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MODELS OF SOVIET AGRICULTURE:
THE SOVIET CASE IN HISTORICAL PERSPECTIVE

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Models of Socialist Agriculture: The Soviet Case in Historical Perspective

INTRODUCTION

D. Gale Johnson has articulated very well what many who study socialist agriculture have felt for a long time about the current status and prospects of Soviet agriculture: Puzzlement and disappointment. Puzzlement that the many seemingly correct and necessary organizational reforms and the enormous investments in non-human and human capital have yielded so modest and variable a return. Disappointment, and especially in these times of increasing relative scarcity of agricultural products, that the USSR, like most of Europe, has been converted from a modest net average annual exporter into a major importer of farm products. Disappointment also, I might add, that we, along with their own experts, have been unable to identify a key for overcoming the laggard character of the Soviet agricultural sector.

The precarious state of Soviet agriculture has been brought forcefully to the attention of the nonspecialist in recent years. First, there was the significant short-fall in grain output in 1972, which contributed its part to sharply rising world grain prices. More recently has been the 80 million metric ton shortfall of 1975 -- a shortfall equal to approximately 40% of the total and bountiful 1973 grain crop or 80% of our best estimate of the 1972 year-end Soviet grain stock position. A look at the recent record with respect to grain crops indicates both the magnitude and the potentially ominous character of these developments. First, total output of grains in the Soviet Union more than doubled between 1955 and 1972, rising from a bit in excess of 100 million metric tons to about 220 million tons. This rising trend has been accompanied by a rise in the year-to-year variability of output, and not just absolutely but proportionally as well. Variation (attributable primarily to climatic conditions) in the neighborhood of 15-20% from year-to-year was common

in the 1950s; but the 1960s and 1970s have seen several swings well in excess of 30% (of previous year totals). Moreover, since at least the mid-1960s, these year-to-year variations have not been damped by fluctuations in livestock herds, as was previously the case. Consequently, variation in Soviet grain output has been converted from a domestic problem into an international problem, and the sheer magnitude of annual absolute variations in recent years is sufficient to make this a problem rather than a boon for most of us.

Another and in some ways more striking indicator of the disappointing performance of Soviet agriculture may be seen in the very low productivity of labor in Soviet agriculture. According to official figures, the productivity of labor in Soviet agriculture, expressed as an average for 1966-1970, was "approximately" 20-25% of that in the United States. By contrast, the productivity of labor in Soviet industry in 1971 is given as 54% of the US level, having reportedly risen from approximately 11% in 1913. Whatever the merits of such long-term, cross-national comparisons, there is certainly a complete concensus of all experts, theirs as well as ours, that productivity is extremely low in Soviet agriculture and that it has not risen significantly since the revolution.

WHAT IS WRONG WITH SOVIET AGRICULTURE? MULTIPLE CHOICE

What is wrong with Soviet agriculture? The papers presented by several of my colleagues on this panel, or any standard source on Soviet agriculture, yield a rather long list of actual and potential problems:

Unfavorable climatic conditions

Diseconomies of scale

Insufficient and contradictory work incentives

Inadequate research and development

Poor extension services

Irrational wholesale (agricultural procurement and transfer) prices

Contradictory retail price policies

Absence of land rents and capital charges

Disadvantageous sex, age and educational composition of the agricultural
labor force

Inadequate economic infrastructure in the rural sector

Rural "blahs"

ALL OF THE ABOVE

I think that most of us who have studied Soviet agriculture would answer "all of the above," but it is not very satisfying to do so, and I am sure that such an answer must be even more unsatisfying to Soviet policy makers. Far better to discover a catholicon, which, once discovered, could break the long jam in Soviet agricultural productivity once and for all.

The Soviet leadership is well aware of most, if not all, of the problems catalogued above, and if the answer really is "all of the above," then the only course of action that remains is for it to "muddle on" toward an eventual but still remote solution. On this head it would be useful to explore whether or not we are correct in supposing that total Soviet investment in agriculture in the post-Stalin years has indeed been large relative to investment in agriculture in the West. It has certainly been "large" during the post-Khrushchev years when measured as a share of total investment and GNP, but is the "capital stock" large when compared to the outcome of total federal, state, local and private investment in the United States (given realistic capital consumption rates)? I do not think that we really know, and I have been unable to find an estimate for the United States. This is an avenue that might be followed up, for it could give us an indication of just how long it will take for the Soviet Union to overcome the relative backwardness of its agriculture. Of course, even in this case, the results would have to be adjusted to reflect the differentially more favorable agricultural potential of the United States. But I leave this to those who are experts in agriculture.

