



# Consumption in A Socialist Economy

The Soviet Industrialisation  
Experience, 1929-37

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**CONCLUSIONS**

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## Conclusions

We are now in a position to bring together the different parts of this study and then pass on to an overall assessment and evaluation of the Soviet industrialisation strategy. In the second part of this chapter, we shall confront some of the main issues in the literature that have given rise to a considerable amount of controversy regarding the overall evaluation of the Soviet industrialisation experience.<sup>1</sup>

### 8.1 A Summing Up

We began by pointing out that the main issues involved in the problem of extensive growth were first posed by Feldman and Preobrazhensky. Models of growth dealing with the problem of the behaviour of consumption try and make explicit the nature of the constraints noted by Preobrazhensky (i.e. a surplus from agriculture which is a necessary but not a sufficient condition for growth), and Feldman who pointed out that saving would have to take a particular form which would reflect itself in the production of capital goods. In our brief survey of the literature in chapter 1, we noted that most of the models provided only a partial insight into the problem since the behaviour of consumption was examined with only one constraint binding at any point of time — i.e. the rate of growth of the economy was constrained either by the inability of the agricultural sector to provide the requisite surplus (the consumption goods bottleneck) or by the weak capital base of the economy (the investment goods bottleneck). What was

1. This would not be a survey of the literature in any sense; we shall merely touch upon some of the main issues in the debate regarding the overall strategy of Soviet development.

needed was a model which would take into account the simultaneous existence of the two bottlenecks and then explicitly examine the behaviour of consumption<sup>2</sup> in the non agricultural sector.

An attempt to develop such a model was made in chapter 2, under the assumption of surplus labour, non-shiftable capital stock, no foreign trade, and raw materials being provided by the sectors themselves. The composite real wage was split into two components: the non agricultural component (in terms of mcgs) and in terms of food. The model in chapter 2 was concerned with the determination of the first component of the real wage and it was shown that changes in the real wage depended on the following policy choices: the fraction of net investment devoted to the mcg sector ( $\lambda_0$ ) and changes in the labour-capital ratio ( $\theta$ ) which in turn depended on the rate of growth of new construction projects over the plan period and the technical form of investment in the non agricultural sector.

In chapter 3 the agricultural sector was explicitly introduced into the analysis and it was first of all argued that the relations between the agricultural and non agricultural sectors could not be viewed as merely technical problems. Insofar as the agricultural sector was based on the private ownership of the means of production, the non agricultural sector (characterised by the social ownership of the means of production) was faced with two problems which had to be solved simultaneously: to prevent the development of capitalist relations of production in agriculture and to extract 'sufficient' surpluses from agriculture in the form of food, raw materials and labour power. The required increase in food surplus depended upon the rate of growth of non agricultural employment (e.g. if employment rose by 50% over a five year plan period, food surpluses would have to increase by the same amount to keep the real wage constant). It was then shown that ambitious plan variants would generate larger increases in non agricultural employment. The conventional methods of extracting

2. Behaviour of consumption included both changes in consumption per worker (i.e. the real wage) and urban per capita consumption, though the main emphasis in this study has been on the former.

the surplus—direct and indirect taxation, wooing the peasantry, were found to be unsatisfactory, uncertain or involved significant reductions in investment in the capital goods sector which therefore meant lower rates of growth of non agricultural output. Thus, if the planners were interested in pushing through ambitious plan variants, some degree of coercion was necessary on the agricultural sector unless the planners were prepared to make very optimistic assumption regarding increase in agricultural output in the 'short period'.

In chapter 4 we examined the relevance of the model to the Soviet experience with respect to the crucial assumptions of 'no foreign trade' and 'raw materials being provided by the sectors themselves'. The former assumption did not affect the underlying basis of the model—foreign trade allowed a direct transformation of food (mainly grain exports) into machines for the capital goods sector. Thus the role of foreign trade was to reinforce the gigantic domestic investment effort of the IFYP. The assumption of raw materials was, however, not validated by the actual experience of the IFYP during which the output of nearly every branch of the mcg sector showed a decline because of a shortage of raw materials. In fact, at the start of the planning period the Soviet planners explicitly pointed out that the binding constraint on the output of mcgs was raw materials and not capital capacity. Thus a major modification was required in the model for the IFYP, since in chapter 2 the growth of output of mcgs was related to changes in capital stock, whereas the modification required that changes in outputs be related to changes in inputs. This modification gave the planners one more degree of freedom by reducing the number of policy choices in the model—the crucial policy choice was now between investment in agriculture ( $\lambda_a$ ) and investment in non agriculture ( $1-\lambda_a$ ), in contrast to the earlier situation when the allocation of investment between the consumption and investment sectors within the non agricultural sector was an additional policy choice. In such a situation  $\lambda_a$  could be kept at the lowest possible level—a policy which was in fact carried out (and planned for) during the IFYP.

