# Chayanov and the Economics of the Russian Peasantry

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NUMBER 55

**WARWICK ECONOMIC RESEARCH PAPERS**

DEPARTMENT OF ECONOMICS

UNIVERSITY OF WARWICK
COVENTRY

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August, 1974

capital consumption. The family aims at 'a sufficient level of well-being in future years', and usually this will also equal the initial level. That means accepting,

> '-though this does not always correspond with everyday reality - that available income is divided according to the equilibrium of production and consumption evaluations or, more accurately, a desire to maintain a constant level of well-being.'(13)

As they stand, these models of resource allocation are formally static. However they can be used to generate two distinct models of an 'evolving' economy: the evolution of the individual farm within a given region, and the evolution of the agricultural region itself; these two models are supposed to define the types of inequality which may occur between peasants abd between regions. We shall consider them in turn.

## 2. Models of Agrarian Evolution

### Evolution of the farm

Let us start by taking a region with a given supply of land and labour and a given commodity price structure. In Chayanov's work this defines a regional organisation of production, i.e. a structure of activities rational for those factor proportions and product prices, which all farms will share. The factor which is dynamic at the microeconomic level is the growth of the individual family. The peasant family experiences a life-cycle starting with the marriage of the original nuclear couple, going on through child-bearing and rearing, the maturation of children and their splitting off the original family to start new families of their own elsewhere. Over this cycle, a definite shift occurs in the on-farm balance of supply and demand. In terms of our Models 1 and 2, first of all the MU curve shifts steadily to the right as new children are born and their mouths are added on at the family meal-time.

Later the MD curve follows it to the right and eventually catches up, as the working capacity of growing children begins to catch up with their consuming capacity and their hands are added to the family labour-force.[14] This cycle is set out in Table 1, with two variants for Models 1 and 2.

Table 1 - The Peasant family life-cycle

| | Year | No. in family | | Family income | Income per consumer | Sown area | Days per worker | |
|---|---|---|---|---|---|---|---|---|
| | | con-sumers | work-ers | | | | worked | idle |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| MODEL 1 | 1 | 2 | 2 | 200 | 100 | 2.0 | 100 | 265 |
| | 2 | 3 | 2 | 300 | 100 | 3.0 | 150 | 215 |
| | 3 | 4 | 2 | 400 | 100 | 4.0 | 200 | 165 |
| | 4 | 5 | 2 | 500 | 100 | 5.0 | 250 | 115 |
| | 5 | 6 | 2 | 600 | 100 | 6.0 | 300 | 65 |
| MODEL 2 | 1 | 2 | 2 | 200 | 100 | 2.0 | 100 | 265 |
| | 2 | 3 | 2 | 270 | 90 | 2.7 | 135 | 230 |
| | 3 | 4 | 2 | 320 | 80 | 3.2 | 160 | 205 |
| | 4 | 5 | 2 | 350 | 70 | 3.5 | 175 | 190 |
| | 5 | 6 | 2 | 360 | 60 | 3.6 | 180 | 185 |
| | ' | ' | ' | ' | ' | ' | ' | ' |
| | ' | ' | ' | ' | ' | ' | ' | ' |
| | 20 | 6 | 6 | 600 | 100 | 6.0 | 100 | 265 |

According to Model 1, over 5 years family size increases from two adults to two adults plus four children. By year 5 there are six consumers but still only two working adults (cols. 2, 3). However, the required family output is uniquely determined by the culturally fixed subsistence needs of the whole family; therefore total family income (col. 4) rises proportionally with family size, and income per head remains constant (col. 5). Similarly sown area (col. 6) and days worked per worker (col. 7) vary uniquely with family size in spite of the increasing disutility of labour.

In model 2 however, subsistence requirements are not fixed but variable, because of the downward-sloping marginal utility schedule. Since in our given region other things are equal, shifts to the left or right in the MU schedule are determined by the number of family consumers, while similar shifts of the MD schedule are determined by changes in the family labour force; since both marginal utility and disutility are variable with respect to income, the equilibrium is determined by the number of family consumers and of family workers simultaneously. Chayanov does this using their ratio (i.e. col. 2 divided by col. 3, the 'consumer-worker ratio') which I call the 'dependency ratio'. This generates the backward-sloping supply curve of labour - as family consumer demand rises with a constant number of family workers (cols. 2, 3) and therefore a rising dependency ratio, the supply of days actually worked (col. 7) and total family income (col. 4) also rise, but not by enough to maintain income per head (col. 5). Part of the income per head which Model 1 generates in the fifth year is now taken out in leisure, because of the rising marginal disutility of labour.

After a long period, say 20 years, all the children enter into full-time employment on the farm, the number of workers rises to equal the number of consumers, and the dependency ratio, income per head and days worked per worker are all restored to their initial values; only the farm is now three times as big as before.

The value of Model 2 as opposed to Model 1 is that it shows us a way of explaining inequalities of income per head, and of why some families work longer hours than others. The disadvantage of Model 1 is that it's very easily refuted, and indeed another focal point of statistical discovery in the investigations carried out from the 1870s onwards was establishing that in actual fact the distribution of land, wealth and income among peasant families living in the same village was indeed unequal. There were diehards,

of course. The Moscow budget statistician Pervushin is reported to have argued that it was not the living standards that were unequal; rather the methods of data collection, based on the faulty recollections of illiterate peasants, were unequal to the task.(15) For others such as Chelintsev the important point was not that subsistence levels were in theory uniform, but that they were fixed for each family, and for a whole area only in an average sense.(16) But to many it must have seemed absurd to go on talking about culturally fixed levels of subsistence, when levels of subsistence turned out to be highly variable over space and time. Many writers continued to adhere to the idea of fixed subsistence requirements; the discovery of inequality, however, gave the Marxist study of the village an entirely new impetus which surfaced in the course of the 1890s with works by I. Gurvich and Lenin. Chayanov's contribution was to provide a non-Marxist explanation of economic inequality. He rejected the idea of culturally fixed subsistence; he also rejected the idea that economic inequality was socially determined in its origins and irreversible in its consequences.(17)

The origins of inequality, he thought, were demographic. Inequalities of family income and farm size depended on family size as it rose and fell through the family life-cycle. Inequalities of income and land per head depended on the changing family composition, measured by the dependency ratio which also rose and fell through the family life-cycle. In consequence, inequality itself was neither reversible nor irreversible, but cyclical.(18) In conclusion, inequality within peasant society, far from showing the decomposition of peasant society into a rural bourgeoisie and rural working class, emphasised the purely peasant processes of a homogeneous family-based economy.

