a place to live and a share in the benefits, such as access to a cafeteria and transportation to town, as well as help in cultivating their private plots, provided to all the members by the farm. If they were to be dropped from the field-work brigades their earnings would decline as the equipment operators and specialists economized on wage bills. As a result, the manual workers are often the farmers who most oppose payment by results with the promise of greater wage differentiation.

Allied with the manual workers are the kolkhoz pensioners. There were twelve million pensioners on collective farms in 1970, when the active labor force was almost seventeen million. By 1987, there were about ten million


\textsuperscript{66} See, for instance, Lu.V. Arutiunian’s extensive surveys of the rural populations of the Tatar ASSR, Krasnodar krai, and Kalinin oblast’ done in 1966-67, reported in his Sotsial’naiia struktura sel’skogo naseleniia SSSR, Moscow: Izdatel’stvo “Mysl’,” 1971.
pensioners, supported by an active labor force of more than twelve million. In 1970, the average pension paid fourteen rubles a month. By 1987, the average payment was just over fifty-three rubles a month. The Soviet poverty line (subsistence minimum) is about seventy-five rubles per month. The pensioners make the difference by working their private plots with kolkhoz assistance. Having worked most of their lives before the kolkhozy began to pay decent wages or offer pensions, they legitimately fear losing what they have gained in the past twenty years if the kolkhoz structure is done away with or placed in a more competitive environment.

The manual workers and kolkhoz pensioners are also easily manipulated by the farm management, the so-called “kolkhoz aktiv” of management, party, Komsomol, and trade-union officials. By threatening to take benefits away from the manual workers and pensioners, the aktiv can control their votes at farm general meetings, putting a legal roadblock in the way of any proposal to change farm organization.

There are about two million skilled livestock workers on kolkhozy and sovkhozy. Mostly women, they include milkmaids, machine milkers, and other “operators” on the chicken, hog, and cattle-raising livestock sections and complexes. Livestock workers make better money than field workers, and milkmaids are the best-paid category of workers on the farms. But their jobs can be brutally hard, usually involving split shifts to do morning and evening milking.

The interests of milkmaids and other skilled livestock workers in farm reform are not entirely clear. Since the mid-1960s, there have been repeated

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69 Shepherds may be the only group of skilled livestock workers who are predominantly male.
reports of successful experiments with the assignment of a group of animals to several milkmaids who can then care for the animals on a shift basis rather than each woman working split shifts to care for "her own" animals. However, these experiments have faded away over time and never been successfully generalized. It is possible that the animals dislike being passed from person to person, the reason often given for failure of such shift schemes, but it also seems that many milkmaids either don't want to share their high earnings with the service personnel who are grouped with them (to muck out the barns, distribute feed, etc.) or don't trust their colleagues to do a good job. The force of habit and custom in a privileged segment of the farm work force which benefits from relatively high earnings seems to make the milkmaids and kindred operators oppose reform. For many livestock workers the fear of having to work harder and assume responsibility if reform schemes are implemented seems to be an equally powerful reason to resist. Milkmaids, whose skills are not easily transferrable to the cities and who would therefore have to take the most unskilled work if they moved off the land, are likely to be relatively immobile and so committed to the status quo on their farms. However, because their work is so back-breaking and undesirable, the older generation is not being replaced with younger women. Younger women try by every means possible to get off

71 One of the best examples of such refusal to assume responsibility is provided in an article by Arkadii Vaksberg, Literaturnaia gazeta's legal correspondent, which describes livestock losses through lack of interest and official lies about the amount of feed available on the farm. "Sudebnyi ocherk: Veshnye vody," Literaturnaia gazeta, No. 5, January 31, 1979, p. 12. Following the article's publication, Mikhail Gorbachev, then the Central Committee agricultural secretary, had to intervene to protect Vaksberg from retribution by agricultural authorities angry that such a nasty story had been published.
the farms. Judging from complaints about the “brides’ shortage” in rural areas, many of them have successfully done so.72

Mechanizers, on the other hand, are predominantly men and extremely mobile. Some four and one-half million people, about eighteen percent of the total farm labor force, they are the farm’s aristocracy. Because their equipment is assigned to them individually, they have their own transportation when needed. Their wages are noticeably better than average, though not higher than milkmaids’, and their skills are transferrable to the cities. Therefore, they are in a good position to demand consideration from the farm, and often good at exploiting the irrationalities of the existing system to increase their earnings. They are also the social group from whom experimental collectives and new-style work groups are largely drawn.73 Their attitude to such changes is mixed: those who feel they work hard enough already, or the “leading workers” who would have their wages cut if put in a group, tend to oppose change. Many others support economic reform, knowing that they would earn more under different circumstances. However, there are also some suggestions that many of these workers would not be willing to work permanently in groups which gave them higher earnings because of the demands for long hours such experiments entail. In one famous case, a contract work group achieved outstanding results

73 In November, 1983, one growing season after the CPSU Politburo had mandated the general introduction of the brigade contract in plant-growing, the standing committee of the USSR Supreme Soviet on the agroindustrial complex learned that only six percent of all kolkhozniki and sovkhoz employees were working on the brigade contract, “and that such brigades are hand-picked from the ‘equipment-operating elite,’ which is then contrasted with the remaining mass of the farmers.” Izvestiia, November 11, 1983, as translated in CDSP, Vol. 35, No. 46, pp. 20-21.
for two years or so. By then all the mechanizers had earned enough to buy
cars. Then, having nothing else on which to spend their earnings, they
disbanded the new group and went back to work on individual piece-rates.74

By 1987, about 10% of the total agricultural labor force was made up of
specialists with a higher or specialized secondary education. This group is
highly varied, including a substantial number of people who work in the
administrative apparat off the farms, many farm chairmen and directors, and
about half of front-line managers (brigade leaders and livestock section heads).
Obviously their interests and positions vary depending on just what they do.
Apparatus workers are bureaucrats who benefit from the existing system.
Specialists in the apparatus would have to leave their comfortable city
apartments and move back to the countryside if the management apparatus
were taken apart.