In the second part of chapter 4 we related the theoretical

policy choices affecting the changes in the labour-capital ratio ( $\theta$ ) to the actual experience during the I & 2FYP, pointing out the sharp contrast between the 'extensive' and 'intensive phases of 'extensive growth'. The IFYP was the 'extensive phase' of 'extensive growth' during which the proportionate rate of growth  $\theta$  (owing to a sharp increase in the share of new construction and the use of labour intensive techniques in the construction sector) contributed to a further decline in real wages. The 2FYP was the 'intensive phase' of 'extensive growth' during which the proportionate rate of change of  $\theta$  (owing to a marked drop in construction activity and the use of capital intensive techniques in different branches of the non agricultural sector) contributed to an increase in real wages. In chapter 5 we examined the forms and methods by which the surplus product of agriculture was appropriated. It was also argued that the drive for rapid industrialisation meant that surpluses from agriculture would have to increase by very large amounts, and that the surpluses generated during the NEP period would not be sufficient for this purpose. This coupled with the grain crisis led to the collectivisation of agriculture. Despite considerable losses, the collectivisation drive contributed significantly towards industrialisation by providing sufficient surpluses of food (with the exception of meat and dairy products) which, however, could not prevent a sharp drop in the real wage. During the 2FYP, the surpluses extracted contributed to raising both the urban real wages and urban per capita consumption.

In chapter 6 we presented the results of the model which showed a sharp decline in real wages during the IFYP, an increase during the 2FYP, and an overall decline over the whole period 1929-1937. Urban per capita consumption also declined slightly during the IFYP but the increase in the 2FYP allowed a moderate increase over the period 1929—1937.

Finally, in chapter 7 we examined the wider question whether there existed alternative consumption paths which would allow a less drastic decline in real wages. It was shown that the minimal and optimal variants of the IFYP did not constitute realistic alternatives and even the minimal variant

would involve substantial declines in real wages unless one was prepared to accept the heroic assumptions embodied in the plan regarding the increases in agricultural output. There were elements that could have helped to cushion the fall in real wages but their effect would not have been very significant. It was also argued that Bukharin's and Preobrazhensky's strategy did not constitute realistic or viable alternatives towards the end of the 20's.

Thus one is forced to conclude that substantial declines in real wages were inevitable given the objective of industrialisation even at a pace less rapid than the actual, and that the broad policies pursued by the Soviet planners to achieve this objective made logical sense. Since this conclusion is far from being uncontroversial, we now proceed to discuss some of the objections that have been raised against such a point of view.

### 8.2 The Soviet Industrialisation Strategy : An Evaluation

Perhaps the most clearly formulated critique of the Soviet industrialisation strategy has been put forward in what can be referred to as the Erlich-Lewin view. The views of Erlich are expressed clearly in the following passage :

'sweeping collectivisation with its shattering impact on living standards, centralisation pushed to the extreme and attempts to impose on the economy a rate of growth defying basic human and technological constraints added up to a peculiar sort of "socialism" and a not very efficient way to increase the productive potential of the economy'.<sup>3</sup> An almost identical point of view has been put forward by Lewin when he says : 'the process of industrialisation as carried out by the Soviet authorities entailed an enormous wastage of human and material resources. This inevitably led to a fall in living standards and further strained an already critical situation. The failure of the plan to improve labour productivity and reduce costs led to an increased demand for manpower which

3. See Erlich : 'Development strategy and planning : the Soviet experience' in M. Millikan (ed.) : *National Economic Planning* Columbia, 1967 p. 267.

far exceeded the provisions of the plan. On the agricultural front the plan failed utterly. Agricultural production including industrial crops was on the downgrade'.<sup>4</sup> Thus Lewin concludes that, 'in practice the progress of industrialisation during the first five year plan was not the result of the five year plan or any other coherent plan. Such was the extent of confusion in the administration that it led amongst other things to the famous method of priority shock projects in which everything was sacrificed for the achievements of objectives which were judged to be of key importance. This method gave rise to excessive waste and was not planning in any sense of the term'.<sup>5</sup>

In the light of our analysis several objections can be raised against the above views, the most important of which are the following :

(i) The shattering impact on living standards was not merely a consequence of the excessive rate of industrialisation adopted during the actual course of the IFYP. In chapter 7 we showed that even industrialisation at a more reduced tempo (i.e. at a pace set by the minimal variant of the IFYP) would lead to substantial declines in living standards. During the actual course of the plan there were elements which contributed to a further decline in living standards, though their order of magnitude is nowhere as great as made out by Lewin and Erlich.