Is there on the other hand something vital that we have overlooked? Does a catholican exist? The answer is almost certainly "no." There seems to be fairly general agreement in the West on the proposition that the fundamental problem of Soviet agriculture is the absence of the family farm, but, assuming that this is so, there is no way for the Soviet Union to turn back now. The large, collectively-worked farm is here to stay in the Soviet Union and not only, or even necessarily, for ideological reasons. Even if we ignore the constraints imposed by the existing land tenure system and by the structure of the available capital stock, the family farm both as an institution and as a repository of specialized knowledge is gone forever, never to return in the USSR.

"Muddle on" is about the only course of action that remains.

MODELS OF SOVIET AGRICULTURE

As I have indicated above, the "muddle on" solution, although probably the only possible course of action, is not very satisfactory analytically, and it must be even less so to Soviet policy makers seeking a breakthrough to agricultural progress and prosperity. Not much can be done to asuage the feelings of the Soviet policy maker, but the Soviet experience is important and instructive in and of itself to theorists of economic growth and development. I, for one, am persuaded that our growth model builders, and especially our two-sector model builders, have failed, as Stalin would have put it, to draw the "correct lessons" from the Soviet experience.

Let me stress at the outset that there is no such thing as "a" model of Soviet socialist agriculture. Historically there have been at least three clearly differentiable models. Indeed, there is a danger, I believe, that Soviet policy makers will conclude, as my colleague on the panel, D. Gale Johnson has himself hinted, that only by means of another wide-ranging, fundamental reconstruction of agricultural institutions could agricultural output be increased and efficiency augmented significantly. This would be, in my opinion, a serious

mistake, for a main part of the problem of Soviet agriculture historically has been the turbulence of world events and domestic politics, as a glance at any long time series on Soviet agricultural output will show.

Consider, for example, that hardly a decade has passed since the 1917 revolution without a major shock and setback for Soviet agriculture. Two of these shocks were exogeneously determined. The first was the revolution and civil war; the second was the devastation brought by WWII. In each case agricultural output was essentially halved and required nearly a decade to restore. Two were deliberate policy shocks. Mass collectivization set Soviet agricultural production back as much as either military conflict, and, again, almost a decade was required to restore the preshock level of output. The second major policy shock involved the growth of the state farm system in 1954-56 and the abolition of the Machine Tractor Stations and the multichannel procurement system in 1958, the significance of which have been much underestimated. In any event, the current organizational structure of Soviet agriculture is a little less than two decades old, and another major institutional change would almost certainly prove counterproductive.

Let me sketch very briefly the main and perduring characteristics of the three models of Soviet agriculture that have emerged during the Soviet period, with the objective of highlighting the unique, and particularly the promising features, of the current institutional arrangement. The first model is well-known as that of the NEP (New Economic Policy). Its fundamental characteristics were three. The peasant family farm predominated, with all that characterization implies in the way of complex production functions, "self-exploitation" of family labor and smallness of scale. Second, output not consumed on the farm was sold mainly in open markets both within and without the rural sector. Third, middle-man activity was legal. Fundamentally, then, the NEP was a period of growing pecuniary relations among members of the rural population and between them and urban, industrial and state sectors.

By all objective measures the NEP agricultural model was a success. Prewar output levels were relatively quickly restored, the composition of agricultural output improved markedly and the peasant producers showed themselves to be highly sensitive to price signals, and thus the NEP agricultural markets seem to have been working very well.

Mass collectivization in the late 1920s and early 1930s destroyed the NEP model. The reasons for abandonment of the NEP model are various and not entirely clear even at this late point in time. Three are of significance for our purposes, however. First, the Bolsheviks had then, and retain, an almost religious faith in the large-scale farm, and it was believed that the amalgamation of small peasant farms into large collective farms would yield significant economies of scale. Second, the Bolsheviks, following Marx, were hostile to "commodity production and exchange" (in modern parlance: market relations among economic transactors), and collectivization essentially depecuniarized the agricultural sector. Third, the Bolsheviks misread the economic meaning of the decline in grain deliveries late in the 1920s and believed, quite mistakenly, that the NEP model was failing for both economic and political reasons.

The model imposed upon Soviet agriculture by mass collectivization is even better known than the NEP model and requires little description. For our purposes it will serve to stress four characteristics. (1) It was a relatively large-scale and thus not a family operation. (2) The bulk of its economic transactions were conducted in kind [payments to the MTS, to members for work done and obligatory deliveries (a tax mainly) to the state]. (3) It tended to be highly specialized. (4) Wage payments to members were determined residually at the end of each year in producer-cooperative fashion. I should add, perhaps, that collective-farm agriculture was imposed upon the agricultural population, and it was apparently imposed in the mistaken expectation that this

form of organization would facilitate the extraction of an agricultural surplus "to finance" rapid industrialization. As I have shown elsewhere, nothing of the sort took place. Agricultural output fell in absolute value, the composition of agricultural output deteriorated, and many in the countryside and elsewhere starved.