Farm managers who have learned to run enterprises under Soviet
conditions often find themselves lost when told to take initiative and produce for
the market.75 The best ones, though, also chafe about the restrictions placed on
them by the campaign system of agricultural management.76

Brigadiers and heads of livestock sections are in a peculiar middle
ground. Traditionally, their job has been to get the people out to work and to
drive them when they slack off. Brigadiers are often praktiki, men and women

74 T.I. Zaslavskaya, “Behavior and economic development,” Ekonomika i
organizatsiia promyshlennogo proizvodstva, No. 3 (1980), as translated in
2.
76 Certainly the chairman of the Supreme Soviet’s Committee on Agrarian
Questions and Food Supplies, A.V. Veprev, director of the very successful
“Nazarovskii” sovkhoz in Krasnoiarsk krai, does so. See his comments on
Soviet Central Television’s “Sel’skii chas,” July 2, 1989, discussed in Don Van
who have never had much agricultural education. In the Uli'ianovsk oblast', for example, in 1982, one-third of the 800 brigadiers and livestock section heads had had no special preparation for their job. As a result, “they are street-smart managers, but they are extremely unwilling to introduce” new techniques or ways of working.\(^77\) Since they are the ones most directly concerned with plan fulfillment in the near term, such reluctance to innovate is not surprising. However, their control over the work force, and their low mobility (since they are often poorly educated, they would lose a great deal if their jobs disappeared) makes brigadiers, as a group, extremely hostile to any reform.

Front-line specialists such as farm agronomists and veterinarians, as well as managerial personnel like bookkeepers, are generally products of specialized agricultural schools. Often teenagers from the kolkhoz sent to the city to study at farm expense in return for a promise to return to their native village, they often are not inclined to stay in the countryside. Many never return to the farms at all after they receive their diplomas.\(^78\) Enormous numbers of specialists don't fulfill the three-year required term of farm work after their graduation from school. Those that do go back to the farms can expect low-paid work. The starting wage for a farm specialist is about 120 rubles a month.\(^79\)


\(^79\) Personal conversation at the Kuban Agricultural Institute, June, 1988. Judging from recent help-wanted ads, senior specialists can expect to make more: the Kirov oblast' kolkhoz “Gigant” offers 240 rubles a month for senior zootechnicians, a chief veterinarian, a chief agronomist, and a master builder; the Irkutsk oblast' sovkhoz “Suvorkovskii” offers a base wage of 215 rubles a month for a chief bookkeeper, promising in addition differentials for siberian and far north work; the Riazan oblast' “60th anniversary of the USSR” poultry factory offers 280 rubles a month for a senior engineer with at least three years'
Most of their time will be spent preparing reports for superior agencies rather than working in their technical specialties, for which they are reportedly often ill-prepared anyway. The poor preparation of specialists often makes them hostile to reforms under which they would be expected to function more independently or in which they would have to prove the value of their services in order to hold their jobs.

The attitudes of a final distinct social group on Soviet farms, the Party, Komsomol, trade union, people's control and other political activists, cannot be certainly described. It is difficult to generalize about their attitudes to reform or their power on the farms. The exact relationship between managers and party committees seems to be highly variable, from farms where the party committee secretary is the effective manager to those where the party committee is just an executive agency for the manager. Many rural party activists and primary party organization secretaries, like their equivalents in urban party organizations, surely see their activism as means of upward mobility. Judging from the number of times the Soviet press has demanded that farm party organizations take the initiative in introducing innovations, it seems likely that by and large farm party organizations' members are unwilling to take initiative for reform. Such conservatism is, perhaps, normal for most relatively junior members seeking to make their career in the party, or any rigidly hierarchical organization. A few may embrace an innovation as a way of distinguishing themselves and enhancing their careers, but for most change is likely to

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experience; and the Mogilev oblast' kolkhoz “Zaria kommuny” offers 220 for a master builder. "Vestnik agroprom'a, no. 41, October 6, 1989, p. 3.


threaten the career path and minor privileges for which they became activists in the first place.

Reform Proposals

Reform proposals advanced by the political leadership and more radical critics of Gorbachev have three basic thrusts. First, they seek to replace administered pricing and planning with a relatively free market in agricultural inputs and produce. Second, they seek to tie earnings to produce sold rather than work done. Third, they seek to make the farms and farmers pay at realistic rates for their supplies and capital goods as well as the land.

Farms are to be liberated from the tyranny of the plan. Plan targets have already been replaced by "state orders" (goszakazy), which are supposed to determine only part of a farm's production. However, the goszakazy so far appear to be only a new name for old targets—"there is no goszakaz, there is a directive." Changes in the system of procurement and storage designed to leave republics, provinces, and territories with more control over their own produce, and the introduction of regional cost-accounting (khozraschet) as demanded by the Baltic republics and some other regions of the country, may go further towards breaking up the old planning system.