(ii) If one views the industrialisation strategy as merely having led to enormous waste and sacrifice, one overlooks the fact of the extremely rapid structural change that was brought about in the economy within a very short period of time—only nine years. The enormous increase in the capital base of the economy and the rapid reduction in unemployment must also be taken into account in evaluating the industrialisation drive. In fact, some degree of waste is inherent in a

4. Lewin : 'The immediate background to Soviet collectivization' *Soviet Studies*, 1965-66, vol. 17, no. 2, p. 184., 184

5. *ibid.*, p. 191., Lewin returns to the same theme in the symposium on Hunter's study where he points out that 'the first plan had produced a kind of self-perpetuating mechanism in which uncoordinated and quite arbitrary economic targets served to enlarge the scope of planning'. See Hunter (1) p. 287.

process of rapid industrialisation and it can be argued that this waste pales into insignificance when one considers the fact that policies were being pursued to achieve the basic objective of the IFYP—the rapid structural transformation of the Soviet economy<sup>6</sup>.

(iii) It is somewhat misleading to suggest that sweeping collectivisation had a shattering impact on living standards. As pointed out in chapter 7 the original IFYP was hopelessly unrealistic regarding the methods by which the surplus from agriculture could be extracted. Large surpluses were required and, in fact, obtained at least with respect to grain, potatoes, and vegetables to feed the non agricultural labour force.

(iv) The argument that the plan failed to improve labour productivity and reduce costs is true only to a very limited extent. As we saw in chapter 7, the decision to accelerate the construction of new investment projects and to raise industrial targets did lead to larger influxes of labour than would have been the case, if the minimal variant (or in this case, even if the optimal variant) had been adopted, but again the order of magnitude is nowhere as great as suggested by Lewin, who overlooks the fact that even the minimal variant of the plan had grossly underestimated the increase in non agricultural labour force.

We can now proceed to consider some of the more detailed arguments of Erlich and Lewin. Erlich points out that the dramatic underfulfilment of the output plans in the consumer goods area (i.e. mcgs) was due to the decision to cut investment in this sector during the course of the plan. This is not accurate since the planners had planned for a very low rate of investment in this sector because as we saw earlier, the binding constraint on the output of mcgs was raw materials and not capacity. Thus the cut in investment in 1930 and 1931 was

6. A somewhat similar point of view has been put forward by Dodge and Wilber, when they say, 'as in wartime, mistakes were made and there was a great deal of waste..... Yet despite the lack of balance and other shortcomings, significant progress in the transformation of the Soviet economy to a modern economy was made in a very brief period.' See Dodge and Wilber: 'The relevance of Soviet industrial experience'. *op. cit.*, p. 333.

due to unforeseen circumstances—a shortage of domestic and imported raw materials.

Erlich's observations that Soviet policy regarding factor proportions is 'bewildering in the extreme' because it involved on the one hand the biggest sizes of plant in industry entailing high capital labour ratios, and on the other, labour intensive processes in auxiliary process is, in fact, not bewildering at all but represents a very useful way of utilising labour and capital.<sup>7</sup> Also relevant in this connection is our theoretical argument in chapter 2.2 that the choice of a relatively capital intensive technology in major branches permits a higher rate of investment in the non agricultural sector. However, one agrees with Erlich when he says that 'the abrupt expansion in construction activity was bound to give rise not only to physical but also organisational bottlenecks which in turn resulted in the further lengthening of the gestation period.'<sup>8</sup> We noted earlier that the sharp increase in construction activity led to a further decline in real wages.

7. This feature is noted clearly by Dodge and Wilber when they point out that, Soviet development policy has been aware of the conflict between requirements of progress and factor endowment and has dealt with it by adopting in practice the strategy of a dual technology. On the one hand in the key industries they utilised to the maximum the advantages of borrowing the most advanced technologies, while at the same time, using the most primitive labour intensive methods in maintenance, intra plant transport, and other plant services. *ibid.*, p. 341.