In this light we shall consider briefly some arguments and figures from a survey snalysed by Chayanov. This was a survey of wealth, income and expenditure on 101 farms in a district of Khar'kov province in 1910 (it was

published in 1915 and is certainly one of the classics of statistical literature before the revolution). Table 2 shows these 101 farms grouped by sown area per farm, one of the few indicators of economic activity which were both relatively unambiguous and which every census and survey however partial or incompetent could be relied on to produce; grouped, that is, according to standard practice.(19)

Chayanov's argument in relation to Table 2 can be roughly paraphrased into four main points:

(a) Farm size is correlated with family size (cols. 1, 2). Is this a causal relationship, or are both variables reflecting another causal factor?

(b) We know that sown area is not a given constant for the individual farm, because all farms can and do mobilise land at short notice through the short-term rented land market. Therefore sown area cannot be a determinant.

(c) Therefore family size and family growth are the independent variables: as the family grows, the farm takes in more land through short-term rent. The family labour force can exploit the increased sown area through increased capital investment and increased capital productivity. (see below).

Table 2 - Family size and sown area of 101 peasant farms of Starobel'sk district, Khar'kov province in 1910, grouped by sown area per farm.(20)

| Group | Sown area per farm, des.* | No. of farms | Average sown area, des.* | Number per family: | | | Dependency ratio (3)/(4) | Percentage of "young" families per group** |
|---|---|---|---|---|---|---|---|---|
| | | | | souls | consmrs | workers | | |
| | | | (1) | (2) | (3) | (4) | (5) | (6) |
| I | - | 11 | .02 | 4.73 | 3.22 | 2.55 | 1.29 | 36.4 |
| II | 0- 3.00 | 17 | 1.76 | 4.35 | 2.88 | 2.18 | 1.33 | 76.4 |
| III | 3.01- 7.50 | 26 | 5.56 | 6.28 | 4.13 | 2.82 | 1.48 | 38.5 |
| IV | 7.51-15.00 | 25 | 11.60 | 9.37 | 6.09 | 4.34 | 1.41 | 4.0 |
| V | 15.01- | 22 | 23.09 | 11.41 | 7.39 | 5.25 | 1.41 | - |
| Total | | 101 | | 7.66 | 5.01 | 3.57 | 1.40 | 27.7 |

* 1 desyatina = 2.7 acres.
** Families defined as "young" are composed of nuclear couples with children none of which is aged more than 17 years old.

(d) This means that we can see the families in the various strata I-V as being in various stages of the family life-cycle. Leaving aside group I, as farm size increases the percentage of "young" families in each stratum falls. Group II is composed of "young" families which have just split off from families in groups IV and V. Group III families are in the period of most overburdened growth, and have the highest dependency ratio (col. 5). Groups IV and V are composed of large, mature extended families on the point of fragmentation and decay.(21)

The dependency ratio assumes a crucial role in Chayanov's analysis because it determines inequalities of income per head. As the dependency ratio rises, output per worker is supposed to rise and income per head to fall. In table 3 we see the same 101 farms grouped by the degree of dependency embodied in the family structure. Here we see that expenditure per head falls only above the average value of the dependency ratio (col. 2) for all households taken together. Other figures not shown here also demonstrate this for each group of households when land sown per head is held constant.

Under this Table 3 Chayanov noted that expenditure per head appeared to be roughly indifferent to changes in the dependency ratio;(22) this in itself would appear to have been a setback for his theory (Model 2) as a predictive model. In fact, a closer look at Table 3 shows a perfect rank correlation between expenditure per head (col. 2), size of family (col. 3) and total net family income (col. 4). So perhaps one might conclude from this that family dependency was a relatively insignificant factor in economic inequality, and that farm size, family income and income per head are all related together and with other factors in much more important ways.

And in fact this study, like every other study in the history of Russian agrarian statistics, showed a systematic direct association between farm size, family size, land per head, wealth per head and income, savings and investment per head. Those associations which had have not already been illustrated are shown in Table 4, and are not substatially modified in

any other survey between 1870 and 1917. It was these inequalities which Lenists used to build up their theory of the capitalist differentiation of the peasantry and the causes of the growing rural labour and product markets.(23)

Table 3 - Income, expenditure and family size on 101 peasant farms of Starobel'sk district, Khar'kov province in 1910, grouped by family dependency.(24)

| Dependency ratio | Net disposable income per worker, roub. | Expenditure per consumer roub. | Number of consumers | Family net disposable income, roub. |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| 1.00-1.15 | 68.1 | 67.3 | 3.1 | 209 |
| 1.16-1.30 | 99.0 | 78.7 | 5.3 | 408 |
| 1.31-1.45 | 118.3 | 87.5 | 5.8 | 508 |
| 1.46-1.60 | 128.9 | 85.2 | 5.8 | 494 |
| 1.61- | 156.4 | 81.7 | 5.4 | 441 |

Table 4 - Income, expenditure and wealth per head on 101 peasant farms of Starobel'sk district, Khar'kov province in 1910, grouped by sown area per farm.(25)

| Group | Sown area per farm, des. | Sown area per head, des. | Agricult. capital* per head, roub. | Income per head, roub | | Savings** per head, roub. |
|---|---|---|---|---|---|---|
| | | | | from agricult. | total | |
| | | (1) | (2) | (3) | (4) | (5) |
| I | - | *** | 7.2 | 4.9 | 30.8 | -.5 |
| II | 0- 3.00 | .40 | 20.1 | 28.6 | 43.5 | 2.2 |
| III | 3.01- 7.50 | .89 | 49.0 | 45.8 | 56.2 | 7.7 |
| IV | 7.51-15.00 | 1.26 | 71.3 | 57.8 | 64.5 | 12.1 |
| V | 15.01- | 2.02 | 106.3 | 93.5 | 94.5 | 25.1 |

* Farm equipment and stock. Personal property is distributed somewhat less unequally than this, and buildings are distributed less unequally still.