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Under the reform proposals, agricultural inputs such as fertilizer and equipment, and much processing and marketing of outputs, will be handled by cooperatives. Modelled loosely after American farmers’ organizations, these coops are supposed to be purely voluntary, democratically-run agencies operating on a profit-and-loss basis. So far, the most-publicized examples of the new cooperatives, the “Kuban” Agroindustrial Combine in Krasnodar krai and the “Novomoskovskoe” Agroindustrial Association in Tula oblast’, only approximate this vision.84 Like the discredited district agroindustrial associations (RAPO) introduced in 1982, these new organizations unite all the farms and agricultural service agencies in a given administrative raion. The “Kuban” association has actually cut its administrative apparatus substantially, but it has been criticized because it remains centrally-directed.85

The system of normed work and guaranteed earnings, combined with plan targets which usually make incentive schemes unimportant because production levels at which bonus schemes would operate cannot be reached anyway, has created a paradoxical situation where farmers can earn more when they produce less. Plan targets for successful farms go up, and planners are careful to keep unprofitable enterprises alive. So-called “second-model khozraschet” for enterprises, and its associated “pay from gross income” are intended to correct these failings. Second-model khozraschet simply means that enterprises must live of their own earnings and make a profit on production. Pay from gross income means that earnings will be figured as a percentage of

the residual left after fixed and supply costs have been met rather than
according to legally-determined minima for each operation. Presumably, farms
which transfer to this system will be denied state credits except on a commercial
basis and allowed to go bankrupt if they cannot meet their expenses.

The farms themselves are to be reconstituted as “cooperatives of
cooperatives.” The kolkhoz or sovkhoz continues to exist, but “it isn’t the same:
it has neither brigadiers, heads of livestock sections, nor records clerks—only
those who are indispensable remain.”86 This model, originated by the martyred
experimenter Ivan Khudenko in the 1960s, envisions that each subunit of a
sovkhoz or kolkhoz, such as a farming brigade, machine shop, warehouse, or
management, will be related to the others only on a monetary basis, buying and
selling inputs and outputs to one another. Since the farm as a whole will need
to make a profit, the subunits will not buy goods or services they don’t need, nor
make products they cannot sell. As a result, market forces inside the farm will
eliminate the hypertrophied administrative apparatus, drive out underutilized
labor, eliminate overcapitalization, and produce a great gain in labor
productivity and efficiency.

Individual farmers have not cared about the cost of their production
because inputs and land have been free goods, while their interest has been to
maximize their piece-work earnings. Long-term leasing (arenda) of land and
equipment to small groups of farmers (either families, existing or reorganized
farm brigades, or independent cooperatives from outside the farm) is supposed
to correct this problem. The farm administration and the leasee (arendator) are
to agree on volume and quantity of production, inputs to be provided, the price

86 “Reflections: Search, act and affirm: Staff correspondents T. Chanturia and E.
Iakovlev meet with E.A. Shevardnadze, Candidate Member of the CC CPSU
Politburo and First Secretary of the Georgian CP,” Izvestia, January 12, 1984,
to be paid by the farm for produce, and the rent to be paid for land, equipment and inputs. The arendator keeps whatever he makes above his rent payments; but if he fails to fulfill the contract, he gets no pay from the farm. Leases may be for periods up to fifty years, and may be passed on to other members of the group who have actually been working the leasehold.

Obstacles to the Reform

If it were to be successfully implemented, this reform program would fundamentally change Soviet agriculture. However, it faces a number of severe problems, which helps explain the intensity with which the leadership has advocated these changes, especially the arenda, since mid-1987.

The cooperatives clearly threaten the power of the industrial ministries, which have been able to produce and sell whatever machinery and supplies they wanted to a captive market. If and as the cooperatives begin to refuse deliveries of unneeded supplies, and if industrial plants or production associations are allowed to compete with one another to secure orders, then the cooperative structure may help to free farms from the tyranny of their suppliers.

The khozraschet reform, if enforced, would bankrupt a substantial number of farms which are currently unprofitable. Moreover, if lease collectives begin to make more money during the transition period while the old wages-and-hours rules are in force, the farms will greatly exceed their wages budgets. Since farm managers and bookkeepers are personally liable for any payments to farmers in excess of their wages budget, existing farm managers have a strong incentive to avoid the new collectives, or to cheat on their contractual
obligations if they set up such groups (both phenomena seem widespread at the moment).

Widespread introduction of the arenda will make manifest the underemployment of many of the farms' manual workers. Now hidden by the social benefits they receive from the farms, once they become day laborers working for the leaseholders their status will be obvious and painful. The same problem will develop with respect to pensioners, who will become a burden for farms required to meet their pensions and provide them services while getting only occasional day-labor from them. One farm, which has some 270 pensioners getting fifty rubles or less a month from their pensions, introduced an additional payment of seventeen rubles a month to bring them up to the minimum because otherwise the pensioners would have resisted the labor-saving measures the introduction of economic reform brought with it.87

Allowing farms to go bankrupt and close down runs counter both to the welfare instincts of the farm population and the interests of the farm managers. No reports of complete liquidation of a farm under the reforms have been found. In Rostov oblast', the "kolkhoz aktiv and people" on most of the 27 identified "futureless" farms have asked that the farms be maintained. Agreeing with this request, the source, an official of the USSR kolkhoz council, adds, "and, in fact, not only the labor collectives themselves are responsible" for the farms' unprofitability, but so are "unfavorable economic conditions."88 This sounds very like the kolkhoz managers preserving their jobs. Most bankrupt farms have apparently been made subsidiaries of a profitable industrial enterprise.89

Land-leasing raises other problems as well. At present, only farms may lease land. But as long as the farm management controls the land, they can impose conditions on lease holders which will leave the leasees dependent on the farm management while not requiring the management to do anything. That is, the farm management may become landlords in the worst sense. The only obvious way around this difficulty is allowing farmers to lease land directly from the state (the rural soviets). Yet everyone who depends on the existing farms for their livelihood, as well as the rural apparatus which finds the farms useful as a control and plan-fulfillment device, as well as ideological opponents of economic reform, reject this expedient.