It has been mistakenly believed by many Western Soviet specialists that collectivization and the predatory agricultural procurement system that was erected upon its foundation contributed positively to rapid industrialization in the Soviet Union during the 1930s. Growth model builders, employing this notion as an assumption, have given currency to a "Soviet-type growth model" in which the agricultural sector is "milked" to provide resources for industrialization. This is one of the classic unbalanced growth models. As it happens, however, again as Stalin would have put it, this model has "nothing in common" with the Soviet experience. Real resources flowed the other way (on a net basis) during the first Five-Year Plan.

In any event, for our purposes, the important fact is that Soviet agriculture was excluded from the income and money circuit of the Soviet economy by collectivization. Administrative measures replaced the market in most of its dealings, and central coercion, coupled with local resistance, led to a serious deterioration of agricultural capacity. Moreover, WWII ended the recovery of Soviet agriculture from the ravages of collectivization and drained it of all moveable capital and most of its young able-bodied males. Postwar reconstruction did not end the economic, social and political isolation of the agricultural sector, and the result was that, by 1953 when Stalin died, the sector was relatively (and not far from absolutely) more backward than it had been in 1928. This was the apogee in the Soviet unbalanced growth path, and from Stalin's death onward repeated attempts have been made to restore balance.

As Naum Jasny once wrote, "Collective farming was introduced and developed under such adverse conditions in the Soviet Union that it would have failed even if it were, per se, a perfectly sound undertaking." (p. 4) Stalin's heirs (most notably Khrushchev) at first merely sought to "improve" upon the Stalinist model for Soviet agriculture, and the years from 1953 through 1957 may be viewed as a true test of the viability of the institutions that had been created in the 1930s: the collective-farm with residual determination of farmer earnings, the MTS system, the four-track procurement system and the tiny private agricultural sector. Socialist legality was stressed in the setting and maintenance of delivery norms. Agricultural procurement prices were increased substantially. Farmer earnings, and particularly money earnings, increased significantly. Accounting and budgeting practices were introduced on the collective farm. The state farm sector was also enlarged as a result of an incredible expansion of cultivation of marginal lands in the remoter regions of the USSR. This was essentially a stop gap measure designed to increase total agricultural output rapidly, and it was undoubtedly made in the expectation that the reforms and regularization of the Stalinist model (for the collective farm sector) would begin to produce results soon enough to compensate for the greater variability of output in the new lands and for the fact that much of it could not remain in cultivation long. In any event, this attempt to make Stalin's model of socialist agriculture work failed to meet expectations, and it was overturned.

In 1958 the MTS system was abolished, and the old four-channel agricultural procurement system was also abandoned. Both of these changes substituted pecuniary relations for in-kind transactions. All taxes thereafter have been paid in money, and farms have been obliged to buy capital equipment and farm inputs from state agencies. Subsequently, collective farmers were guaranteed both minimum wages and access to pension systems. Brezhnev and Kosygin have continued this

process, but with even greater emphasis upon research and development, mechanization, the use of fertilizers, pesticides and herbicides, and, in general, upon measures designed to intensify Soviet agricultural production. The previous financial discrimination against the collective farm has been abandoned, farmer earnings have increased substantially and an increasing proportion has been paid out both in cash and on a regular monthly basis. In short, there is a new model of Soviet socialist agriculture, one that has been building since at least 1958.

Many of you have no doubt experienced the impression that other peoples' children grow more rapidly than one's own. I suspect that we who attempt to keep track of Soviet agriculture on a regular basis also tend to be fooled about the actual extent of change. The post-1958 model of Soviet socialist agriculture is very different from either previous model, although it displays features of each. The farm, whether collective or state, is very large (although the operational unit is much smaller and has remained about the same for a long time), and this is of course a reflection of the Stalinist model and of even more ancient Bolshevik mythology. But the economic context in which Soviet farms operate is essentially a (socialist) market environment. Dealings with farm workers, with the state procurement agencies, with state enterprises on both output and input sides are all carried out in pecuniary quasi-market terms. Finally, the differences between state and collective farms have been almost eliminated, and each type now cultivates about one-half of all arable land. The Soviet agricultural sector has been re-pecuniarized, which is of some significance in-and-of itself. However, it is more significant in terms of what it portends about Soviet policy and the policy makers' attitudes toward agriculture specifically and the economy more generally.