** After valuation at local market prices of all goods produced and consumer in kind.

*** Negligible. These "farms" probably had small vegetable plots in the back yard, a couple of pigs, etc.

We can see the difficulties involved in the family life-cycle at a deeper level by looking at the question of complementary factors to labour. We start with the case of the young nuclear family about to start the process of farm and family expansion. We know (from materials such as those in Table 4) that these small 'young' families belong to the poorest stratum of peasant society. So how is the farm and family growth to be financed? Just at the moment when the growing family increase production most sharply - when several children have been born and none is yet old enough to work on the farm - the family labour resources are under the greatest strain, having to provide for increased consumption of the wife and children from the initial stock of land and capital appropriate for the support of a man and wife only. And increased consumer demand immediately conflicts with the increased investment required to bring family resources into balance with family requirements in the future. This family crisis, moreover, attacks families which are poorer, not richer than average.

Where do the extra supplies of land and capital come from? First we shall consider capital, then land. It was pointed out above that when Chayanov analysed savings decisions he used Model 1, not Model 2. This involved assuming on the peasants' behalf "a desire to maintain a constant level of well being."(26) If this was helpful in understanding consumption standards and savings decisions over the family life-cycle, then we would expect to find the small families with low dependency ratios having (a) the highest levels of income per head, and (b) the highest levels of savings per head. Families would use the early years of low dependency to save up for the period of child-rearing and family growth, when savings and the availability of resources would be most constrained. In fact we see that small farms have (a) the lowest levels of wealth, income and consumption, and (b) the lowest savings ratios, perhaps $\pm$ 5% compared with + 25% on the largest farms. So it is hard to see internal accumulation as a source of

complementary factors for the growth of small farms.

If the supply of capital on small farms is relatively restricted, we can then ask whether there was an flexibility in the productivity of existing capital. In the cited budget survey, Chayanov put forward a theory of "complex cooperation" (slozhnaya kooperatisiya). He suggested that as the family labour force grows in absolute size there is a large increase in the possibilities of raising the land-labour ratio:

> 'The powers of the worker who coordinates his labour with two or three other workers increase so much that they cannot be absorbed on the allotment area [alone] and allow the wide-spread utilisation of rent. The greater the number of workers united in one family, the wider is the possibility of applying complex cooperation, and the greater is the possibility of expanding the farm's own sown area beyond the limits of the allotment area.' (27).

This increase in the land-labour ratio is implicitly within the limits of any given activity, and is specifically independent of new capital formation and the realisation of internal economies of scale: (28) that is, the possibilities of increasing the land-labour ratio expand as the number of family workers increases and the capital-labour ratio falls. Consequently, it necessarily involves the substitution of labour or land for capital as well. This kind of factor substitution seems to have been a logical and even inherently necessary part of the explanation of how small poor families transform themselves into large wealthy families.

However, to assert that land may be substituted for capital immediately begs the question of land supplies to which we presently turn. To assert that labour may be substituted for capital within the limits of the activities engaged in by Russian peasants is to ignore the evidence that Russian peasants faced sharply diminishing short-run returns to labour

for any given activity.[29] There is no support for the existence of agricultural production functions of the type required for 'complex cooperation'; in fact, the theory of complex cooperation disappeared from Chayanov's work after 1924. In 'Peasant Farm Organisation' Chayanov simply noted that peasants in this situation developed 'greater energy'.[30]

Thus there is no satisfactory answer to the question of how peasant families expand their reproducible assets over the family life-cycle.

There are similar problems in explaining how peasants afford to rent land, as they mobilise resources for family growth. It was noted from the 1870's onwards that typically the rent paid by peasants for a hectare of arable land exceeded the net yield after all inputs and outputs had been valued at local market prices and wages. In other words. the return to labour on rented land was less than if the labour-time required to cultivate a hectare had been sold on the local labour market at the ruling wage.

These findings were used by Chayanov's school to show how bourgeois accounting techniques failed to understand peasant economy, since the peasant was aiming to maximise net utility in terms of annual consumption needs and annual labour, not to maximise the return per day worked. In fact this specific case does not square easily with the idea of maximum net utility, which would be fully consistent with switching marginal labour from the low return activity (farming rented land) to the high return activity (wage labour) - unless we revise the idea of utility and go back to Model 1 where the peasant is indifferent to marginal income

and to the cost of production of subsistence.(31) This in itself is another interesting indication of the way ideas of utility and subsistence become intertwined. But the important thing to note is perhaps that rent transactions were in themselves expensive. Moreover we know relatively small farms tended to face higher rents and lower yields on rented land than large farms.(32) Here we find another factor which must have inhibited the growth of small farms.