The peasants are unlikely to take land as long as the farms continue to exist. As long as the farm management apparatus remains there is no real guarantee that a simple change in policy decreed from the center will not result in recollectivization. Even if their property rights were to be legally guaranteed, and an acceptable way to enforce those rights found, they can see little reason to pay for the land (which, after all, was nationalized) yet again. 90

Farm managers and district-level cadres occupy a strategic position in the new system. Because of their network of contacts and familiarity with the overall system, as well as their role in determining the conditions of land leases, they can favor some farmers and hinder others. In the process, the farm managers and especially the district party cadres may be able to convert their political assets into wealth, assuming a dominant position as a kind of new landlord/entrepreneurial group in the countryside. A similar process seems already to have occurred in the People's Republic of China. 91

of these cadres may come to favor reform, but only in order to make it work quite differently than the leadership and their economic theorists intend.

Sources of Political Support for Reform

It is much more difficult to specify who supports reform in the Soviet countryside than it is to find reasons why most people oppose it, because opposition to reform can be imputed on the basis of social position, while support for reform so far has been an individual commitment.

At the elite level, concern to improve agriculture's performance and deal with the nation's food crisis is a compelling reason to support reform. Although they cannot know when the social contract will break down as it did in the country's coal-mining regions in the summer of 1989, everyone in the leadership understands that keeping the workers fed in an important element in the task of maintaining party dominance. The desire to redirect investment away from agriculture into other areas is an equally strong incentive to support agricultural reform. A third compelling reason is the desire to take organizational and political resources away from rivals for power.

Regional officials may support reform because their political patrons at higher levels do. They may also do so because their particular territory is having increasing difficulty meeting its plans. For instance, V.K. Mesiats, no friend of organizational reform during his lengthy tenure as USSR Minister of Agriculture, has supported experiments with family contracting, agroindustrial combines, and the arendnyi podriad in Moscow oblast' since taking over the

---

party committee there. The Moscow oblast' party first secretary is responsible not only for feeding the hungry metropolis, but also a fair number of medium-sized industrial cities in the province. Given the difficulties of doing so, it is hardly surprising that Mesiats should turn out to be relatively pro-reform in his new job—even though he seems politically to have stood with the anti-Gorbachev forces at a number of recent Central Committee plena. The leading role of such oblasti as Kalinin and Orel' in introducing the arenda also supports the assumption that regional officials who foresee trouble or who are already experiencing it because of rural outmigration would push reform. Orel', like Krasnodar and Rostov, also has a history of using innovative forms of work organization.

Almost all stories about the introduction of innovation in work organization in the Soviet countryside strongly suggest that initiative came from the local Party authorities in response to local needs and central directives. Either managers or skilled workers (mechanizers or milkmaids) propose the innovation, whether or not they are put up to it by the party. The Soviet media usually paint these people as heroic loners, individuals willing to stand up for a better way of doing things. Such a portrayal suggests the reasonable conclusion that innovators are individuals, that their ideas are not necessarily well received, and that the costs of being associated with an innovation can be high. A truly successful innovator, however, is likely to be able to use success to lift him or herself off the farm and become a semi-professional politician and traveling teacher of “advanced experience.” Individual labor heroes and innovators as diverse as Aleksei Stakhanov and Mariia Demchenko from the

1930s, Vladimir Pervitskii from the 1950s and 1960s, and Nina Pereverzeva in the 1970s have done so. Unfortunately, to the extent that such innovators are seen by their fellow workers as rate-busters or careerists mainly interested in getting off the farm, they may lose village support as easily as their prestige can gain it.

Urban skilled workers and professionals are another potential source of support for reform. At least some of the collectives which have taken over deserted livestock sections on farms in the Russian NBEZ are made up of urbanites going back to the land. More broadly, city people, who of course have a vital interest in increasing food supplies, are likely to support agricultural reform if it promises success—until it involves a food price increase. Gorbachev’s promise at the March plenum that food prices would not be raised for two or three years at least was an obvious, if less than completely reassuring, effort to play to this feeling. So far, appeals to return to neo-Stalinist methods of dealing with the countryside seem not to have generated much support, probably because many urban residents have themselves come from the countryside or are at most one generation away from the land so that they cannot (yet) be fooled by claims about how well the peasants live and how “new kulaks” are threatening to squeeze the cities dry.

A final source of support for reform is those farmers who still retain the traditional love of the land. This feeling seems to be strongest in non-Russian areas such as the Baltic states, where a return to peasant farming is now under way.

93 On Demchenko and Pervitskii, see my “To be Master of the Land,” op. cit. Pereverzeva, leader of a harvest-transport link in Rostov oblast’, was promoted to the Central Committee in the wake of the campaign for the “Ipatov method” in the late 1970s.
Can the Old Coalition Be Broken?

In the short run, the Soviet leadership has only weak instruments for breaking the anti-reform coalition in the countryside. Individual officials can be fired, of course. But affecting the behavior of the front-line officials, the brigadiers and specialists, and breaking their hold over the mass of manual laborers and pensioners is likely to be much more difficult. Eventually, of course, generational change will take care of these obstacles, as more and more of the rural population in the Slavic republics dies or migrates to the cities. But this solution will leave the countryside depopulated, unable to provide the agricultural produce the nation needs.