It is a real shock to return to and to read Stalin's last official pronouncements on Soviet agriculture in his Economic Problems of Socialism

in the USSR, which was published in 1952. Consider, for example, Stalin's remarks concerning the proposal by two well-known Soviet agricultural economists to sell the equipment of the MTS to the collective farms:

"The outcome would be, first, that the collective farms would become the owners of the basic instruments of production; that is, their status would be an exceptional one, such as is not shared by any other enterprise in our country....Such a status could only dig a deeper gulf between collective-farm property and public property, and would not bring us any nearer to communism (p. 94-5)
.....

The outcome would be, secondly, an extension of the sphere of operation of commodity circulation, because a gigantic quantity of instruments of agricultural production would come within its orbit. What do Comrades Saina and Venzher think -- is the extension of the sphere of commodity circulation calculated to promote our advance towards communism? Would it not be truer to say that our advance towards communism would only be retarded by it? (96)

Here we are then, little more than two decades later, and this traditional Bolshevik (and Marxist) animus toward commodity production and exchange has almost completely disappeared. Although still not as significant as during the NEP, markets, prices and other pecuniary institutions are playing more significant roles than at any time since the end of the 1920s. And, generally speaking, much less nonsense is written these days about agriculture than was the case only a decade or so ago.

CONCLUSIONS

What can we conclude from our examination of the various models that have evolved (or been imposed) upon the Soviet agricultural sector? There are, I believe, at least three lessons to be learned. First, and the most general and least specific to agricultural concerns, the Soviet experience in agriculture confirms their experience elsewhere in the economy, and that is that it is impossible to run a modern industrial economy without reliance in some substantial degree upon markets, money, prices and the other pecuniary institutions that evolved both prior to and during the "capitalist phase" of economic history. Second, and of relevance to policy rather than theory, it would seem wise to avoid another major institutional change in Soviet agriculture. An average rate of growth of agricultural output of 3 1/2% is acceptable performance, and the Soviet Union will simply have to put up with "high cost" production for the foreseeable future. Not only is it unlikely that a major institutional change would cause anything other than confusion and a slowdown in growth in the short run, it is also not clear just what changes could or should be made, within the feasible set, that would yield more rapid, less expensive growth in the longer run.

My third conclusion, and the main burden of my presentation, is directed to growth model builders, particularly to those who like to examine models that contain explicit agricultural and non-agricultural sectors. This is that what the Soviet experience shows is that unbalanced growth Soviet style, that is, the Stalinist model of socialist agriculture, was a failure. It failed in the short run to provide net resources for industrialization, and it has failed in the long run as well. The outcome of unbalanced growth in the Soviet Union was, quite simply, imbalance. Their experience also shows just how difficult it is to overcome the imbalance that was thus created, and especially when the imbalance worked to the disadvantage of the agricultural

sector. This is the main reason for the disappointing results of what has been, in total, a gigantic economic effort to modernize Soviet agricultural production. This is also the main reason for our puzzlement over the apparent ineffectiveness of what appear to be quite sensible and necessary organizational and other agricultural reforms.

Put differently, what makes the problems of Soviet agriculture so intractable is the relative backwardness of the sector, and, as I suggested earlier, the sector was relatively more backward in 1953, at Stalin's death, than it had been in 1928 on the eve of rapid industrialization and mass collectivization. Relative backwardness extended (and still extends) to all aspects of Soviet rural life, from the most private to the most public. One expects relative backwardness of an agricultural sector, and this kind of differential has always provided the main force propelling people out of agriculture into industrial occupations during the course of development. But the degree of backwardness reached in the Soviet experience far overreached the optimal, and recent sociological surveys of attitudes of the Soviet agricultural population reveal not only that the young want to leave for industrial occupations, but that their parents want them to do so as well. As an old woman kolkhoznik put it in one of Savchenko's short stories: "Everybody is attracted to the cities....Only old people and women are left [on the farm]....and after we die nobody will be left." The problem is primarily a human problem, a problem of morale as much as it is of education, skills and capital inputs.

What we in the West ought to learn from the Soviet experience is that it is time to lay to rest once and for all unbalanced growth models which involve increasing the relative backwardness of the agricultural sector. What Soviet policy makers ought to do is, I believe, to "muddle on," raising earnings, building infrastructure, and investing in people, hardware

and agricultural research. What the Bolsheviks have going for them is their belief in the existence of solutions. Hopefully they will have the patience to try to make the new model of Soviet socialist agriculture work.

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