So far we have considered the constraints on small farm growth created by the conditions of on-farm agricultural production. It may be asked whether the possibilities facing small farming families outside their own agriculture may have allowed them to raise cash in handicrafts or wage-labour market to be ploughed back into the land. Firstly, it is true that small farms regularly invested a far greater proportion of their annual labour-time in off-farm work than large farms - 26% for group I of Chayanov's Starobel'sk study, falling steadily to less than 1% for group V.(33) In other words, poor farmers made up their income with wage and handicraft labour, attracted to these activities, according to Chayanov, by winter unemployment on the farm and relatively low returns per day worked on the farm itself.(34)

Secondly, the stratification patterns revealed by the income and wealth tables of budget studies like Chayanov's included off-farm incomes in their totals; thus, the inequalities shown in Tables 3 and 4 are those after off- farm incomes have been taken into account. Moreover the returns to off-farm labour must have been generally limited in a structural sense (the marginal return to labour was below the average and falling sharply), since the permanent rural wage-labour force was still relatively small: few peasants had specialised completely in off-farm work. In addition, the type of off-farm work available to poor peasants may have brought a lower

return per day worked than the work available to middle and especially rich, peasants. Thus the pattern of inequality in the labour market forges another link in the chain of restraints affecting small farm growth.(35)

It took Chayanov twelve years from the first formulation of the utilitarian labour-consumer balance to consider the role of savings and investment in the family life-cycle. In fact, as he pointed out four chapters into 'Peasant Farm Organisation', the whole preceding postulation and analysis of the family life-cycle went under the assumption that one may ignore changing capital and investment requirements.(36)

Evolution of the Region

The principal geographer of the organisation of production school was Chelintsev, and the others took their bearings from him - in this respect it would be more accurate to speak of Chelintsev's rather than Chayanov's school. Chelintsev was a Model 1 adherent, believing in culturally fixed subsistence requirements for his theory of demand well into the 1920's. In his consideration of the developing agricultural region, the dynamic factor is again population growth. We lift the assumptions that we made in studying the individual family life-cycle, i.e., a given regional population, land-labour ratio and price structure.

What happens as population grows and population density increases ? The answer is that labour must be substituted for land, to maintain peasant living standards. The economists of Chayanov's time believed in short-run fixed coefficients of production; some of them, like Chelintsev, believed that these coefficients were also fixed in the long-run. If this is so, then labour-intensity of production is defined by the structure of activities.

Therefore, labour can only be substituted for land by substituting labour-intensive activities for labour-extensive ones. As Chelintsev wrote,

> 'the decline of land abundance involves .... the necessary substitution of sectors and crops constantly towards the curtailment of the extensive ones and the expansion of the intensive ones.' (37)

Normally we think of activity substitution under these assumptions as having certain price conditions. These are illustrated in Table 5. If we range the set of possible activities according to their land-labour ratios (as in col. 1) then the peasants who want to substitute labour for land (raise the labour-land ratio) will choose their activities out of a list in which, as the labour requirement per hectare rises, the yield per hectare rises (col. 2) and the yield per day worked falls (col. 3). Any activity for which the yield per hectare is less than for the one above it, or for which the yield per day worked is less than the one below it, would not be an efficient choice. Given that such a list exists and is without limit, labour can be substituted

Table 5. Labour and output coefficients for a hectare of various crops.

| Crop | Man-days required per hectare | Value yield per hectare | Value yield per day worked |
|---|---|---|---|
| | (1) | (2) | (3) |
| Rye | 20 | 30 | 1.50 |
| Potatoes | 50 | 40 | .80 |
| Flax | 80 | 60 | .75 |

for land without limit. However, if the price structure is wrong, the list may be a finite one. If the regional economy, facing diminishing land supplies, comes to the end of the list, there are two possible solutions. We can alter the original terms of the model and assume that in the long-run capital can be substituted for land, so that long-run production coefficients are variable. Nevertheless, production coefficients may remain fixed ex post - because what we describe,in looking at the bottom end of the list of rational-choice activities, is what happens when the regional economy meets a price constraint. Low prices for labour-intensive products, through their income effects, can become savings constraints if the economy is poor enough initially. In such a situation the region may be unable to save enough to alter techniques of production. Consequently,a second solution may be defined: a region facing declining land supplies per head and price constraints on factor substitution will face underemployment and underdevelopment.

Chelintsev emphasised the theoretical possibility of price constraint,(38) but in practice he never used such a concept in his empirical work. Theoretically he was also able to cope with the possibility of price constraint by a neat conjectural trick. He argued that population density determines two things simultaneously: the factor-intensity of production, (i.e., the structure of activities), and the level and structure of effective demand for agricultural products - in such a way that demand and the regional price structure were always consistent with the desired activity structure.(39) Consequently each region exhibited a constantly shifting equilibrium in both product and factor markets, which precluded the analysis of surplus-population or underdevelopment. History's setbacks, he wrote, are marginal and temporary; the general thrust of history is progress (vsegda eshche vpered).(40)

The general picture of regions of Russia which we derive from

Chaints ev's work is as follows. Range the regions in order of increasing population density, and we find a logical sequence of increasing factor-intensity of production and a logical shift in the structure of activities from nomadic cattle-raising in the East and South-East, through the long fallow and then the three-field systems of the Trans-Volga and Central Russia to the beet and flax farms of the densely settled West and the intensive dairy and vegetable farms of the Northern industrial provinces. Since the population density of each region is steadily growing, each successive region shows the one behind it the image of its own future,(41)

At this point one can begin to pick out some common features of Chayanov's analysis of individual family farms and Chelintsev's analysis of agricultural regions. These features were sharply at variance with the developing Marxist social science.

Both the regional analysis and the analysis of the family life-cycle were based on a common statistical method: we take a cross-section of regions, or farms, and assume that they represent a chronological sequence as well as a statistical one. This requires certain additional assumptions that in practice weren't fulfilled - that each region faced a set of prices consistent with its need to intensify production and raise yields per hectare as population density increased; and that each farm faced returns consistent with its need to expand with family growth. However, different regions - and different farms - have different histories, which means that they start out relatively rich or poor. These different histories interact, which means that small farms are poor because large rich farms set the prices which constrain small farm growth. Similarly advanced regions engage in inter-regional and international trade at prices which cause backward regions to underdevelop. In this type of situation there is no guarantee that small

farms will actually evolve into large farms, or that regions of land-extensive cultivation can actually be transformed into regions of land-intensive cultivation. In Russia we see these phenomena compounded by the formation of labour-surplus in small farms and backward regions, and its partial diversion through local and migrant labour markets as a resource available for exploitation by the developing sectors of the agrarian and industrial economies. This raises further questions to which we now turn.