To avoid this outcome, Gorbachev has resorted to large doses of rhetoric. The repeated claims of crisis are a way of mobilizing public opinion against the officials who resist change. Much of the new openness about Soviet history has the same intent: discussing the past errors of collectivization is a way of guaranteeing that policy will not change again so that it is safe to lease land and enrich oneself. The tolerance of Russian nationalism and religious revival shown by the regime also may be, in part, an attempt to enlist traditional feelings in the attempt to rebuild the countryside. Russian nationalists and Communist reformers agree on this policy, if nothing else.

In the longer term, agrarian reform strategy relies on structural changes in the Soviet system. Development of a socialist "state of laws" as envisioned in the creation of the Congress of People's Deputies will establish a legal framework within which the innovators can assert and defend their rights. As marketization proceeds, the innovators will increasingly organize to do so. The prominent role played by Soviet agricultural economists Vladimir Tikhonov and
Aleksei Emel'ianov in the opposition Inter-regional Deputies' Group is a sign of such political awakening. The appeal of Agrarian Deputies at the first session of the Congress, and the subsequent organization of an independent Association of Peasant Farms and Cooperatives of Russia in July, 1989, are even more important indicators that progressive farmers are beginning to organize. Approval of the new association from the highest levels was indicated by the appearance of V.F. Bashmachnikov, a Central Committee "consultant," as its spokesman.95

For many people, the problem will be to demonstrate that they can live better under the new system than they have under the old, familiar one. Since Soviet rural areas are poor and underdeveloped, this demonstration ought, in theory, not to be too difficult.96 For instance, Stalin forbade the construction and operation of subsidiary industries such as food-processing plants on the farms in order to ensure that all produce was delivered to off-farm collection points. As a result, an enormous amount of damaged produce is lost. Opening more subsidiary industries right on the farms will occupy surplus workers and raise everyone's wages, as well as making use of what would otherwise be waste products. Such enterprises will also provide additional earnings for people with private plots, who can sell their produce on the farm instead of taking it to the cities, and additional employment for them.

96 According to the USSR State Statistics Committee, at the beginning of 1988, 42% of sovkhoz housing had running water, 30% had sewers, 81% had natural gas service, and 15% had hot water. Kolkhoz housing is presumably worse off. "Goskomstat SSSR soobshchaet," APK: Ekonomika, upravlenie, No. 6, June 1989, p. 20.
Adoption of Nikolai Shmelev's suggestion that farms be paid in hard currency for above-plan production is also a way to build support for reform in the countryside.\(^97\) (Shmelev argued that the money would otherwise go to foreigners for grain imports.\(^98\)) Giving the farms money to pay for imports will allow them to buy equipment, materials, and consumer goods for their workers abroad. It may also, however, have the perverse effect of strengthening the management's hand against the farm members, since individuals are forbidden to hold hard currency.

The need to break management's control over the mass of farmers also helps to explain why pension payments have suddenly emerged as a key question in Soviet politics. Not only are pensioners often grindingly poor and dependent on the farms (about one-sixth of all Soviet pensioners are on kolkhozy\(^99\)), but they are another important part of the reservoir of political support for the existing farm management. Whether or not they like their farm, because they are so dependent they can be mobilized by the kolkhoz aktiv against any reform proposals. Raising kolkhozniks' pensions to the same level as those guaranteed by the state, as the Congress of People's Deputies decided to do in August, 1989, may be a first step towards taking pension payments away from the kolkhozy altogether, which would remove this lever of control from the hands of farm managers.\(^100\)

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\(^99\) Narodnoe khoziaistvo SSSR v 1987 g.: Statisticheskii ezhegodnik, Moscow: "Finansy i statistiki," 1988, p. 396.

**Conclusions**

The forces arrayed against the Soviet "New Agrarian Policy" are extremely strong but not unbreakable. Demographic trends and the need of the cities for more food work for its success. But farm organization inherited from collectivization continues to provide antireform forces with powerful bases for opposition, especially in their control over the mass of the peasantry. Even measures adopted to break the managers' control, while they will lead the best farms to change, may reinforce the existing system in the mass of mediocre or unprofitable farms by giving managers more ways to influence their workers.

The existing system is also intertwined with the party. Although ideological appeals to preserve the old system seem to have had relatively little impact, they point up the obvious fact that the CPSU's claim to authority is based on the existing system, and changing it threatens the party's dominance. Moreover, if market reforms are not carried out very carefully, with great attention to a "safety net" for people who stand to lose as prices are changed, farms are streamlined, and labor productivity rises, the attractiveness of the old Brezhnevite "social contract" as a rallying point for opposition to reform will grow.

Although the outcome of the ongoing political struggle over agrarian policy in the Soviet Union cannot be predicted with certainty, this analysis also suggests that Soviet politics are becoming more "normal." The interrelation of organizational structure and political interest groups can be studied in a wide variety of systems. Peasants everywhere are a conservative force, subject to political mobilization by elites concerned to defend their privileges and prevent reform. More detailed research, including studies of individual farms that have until recently been impossible to carry out in the Soviet Union, will be needed to
develop these themes. But for the first time in two generations, it may now be possible to undertake such fieldwork, and in the process to draw the study of Soviet politics back into comparative politics even as Soviet politics themselves more and more resemble usual politics in other systems.
Table 1  AGRICULTURAL WAGES

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<tbody>
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<td>All workers and employees</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Individual average monthly earnings (rubles)</td>
<td>122.0</td>
<td>168.9</td>
<td>190.1</td>
<td>195.6</td>
<td>202.9</td>
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<tr>
<td>As % of 1970</td>
<td>100.0%</td>
<td>138.4%</td>
<td>155.8%</td>
<td>160.3%</td>
<td>166.3%</td>
</tr>
<tr>
<td>Kolkhozy (2) Individual average monthly earnings (rubles)</td>
<td>74.9</td>
<td>118.5</td>
<td>153.4</td>
<td>163.0</td>
<td>170.2</td>
</tr>
<tr>
<td>As % of all workers</td>
<td>61.4%</td>
<td>70.2%</td>
<td>80.7%</td>
<td>83.3%</td>
<td>83.9%</td>
</tr>
<tr>
<td>As % of 1970</td>
<td>100.0%</td>
<td>158.2%</td>
<td>204.8%</td>
<td>217.6%</td>
<td>227.2%</td>
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<tr>
<td>Tractor-drivers, combiners</td>
<td>154</td>
<td>189</td>
<td>202</td>
<td>209</td>
<td></td>
</tr>
<tr>
<td>As % of all workers</td>
<td>91.2%</td>
<td>99.4%</td>
<td>103.3%</td>
<td>103.0%</td>
<td></td>
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<tr>
<td>As % of kolkhoz average</td>
<td>130.0%</td>
<td>123.2%</td>
<td>123.9%</td>
<td>122.8%</td>
<td></td>
</tr>
<tr>
<td>All kolkhoz livestock workers</td>
<td>135</td>
<td>175</td>
<td>189</td>
<td>194</td>
<td></td>
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<tr>
<td>As % of all workers</td>
<td>79.9%</td>
<td>92.1%</td>
<td>96.6%</td>
<td>95.6%</td>
<td></td>
</tr>
<tr>
<td>As % of kolkhoz average</td>
<td>113.9%</td>
<td>114.1%</td>
<td>116.0%</td>
<td>114.0%</td>
<td></td>
</tr>
<tr>
<td>Milkmaids, machine milkers</td>
<td>156</td>
<td>213</td>
<td>234</td>
<td>240</td>
<td></td>
</tr>
<tr>
<td>As % of all workers</td>
<td>92.4%</td>
<td>112.0%</td>
<td>119.6%</td>
<td>118.3%</td>
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<tr>
<td>As % of kolkhoz average</td>
<td>131.6%</td>
<td>138.9%</td>
<td>143.6%</td>
<td>141.0%</td>
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</tr>
<tr>
<td>Sovkhozy (1) Individual average monthly earnings (rubles)</td>
<td>101.1</td>
<td>149.7</td>
<td>184.4</td>
<td>195.2</td>
<td>201.3</td>
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<tr>
<td>As % of all workers</td>
<td>82.9%</td>
<td>88.6%</td>
<td>97.0%</td>
<td>99.8%</td>
<td>99.2%</td>
</tr>
<tr>
<td>As % of 1970</td>
<td>100.0%</td>
<td>148.1%</td>
<td>182.4%</td>
<td>193.1%</td>
<td>199.1%</td>
</tr>
<tr>
<td>Tractor-drivers, combiners</td>
<td>195</td>
<td>228</td>
<td>239</td>
<td>242</td>
<td></td>
</tr>
<tr>
<td>As % of all workers</td>
<td>115.5%</td>
<td>119.9%</td>
<td>122.2%</td>
<td>119.3%</td>
<td></td>
</tr>
<tr>
<td>As % of sovkhoz average</td>
<td>130.3%</td>
<td>123.6%</td>
<td>122.4%</td>
<td>120.2%</td>
<td></td>
</tr>
<tr>
<td>All sovkhoz livestock workers</td>
<td>163</td>
<td>203</td>
<td>217</td>
<td>225</td>
<td></td>
</tr>
<tr>
<td>As % of all workers</td>
<td>96.5%</td>
<td>106.8%</td>
<td>110.9%</td>
<td>110.9%</td>
<td></td>
</tr>
<tr>
<td>As % of sovkhoz average</td>
<td>108.9%</td>
<td>110.1%</td>
<td>111.2%</td>
<td>111.8%</td>
<td></td>
</tr>
<tr>
<td>Milkmaids, machine milkers</td>
<td>172</td>
<td>231</td>
<td>250</td>
<td>258</td>
<td></td>
</tr>
<tr>
<td>As % of all workers</td>
<td>101.8%</td>
<td>121.5%</td>
<td>127.8%</td>
<td>127.2%</td>
<td></td>
</tr>
<tr>
<td>As % of sovkhoz average</td>
<td>114.9%</td>
<td>125.3%</td>
<td>128.1%</td>
<td>128.2%</td>
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</table>

Source: Narkhoz '87, pp. 272, 273, 392-393.