## 3. The Allocation of Labour and the Roots of Neopopulism

Here we find two types of theory of economic inequality. In one set of theories, economic inequality represents leads and lags in historical progress. Rich farms and advanced regions are the standard-bearers of the future, while poor farms and backward regions are the other ranks who follow up behind. In the other type of theory, some farms and regions are rich and advanced precisely because other farms and regions are poor and backward. Now it seems to me that the latter type of theory is definitely superior in explaining what actually happened in Russian agrarian history. But although this is an implied criticism of the organisation of production school theories, it is also important to ask a further question, which will tell us even more about these views; how was it that they were so influential, why is it that eminent and competent economists of our own day regard them as pioneers in the formulation of a correct theory of peasant economy ?

Normally one would show the strengths and weaknesses of a school by its performance in debate; that way, we could see how its representatives defended themselves. In this case it would be a difficult task. Members

of the school did not 'engage in debate', in print at least, even between themselves. Disagreements remained implicit, names were rarely mentioned; criticisms from any source were seldom acknowledged, or anwered. No doubt this sense of insulation reflected many hostile political pressures (in the last years 1927-1930 the pressures became overwhelming, the insulation collapsed and was followed, not by debate, but by the political capitulation of Chayanov, Chelintsev and Makarov). So rather than reconstruct an imaginary argument, I will simply make a few general remarks.

Firstly, Chayanov was the first Russian economist to build a micro-economic theory of the peasant economy. This in itself was a lasting contribution and a position of strength. Moreover, he achieved this position as one whose career was integrally linked with the progress of Russian agrarian statistics, and as one who utilised his access to a unique store of empirical data about the peasant economy.

Secondly, Chayanov's theoretical work was rooted deeply in the real relations of the Russian peasant economy, in the following sense. Low and uncertainly rising living standards can certainly provide the basis for a working assumption involving the operation of culturally determined subsistence aspirations - for the short period, or long period, or in an average sense - particularly when such aspirations are in many ways embodied in the peasant culture. Low and unstable rates of saving can similarly uphold the idea of a low or zero utility attached by peasants to investment. Where the family life-cycle is concerned, there was indeed substantial social mobility within the village, sometimes (but not necessarily systematically) related to the generation and regeneration of individual families. In the same way, apparent regularities can be observed in the economic contrast between the productive systems and populations of different

regions. And all these were in many ways expressed in that most dangerous guide, the contemporary common sense.

The differences between the real relations and the theoretical relations proposed by Chayanov and his school are not always so difficult to see. Easily the most complex question, however, is that of the allocation of labour between on-farm work, off-farm hired work and idleness; moreover it is a particularly crucial question. For the neopopulists it directly involved the question of the labour-consumer balance and the assumption that the rural labour market is insignificant; for the Marxists it involved the question of rural surplus-population or labour-surplus, the growth of the labour market, of migrant labour and of capitalist relations in agriculture.

At the heart of Chayanov's work lies the idea of the peasant farm as a fundamental unit of economy, a form which is self-defining and self-perpetuating - like feudalism, capitalism and socialism it is capable of constantly reproducing itself. The defining feature of peasant economy was the absence of a labour market - not the absence of cash crops or of markets in general, but the fact that the peasant economy was operated by non-wage family labour on the family farm: this family labour received not its marginal product but its average net product. Nor was the idea of fixed subsistence requirements necessarily involved in the definition, although they often became compounded. The crucial condition for the stable mainfestation of normal peasant behaviour was the absence of a labour market, and the operation of the family economy by family labour.

Marxists did not essentially dissent from this as a matter of definition; there is no detectable difference between Chayanov's notion and the Marxist-Leninist notion of the direct producer who owns the means

Table 6 - Hired labour-time and participation in the labour market of 101 peasant farms of Starobel'sk district, Khar'kov province in 1910, grouped by farm size. (*) (43)

| Des. sown per farm | Number of farms | Hired labour-time as a percentage of total man-days worked on the farm | Percentage of farms in each stratum | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Hiring labour: | | | Providing labour : | | | | Hiring or providing labour |
| | | | Day-labour | Season labour | Total | Day-labour | Agricultural labour | Migrant labour | Total | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| - | 11 | 1.2 | 18.2 | - | 18.2 | 18.2 | 81.8 | 63.6 | 91.0 | 100.0 |
| .01-3.00 | 17 | .6 | 17.6 | - | 17.6 | 17.6 | 52.9 | 23.5 | 52.9 | 70.6 |
| 3.01-7.50 | 26 | 1.7 | 15.4 | 15.4 | 23.0 | 7.7 | 38.4 | 23.1 | 57.7 | 69.3 |
| 7.51-15.00 | 25 | 6.7 | 36.0 | 36.0 | 52.0 | - | 24.0 | 20.0 | 36.0 | 68.0 |
| 15.01 - ∞ | 22 | 9.3 | 36.4 | 54.5 | 77.3 | 4.6 | 9.0 | - | 13.7 | 86.3 |
| Total | 101 | 5.5 | 25.8 | 24.8 | 40.6 | 7.9 | 35.6 | 22.8 | 45.6 | 76.2 |

(*) Byudzhety krest'yan Starobel'skgo uezda, p. 16 for cols. 1 & 2. Cols, 3 - 10 are calculated from ibid., 'Tablitsy', pp. 3,5,6,8.

small peasant labour on small farms. Conversely, rich peasants face labour-scarcity.