(1) "All workers and employees" includes sovkhoz farmers.
## Table 2: Kolkhoz Annual Wages and Gross Income (Valovoi Dohod)

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<tbody>
<tr>
<td><strong>(1) Individual average daily earnings (rubles)</strong></td>
<td>2.68</td>
<td>3.90</td>
<td>4.54</td>
<td>4.77</td>
<td>5.09</td>
<td>5.22</td>
<td>5.35</td>
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<tr>
<td><strong>(2) Individual average monthly earnings (rubles)</strong></td>
<td>n.a.</td>
<td>74.9</td>
<td>92.0</td>
<td>n.a.</td>
<td>n.a.</td>
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<tr>
<td><strong>(3) Individual average annual earnings (rubles)</strong></td>
<td>n.a.</td>
<td>898.8</td>
<td>1,104.0</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
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<tr>
<td><strong>(4) Total annual public-sector employment (million people)</strong></td>
<td>18.6</td>
<td>16.7</td>
<td>15.2</td>
<td>14.8</td>
<td>14.4</td>
<td>14.1</td>
<td>13.7</td>
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<tr>
<td><strong>(5) Total annual public-sector earnings paid to individuals (million rubles; calculated (3 x 4))</strong></td>
<td>----</td>
<td>15,010</td>
<td>16,781</td>
<td>----</td>
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<tr>
<td><strong>(6) Total annual public-sector earnings paid to individuals (million rubles; reported)</strong></td>
<td>11,500</td>
<td>15,000</td>
<td>16,700</td>
<td>17,500</td>
<td>18,200</td>
<td>18,600</td>
<td>18,700</td>
</tr>
<tr>
<td><strong>(7) Total annual gross income, all kolkhozy (million rubles)</strong></td>
<td>17,900</td>
<td>22,800</td>
<td>22,300</td>
<td>23,100</td>
<td>24,300</td>
<td>23,900</td>
<td>22,200</td>
</tr>
<tr>
<td><strong>(8) Wages as % of farms' gross income (calculated (6 / 7))</strong></td>
<td>64.2%</td>
<td>65.8%</td>
<td>74.9%</td>
<td>75.8%</td>
<td>74.9%</td>
<td>77.8%</td>
<td>84.2%</td>
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Current prices.

Table 2 KOLKHOZ ANNUAL WAGES AND GROSS INCOME (VALOVOI DOKHOD)

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<tr>
<td>5.52</td>
<td>5.64</td>
<td>5.90</td>
<td>6.37</td>
<td>6.63</td>
<td>6.85</td>
<td>7.27</td>
<td>7.51</td>
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<tr>
<td>118.5</td>
<td>122.1</td>
<td>128.9</td>
<td>141.1</td>
<td>147.7</td>
<td>153.4</td>
<td>163.0</td>
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<td>1,422.0</td>
<td>1,465.2</td>
<td>1,546.8</td>
<td>1,693.2</td>
<td>1,772.4</td>
<td>1,840.8</td>
<td>1,956.0</td>
<td>2,042.4</td>
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<tr>
<td>13.3</td>
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<td>12.9</td>
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<td>18,913</td>
<td>19,194</td>
<td>19,954</td>
<td>21,842</td>
<td>22,687</td>
<td>23,378</td>
<td>24,646</td>
<td>24,917</td>
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<td>19,000</td>
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<td>21,900</td>
<td>22,700</td>
<td>23,400</td>
<td>24,600</td>
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<tr>
<td>19,600</td>
<td>20,100</td>
<td>21,800</td>
<td>35,400</td>
<td>35,600</td>
<td>35,200</td>
<td>37,900</td>
<td>40,400</td>
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<tbody>
<tr>
<td>96.9%</td>
<td>95.0%</td>
<td>91.7%</td>
<td>61.9%</td>
<td>63.8%</td>
<td>66.5%</td>
<td>64.9%</td>
<td>61.9%</td>
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Current prices.
Source: Sel'skoe khoziaistvo SSSR, 1988, pp. 443, 451, 459; Narkhoz '77, pp. 350;
Narkhoz '79, pp. 285, 301; Narkhoz '85, pp. 277, 286.
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<tbody>
<tr>
<td>all specialists with higher or secondary specialized education</td>
<td>973</td>
<td>1,400</td>
<td>1,856</td>
<td>2,392</td>
<td>2,588</td>
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<td>% of all agricultural employment</td>
<td>4%</td>
<td>5%</td>
<td>7%</td>
<td>9%</td>
<td>10%</td>
</tr>
<tr>
<td>all tractor drivers, combiners, auto/truck drivers</td>
<td>3,443</td>
<td>3,941</td>
<td>4,461</td>
<td>4,608</td>
<td>4,609</td>
</tr>
<tr>
<td>% of all agricultural employment</td>
<td>13%</td>
<td>15%</td>
<td>17%</td>
<td>18%</td>
<td>18%</td>
</tr>
<tr>
<td>all milkmaids</td>
<td>1,553</td>
<td>1,520</td>
<td>1,349</td>
<td>1,303</td>
<td>1,265</td>
</tr>
<tr>
<td>% of all agricultural employment</td>
<td>6%</td>
<td>6%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>All non-professional agricultural employment</td>
<td>21,054</td>
<td>19,749</td>
<td>18,367</td>
<td>17,648</td>
<td>16,923</td>
</tr>
<tr>
<td>All non-professionals as % of all agricultural employment</td>
<td>78%</td>
<td>74%</td>
<td>71%</td>
<td>68%</td>
<td>67%</td>
</tr>
<tr>
<td>All agricultural employment</td>
<td>27,023</td>
<td>26,610</td>
<td>26,033</td>
<td>25,951</td>
<td>25,385</td>
</tr>
<tr>
<td>% of all agricultural employment</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Kolkhozy

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>total kolkhoz employment</td>
<td>16,715</td>
<td>15,173</td>
<td>13,344</td>
<td>12,687</td>
<td>12,236</td>
</tr>
<tr>
<td>specialists with higher or secondary specialized education</td>
<td>390</td>
<td>548</td>
<td>690</td>
<td>887</td>
<td>986</td>
</tr>
<tr>
<td>tractor drivers and combiners</td>
<td>1,462</td>
<td>1,542</td>
<td>1,567</td>
<td>1,519</td>
<td>1,533</td>
</tr>
<tr>
<td>auto/truck drivers</td>
<td>580</td>
<td>639</td>
<td>682</td>
<td>731</td>
<td>765</td>
</tr>
<tr>
<td>all livestock workers</td>
<td>n.a.</td>
<td>n.a.</td>
<td>2,981</td>
<td>2,938</td>
<td>2,918</td>
</tr>
<tr>
<td>of which milkmaids</td>
<td>n.a.</td>
<td>n.a.</td>
<td>786</td>
<td>755</td>
<td>728</td>
</tr>
<tr>
<td>of which swineherds, operators</td>
<td>n.a.</td>
<td>n.a.</td>
<td>135</td>
<td>131</td>
<td>146</td>
</tr>
<tr>
<td>of which shepherds</td>
<td>n.a.</td>
<td>n.a.</td>
<td>172</td>
<td>164</td>
<td>168</td>
</tr>
<tr>
<td>of which fowlkeepers, operators</td>
<td>n.a.</td>
<td>n.a.</td>
<td>33</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>of which other livestock workers</td>
<td>n.a.</td>
<td>n.a.</td>
<td>1,855</td>
<td>1,862</td>
<td>1,850</td>
</tr>
<tr>
<td>non-professional kolkhoz employment</td>
<td>14,283</td>
<td>12,444</td>
<td>9,279</td>
<td>8,474</td>
<td>7,884</td>
</tr>
<tr>
<td>Non-professionals as % of all kolkhoz employment</td>
<td>85%</td>
<td>82%</td>
<td>70%</td>
<td>67%</td>
<td>64%</td>
</tr>
<tr>
<td>----------------------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>Sovkhozy</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>total sovkhoz employment</td>
<td>8,900</td>
<td>10,300</td>
<td>11,600</td>
<td>12,000</td>
<td>12,000</td>
</tr>
<tr>
<td>specialists with higher or secondary specialized education</td>
<td>442</td>
<td>676</td>
<td>948</td>
<td>1,248</td>
<td>1,325</td>
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<tr>
<td>tractor drivers and combiners</td>
<td>958</td>
<td>1,176</td>
<td>1,389</td>
<td>1,407</td>
<td>1,407</td>
</tr>
<tr>
<td>auto/truck drivers</td>
<td>443</td>
<td>556</td>
<td>721</td>
<td>802</td>
<td>828</td>
</tr>
<tr>
<td>all livestock workers</td>
<td>n.a.</td>
<td>n.a.</td>
<td>2,578</td>
<td>2,651</td>
<td>2,658</td>
</tr>
<tr>
<td>of which milkmaids</td>
<td>n.a.</td>
<td>n.a.</td>
<td>561</td>
<td>546</td>
<td>535</td>
</tr>
<tr>
<td>of which swineherds, operators</td>
<td>n.a.</td>
<td>n.a.</td>
<td>109</td>
<td>114</td>
<td>122</td>
</tr>
<tr>
<td>of which shepherds</td>
<td>n.a.</td>
<td>n.a.</td>
<td>290</td>
<td>280</td>
<td>274</td>
</tr>
<tr>
<td>of which fowlkeepers, operators</td>
<td>n.a.</td>
<td>n.a.</td>
<td>112</td>
<td>120</td>
<td>119</td>
</tr>
<tr>
<td>of which other livestock workers</td>
<td>n.a.</td>
<td>n.a.</td>
<td>1,506</td>
<td>1,591</td>
<td>1,608</td>
</tr>
<tr>
<td>non-professional sovkhoz employment</td>
<td>7,057</td>
<td>7,892</td>
<td>7,470</td>
<td>7,483</td>
<td>7,396</td>
</tr>
<tr>
<td>non-professionals as % of all sovkhoz employment</td>
<td>79%</td>
<td>77%</td>
<td>64%</td>
<td>62%</td>
<td>62%</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>total other agricultural employment</td>
<td>1,408</td>
<td>1,137</td>
<td>1,089</td>
<td>1,264</td>
<td>1,149</td>
</tr>
<tr>
<td>total other as percent of all agricultural employment</td>
<td>5%</td>
<td>4%</td>
<td>4%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>specialists with higher or secondary specialized education</td>
<td>141</td>
<td>176</td>
<td>218</td>
<td>257</td>
<td>277</td>
</tr>
<tr>
<td>tractor drivers and combiners</td>
<td>0</td>
<td>18</td>
<td>64</td>
<td>100</td>
<td>33</td>
</tr>
<tr>
<td>auto/truck drivers</td>
<td>0</td>
<td>10</td>
<td>38</td>
<td>49</td>
<td>49</td>
</tr>
<tr>
<td>of which non-professionals</td>
<td>1267</td>
<td>933</td>
<td>769</td>
<td>858</td>
<td>790</td>
</tr>
<tr>
<td>non-professionals as % of all other agricultural employment</td>
<td>90%</td>
<td>82%</td>
<td>71%</td>
<td>68%</td>
<td>69%</td>
</tr>
</tbody>
</table>

Source: Sel'skoe khoziaistvo SSSR, 1988, pp. 421, 422, 423, 426, 436, 443, 451
Note: pp. 422-423 give slightly different numbers for kolkhoz and sovkhoz mechanizers and truck drivers.
Note: 1970 and 1975 *non-professional agricultural employment* is overstated by inclusion of (unknown) number of livestock specialists.