This is consequently a theory of underemployment. However, the labour-consumer balance is also a theory of employment and leisure. Table 1 (col. 8) showed how the balance of employment and idleness varies over the family life-cycle; it differs from the Marxist theory at two points. Firstly, in Chayanov's Model 2 idleness is concentrated among the smallest and largest farms, and no family is necessarily fully employed. Secondly, it is a theory of leisure-preference interacting with consumer needs - there is an axiomatic assumption that idle labour is voluntarily unemployed. In Chelintsev's words the peasant works to that margin 'beyond which the peasant farm does not want to proceed.' (44)

Modern economists will probably be familiar with the argument of writers like Myrdal, who suggests that underemployment can be regarded as involuntary, (a) when the constraints within which employment choices are made bear more heavily on the most needy (when small peasants do not work because, in conditions of capital scarcity, the marginal productivity of labour is declining sharply, and when they cannot save or accumulate because they are already very poor) - and (b) when the structural transformation of the economy necessary to provide accumulation and employment is beyond the power of poor peasants in their individual labour market situations.(45) Under these conditions the underemployment of poor peasants can be seen as involuntary.

The problem arises when we look at the actual distribution of idel labour-time in the peasant economy. Virtually all the data we possess are imputed rather than directly measured, and are therefore sufficiently

problematic for exact figures to be worth little without extensive qualification.(46) But few studies provide any basis for asserting that idle labour was concentrated among poor farms and poor regions - typically the imputations yielded large reserves of labour in all farms and regions. This is also true of the Starobel'sk sample.(47) While on-farm employment per man is highly sensitive to the size of the whole farm, it typically expands at the expense of contracting the family's employment in handicrafts and hired work, leaving a roughly indifferent or fluctuating total.(48) Therefore, because the on-farm agricultural labour-surplus and agricultural incomes are more unequally distributed than total unemployment and total incomes, the labour market appears as a means of redistribution in favour of the smallest farms.(49)

This argument obscures various important considerations, and contains an element of truth. Firstly, conventional estimates of unemployed labour-time leave out of account the different productivities of employed labour. The productivity per day worked in both on-farm and off-farm activities seems to have been much higher on large than small farms.(50) Consequently, the meaning of idle labour is liable to reflect a different choice on large and small farms: involuntary on the latter, but reflecting leisure-preference on the former. In fact Marxists of the 1920's argued that it is simply reflected a contradiction of underdeveloped agrarian capitalism; most families were still peasant families, and few rich ones had yet liberated themselves from the necessity of manual labour. But to the extent that this had begun, idle labour-time necessarily appeared in rich peasant families as leisure-preference,(51). It was simply that in a retarded context the division of labour between capitalists and workers remained incomplete.

Secondly, Chayanov's theory held in view an element of the economic reality - for rich peasants leisure-preference remained a valid principle; moreover the labour market did provide an outlet for the labour-surplus of poor peasants created in product, land and capital markets, and peasants clearly entered the labour market in rational expectation of gain.(52)

To summarise this section, it can be said that for all its faults, Chayanov's theory of the peasant farm was based on many real phenomena of underdevelopment: low rates of consumption and saving, the prevalence of unemployed labour-power, its redistribution through the labour-market. It failed, however, to be a theory of underdevelopment itself, of the origins of these phenomena, and of the relations between farms and regions as a whole. It was based on 'fictitious averages' and marginal irregularities rather than systematic tendencies. The theory of farm organisation failed to notethe correlation of labour market participation with ex post poverty, even in the shallow labour market in Starobel'sk district on the edge of one of the most backward parts of European Russia. The theory of regional organisation failed to note the fact the the poorest farms of this district (Table 6, col. 8) contributed so heavily to the annual flood of migrant labour from the northern black-soil belt to the industrial North and the grain-exporting South.

## 4. Conclusions

We shall now try to make a brief assessment of the strengths of Chayanov's theory, firstly taking the theory of voluntary unemployment back to the labour-consumer balance and his theory of demand in economic behaviour. The whole concept of wants, needs and utility exercised an

extraordinary fascination over Chayanov. Defining labour-surplus as voluntary unemployment meant implying that peasants ate and worked as much as they wanted. Marxists objected that this was an ideological mask for famine, disease and scarcity. On the other hand, it's true that utilitarian man does what he chooses to do. I think Chayanov was troubled by the idea that one can't measure wants indpendently of the behaviours that are directed towards want satisfaction (one can't measure the demand for bread separately from the effective demand for bread). So it is difficult to test the suggestion that peasants eat as much as they want, except in a way that guarantees its validation.

For example, Engel's law states that food is a more immediate want than clothes. Therefore at low income levels a greater proportion of income will be spent on food than at high income levels. Chayanov wanted to test this for the Russian peasant economy. His procedure involved the conversion of income and food consumption values into marginal utility values according to a cardinalist formula, in order to prove a version of Engel's law itself translated into marginal utility terms.(53) Thus we now know that Russian peasants observed Engel's law, but only after many pages of a pointless translation of the argument to utility and back again; well - it was obviously not 'pointless' to Chayanov, but was rather symptomatic of his desire to find some measure of ex ante need to set up against the modified form of effective demand imposed by social reality.

The further point of this seems to me as follows. The labour-consumer balance is a theory of demand constructed from an individualist point of view - from the point of view of one man. However, in the economy, there are other men. This has two consequences: firstly, the social scientists, standing outside the peasantry which they try to analyse,

can't use the labour-consumer balance to say whether or to what extent ex ante needs are satisfied, because they can only observe actual consumption. Secondly, the labour-consumer balance couldn't grasp the consequences for the individual peasant that he was not the only person in the economy, and faced price and cost structures set largely by other people - it couldn't grasp the difference between ex ante needs and effective demands and the way that society intervenes in the mediation between the two. The labour-consumer balance could, however, take sides in the contemporary battle of ideas about what the needs of peasant agriculture really were.

The way that the subsistence theory (Model 1) does this is perhaps obvious. Those who used it were trying to prove something about the peasant 'way of life' - that peasants received 'to each according to his needs' and that rural society operated according to a law of subsistence, not the law of value. Moreover, if the peasant economy ensured that peasants actually achieved their subsistence requirements, and this was what the peasants wanted, then there was no need to nationalise, socialise, municipalise or collectivise it. Everything was already for the best.

But since it could actually be proved that peasant society was unequal, a new theory was required which Chayanov provided. In this theory everyone achieves what they want, only more or less rather than absolutely. And in the long run, and at various other points where the statistics appeared to refute him, he reverted to the subsistence theory. Subsistence requirements, instead of being culturally fixed and uniform, were culturally variable. Subsistence requirements were identified with the level of consumption actually achieved; thus it was assumed that in the long run peasants sought to maintain the distribution of consumption currently achieved. In this way Chayanov's utility theory perhaps also fulfilled a defensive role as

regards the poverty and social structure of underdevelopment.

It would be a mistake to see Chayanov's ideas as simply utopian or based on conditions different from those which he sought to describe. Like Chayanov and his Marxist critics, I would insist on the contemporary origins of his work in many real aspects and problems of resource allocation and change in the Russian peasantry. It is no accident that, for a crucial decade of Soviet history, the revolutionary period and early NEP, Chayanov and his colleagues were the only people working on these problems, gathering data, analysing and publishing them; involving themselves in the organisational problems of the cooperative movements, the early sovkhozy and the supply system of agricultural products.

Their work may be described as a systematic selection of the agricultural reality with which they were so closely involved. It was a selection of reality, rather than a comprehension of the whole, in that it selected real tendencies of the peasant economy but presented them incoherently, in such a way that their real relation was obscured. This selection was systematic in that it was directed towards the formulation of an abstract model of 'peasant economy' and some derived, highly concrete, political proposals - the possibility of cooperative modernisation of peasant agriculture, which could draw all the productive forces of the village into a strategy of economic development which would be both mass based and free of class antagonisms. It was the advocacy of this alternative which bound Chayanov's fate to that of NEP.

Footnotes

This paper is based on work done for my Theories of Peasant Economy, Oxford University D.Phil. Thesis, 1974. I should like to thank the Economic History Seminar, Cambridge University, and Dr. C. H. Feinstein of Clare College, Cambridge, for comments and advice on earlier versions.

(1) 'Predvaritel'nyi spisok chlenov obshcheplanovoi komissii pri STO (kak material dlya obsuzhdeniya) 17.II [1921]', in Leninsky sbornik, t. XX, M. 1932, p.24. Mr. Stephen Wheatcroft of the Centre for Russian and East European Studies, University of Birmingham drew this to my attention.

(2) On Chayanov's life see Basile Kerblay, 'A. V. Chayanov: Life, Career, Works', in A. V. Chayanov, The Theory of Peasant Economy, ed. and introd. by Danierl Thorner, Basile Kerblay and R. E. F. Smith, Homewood, III. 1966; see also Naum Jasny, Soviet Economists of the Twenties, Names to be Remembered, Cambridge, 1972, pp. 200-203.

(3) L. N. Litoshenko, Evolyutsiya i progress krest'yanskogo khozyaistva, M. 1923, pp. 4-8.

(4) A. V. Chayanov, The Theory of Peasant Economy, containing 'Peasant Farm Organisation' - an English translation of his Organizatsiya krest'yanskogo khozyaistva, M. 1925 and a short and a short article, 'On the Theory of Non-Capitalist Economic Systems', translated from the German. This was followed a year later by A. V. Cajanov, Oeuvres choisis, Vols. I-VIII, ed. and introd. by Basile Kerblay, Paris-The Hague 1967, containing reproductions in the original Russian of a whole range of Chayanov's major works between 1915 and 1929. Where we refer below to works reproduced in the Oeuvres choisis, all details are given first as for the original Russian editions. A further work of Chayanov is shortly to be published in English translation under the title of Peasant Cooperation, edited by Isaac Guelfat.

(5) See for example well-meant reviews of The Theory of Peasant Economy by Colin Clark in Soviet Studies, October 1967, and Evsey Domar in American Economic Review, June 1968. See also James R. Millar, 'A Reformulation of A. V. Chayanov's Theory of the Peasant Economy', in Economic Development and Cultural Change, January 1970.

(6) A. V. Chayanov, Len i drugie kul'tury v organizationnom plane krest'yanskogo khozyaistva nechernozemnoi Rossii, vyp. I, Volokolamsky uezd, M. 1912, pp. VII, X; see also N. P. Makarov, Krest'yanskoe khozyaistvo i ego evolyutsiya, M. 1920, pp. 37-38, 78.

(7) A. V. Chayanov, 'Peasant Farm Organisation', pp. 44-45.

(8) A. V. Chelintsev , Teoretichsekie osnovaniya krest'yanskogo khozyaistva, Khar'kov 1918, p.8 . He goes on to say that consumption levels are sensitive to windfalls, (mistaken expectations). Elsewhere he writes that they are sensitive in the long run to changing levels of culture; see ibid., p. 164. For Chayanov's formulation see his Len i drugie kul'tury, vyp. I, p. XIV.

(9) A. V. Chayanov, Len i drugie kul'tury, vyp. II, Smolenskaya guberniya, M. 1913, pp. VII-IX; see also his 'Peasant Farm Organisation', pp. 79-89.

(10) A. V. Chayanov, 'Peasant Farm Organisation', p. 80

(11) Ibid., p. 131.

(12) A. N. Chelintsev, Teoreticheskie osnovaniya, p. 125.

(13) A. V. Chayanov, 'Peasant Farm Organisation', p.218.

(14) This model first appears in Byudzhety krest'yan Starobel'skgo uezda, introd. by A. V. Chayanov, Khar'kov 1915 (reproduced in Oeuvres choisis, Vol. II), p.4; see also A. V. Chayanov, 'Peasant Farm Organisation', pp. 57-58.

(15) A. V. Chayanov, Len i drugie kul'tury, vyp. II, pp. XVIII-XIX.

(16) A. N. Chelintsev, Teoreticheskie osnovaniya, pp. 8.

(17) A. V. Chayanov, 'Peasant Farm Organisation', pp. 245-255; see also his 'O differentsiatsii krest'yanskgo khozyaistva', in Puti sel'skogo khozyaistva, 1927 No.5, pp. 112-114, 119.

(18) In spite of the arguments below as to why there could have been no such thing as a life-cycle of the family farm, there is much evidence to show that there was substantial socio-economic mobility within the Russian village; this evidence has usually been taken to prove that the family life-cycle really happened. See A. V. Chayanov, 'Peasant Farm Organisation', pp. 67-68, 246-248; Basile Kerblay, 'Chayanov and the Theory of the Peasantry as a Specific Type of Economy', in Teodor Shanin, ed., Peasants and Peasant Societies, Harmondsworth 1971; Theodor Shanin, The Awkward Class, Oxford, 1972. In a later discussion paper I hope to argue that this interpretation of the statistics is demonstrably incorrect.

(19) For our purposes sown area can be considered as a useful indicator of economic activity, as a proxy for income and wealth, but not of course as the determinant. Again for our purposes it can be taken as physically homogeneous (an important reason why it was so commonly used).

(20) Byudzhety krest'yan Starobel'skgo euzda, pp. 10, 13.

(21) Ibid., pp. 10-13.

(22) Ibid., p. 18.

(23) The Classic work is V. I. Lenin, 'The Development of Capitalism in Russia', in his Collected Works, 4th ed., Vol. 3, M., London 1964, especially Chapters II and IV. It was first published in 1899, and the translation cited is of the 2nd edition of 1906.

(24) Byudzhety krest'yan Starobel'skogo uezda, pp. 9, 18.

(25) Ibid., pp. 10, 13, 18, 121.

(26) A. V. Chayanov, 'Peasant Farm Organisation', p. 218.

(27) Byudzhety krest'yan Starobel'skogo uezda, p. 12.

(28) Ibid., pp. 12, 15.

(29) The evidence on this point is wide-ranging, although for the most part indirect. Firstly, it is evident that most economists of the time believed in short-run (if not long-run) fixed labour coefficients of production in any given activity. A special case of this may be found in an alternative economic model which Chayanov offers is 'Peasant Farm Organisation', p. 91, based on the assumptions of linear theory and applicable to all forms of economy, (i.e., a general model of allocation). Secondly, a simple model based on linear assumptions (fixed coefficients of production) and incorporating resource and minimum consumption constraints yields the prediction that at various points in the economy specific forms of capital and labour-time will be under-employed. If the minimum consumption constraint is operative, then production coefficients which are fixed in the short-run will remain fixed for the long-run as well, since the economy is not capable of accumulating new capital. In this case the various types of underemployment will become secular. All these predictions are observed in the Russian peasant economy.

(30) A. V. Chayanov, 'Peasant Farm Organisation', p. 78.

(31) The statistics are summarised in A. M. Anfimov, Zemel'naya arenda v Rossii v nachale XX veka, M. 1961, pp. 149-155; additional materials are found in A. V. Chayanov, 'Peasant Farm Organisation', p.236. One way of explaining discrepant rents and yields is the possibility that (a) local average wage rates failed to reflect declining marginal returns to labour in the labour market, at the same time as (b) recorded yields of rented lands underestimated the true marginal returns to cultivating rented lands, because rented non-allotment land brought with it external economies: rights of way, or the restoration of balance in holdings deprived of meadows, woodlands or water-sources in the settlement of 1861.

(32) A. M. Anfimov, Zemel'naya arenda, pp. 152, 155, 160.

(33) Byudzhety krest'yan Starobel'skogo uezda, pp. 88, 90.

(34) A. V. Chayanov, 'Peasant Farm Organisation', p. 107.

(35) Byudzhety krest'yan Starobel'skogo uezda, pp. 88, 90, 121.

(36) A. V. Chayanov, 'Peasant Farm Organisation', p. 210.

(37) A. N. Chelintsev, Russkoe sel'skoe khozyaistvo pered revolyutsiei, 2nd. ed., M. 1928, pp. 13-16.

(38) Ibid., pp. 17-18.

(39) A. N. Chelintsev, Ocherki po sel'sko-khozyaistvennoi ekonomii, t. III, Sel'sko-khozyaistvennye raiony Evropeiskoi Rossii, kak stadii sel'sko-khozyaistvennoi evolyutsii, M.1910, pp. 7-9; see also his Teoreticheskie osnovaniya, pp. 51-63.

(40) A. N. Chelintsev, Sel'sko-khozyaistvennye raiony, p. 24.

(41) Ibid., p. 7; see also A. N. Chelintsev, Teoreticheskie osnovaniya, p. 14.

(42) Byudzhety krest'yan Starobel'skogo uezda, pp. 52-53.

(43) Given on page 30 under (*).

(44) A. N. Chelintsev, Teoreticheskie osnovaniya, p. 126.

(45) Gunnar Myrdal, Asian Drama, Vol. III, N.Y. 1968, pp. 2044-2054.

(46) The major studies are summarised and discussed in Pavel Maslov, Perenaselenie russkoi derevni, M. - L. 1930, pp. 17-52.

(47) Byudzhety krest'yan Starobel'skogo uezda, pp. 88-90.

(48) As the Starobel'sk sample shows. For a Vologda sample see A. V. Chayanov, 'Peasant Farm Organisation', p. 181.

(49) Ibid., pp. 40, 181.

(50) Again this is indicated by the Starobel'sk figures; but since these are derived from imputed labour-times it hardly seems worth quoting them.

(51) Pavel Maslov, Perenaselenie, pp. 57-63; see also A. Libkind, Agrarnoe perenaselenie i kollektivizatsiya derevni, M. 1931, pp. 147-149.

(52) Hence the progressive significance of the labour market, breaking down and ameliorating the bonded position of many peasants, for the contemporary Marxists; see V. I. Lenin, 'The Development of Capitalism in Russia', pp. 248-250.

(53) A. V. Chayanov, Ocherki po ekonomike trudovogo sel'skogo khozyaistva, 2nd. ed. M: 1924 (reproduced in Oeuvres choisis Vol. IV), pp. 20-47.