8. Erlich, *op. cit.*, p. 244. The 'overinvestment' in 1930-1931 should not, however, lead us to accept the somewhat naive view that the Soviet planners departed from some 'optimum' rate of investment, since such a view immediately begs the question what the optimum rate of investment is. Fallénbuchl, puts forward the view that the Soviet planners departed from an 'optimum' rate of investment while admitting at the same time that this optimum rate will 'differ in different countries and at different periods. It probably depends on the level of current income, the volume of capital in existence, technology and various socio-economic factors.' It is thus obvious that the concept of an optimum rate of investment would not have helped the Soviet planners very much. Also relevant in this whole question is Granick's view that 'the building of new facilities could easily have been postponed for five years or more thus probably reducing greatly the amount of disinvestment resulting from rapid collectivisation. Obviously, if this had been done the resulting structural change would have been significantly slower. It

Lewin raises two additional questions regarding the Soviet strategy of development :

(a) 'given a more logical prices policy, a better developed cooperative movement, a more adequately maintained state and collective strata and a serious effort to provide agronomic assistance for the peasants how can one resist the conclusion that the grain crisis of 1928 and many of the disastrous developments (i.e. rapid collectivisation—emphasis added) that ensued might have been avoided or mitigated?'<sup>9</sup>

(b) 'if industrialisation had been carried out at a more moderate tempo fewer resources would have been swallowed up in the process, the resulting social strain would have been lessened. To pursue this line a little further, one might well be justified in asking whether if this had been the case the results would have been any less impressive?'<sup>10</sup>

The answer to the first part of (a) is fairly straightforward. There was in fact no logical price policy which would have brought forward the requisite surplus. In fact, even fairly modest plan variants (modest in relation to minimal variant of the plan) would be rendered unfeasible. This argument was elaborated in some detail in chapter 3.2. Regarding the role of a more developed cooperative movement, Schlesinger, in replying to Lewin points out that 'what was required was not some kind of cooperation in general but such a form of cooperation as might be conducive to the maximisation of

should also be noted that Granick misses the point when he says that despite the high investment level of the 2FYP, 'life seemed vastly improved over the 1930-1932 level.' See Granick: *Soviet Metal Fabricating and Economic Development*, Wisconsin, 1967, pp. 131-135., pp. 131-134. Life was 'vastly improved' precisely because of the efforts made during the IFYP—the use of the new equipment produced by the factories begun during the IFYP was now reducing the flow of labour into industry and construction. As we saw in ch. 4., the increase in the capital-labour ratio was an important factor in raising the level of real wages.

\*See Fallenbucht: 'Investment policy for economic development, *Canadian Journal of Economics and Political Science*, vol. XXIX, no. 1, 1963, pp. 37-38.

9. Lewin, *op. cit.*, p. 166.

10. *Ibid.*, p. 191.

output and, in particular, of marketed grain output<sup>11</sup> which should have been available at a time dictated by the needs of an industrialisation process<sup>12</sup> the speed of which was conditioned by the needs of defence.<sup>13</sup> The answer to the second of Lewin's question as to whether the results would have been less impressive if a more moderate tempo had been followed is obviously more difficult since it all depends on what one means by 'more moderate tempo' and 'less impressive results.' As we saw earlier, the minimal variant did represent a more moderate tempo but would nevertheless have involved considerable sacrifices. On the other hand, a considerably reduced tempo would involve less short term sacrifices but less impressive results in the form of slower structural changes.

More recently attempts have been made to evaluate the role of collectivisation in the light of the work of the Soviet economist Barsov. Since all the participants in the debate<sup>14</sup>

11. Schlesinger distinguishes clearly between the long and short term objective of collectivisation, when he says that, 'immediately after the harvest of 1929, resort was had to forced collectivisation as distinct from the earlier application of more civilized forms of encouragement which would have been sufficient to check the kulak's growth but would not yield a large increase in short term grain supplies! See Schlesinger: 'On the scope and necessity of error: some observations on Lewin's article' *Soviet Studies* vol. 17, no. 2, 1965-66, p. 354.

12. This answers the problem posed by Keep as follows: 'the Stalinist case largely rests upon the assumption that grain for the cities and export could only have been obtained by wholesale coercion and not by the fiscal restriction of the kulak and encouragement of voluntary cooperation envisaged by Bukharin: See Keep's comments on Schlesinger: 'A note on the context of early Soviet planning'. *Soviet Studies* vol. 16, no. 1, 1964-1965, p. 491. The answer is yes because fiscal restriction and Bukharin's cooperative solution could not solve the short term problem of the increase in food supplies. A point of view similar to Keep's was put forward by Karcz, who while correctly pointing out the blunders in price policy in 1927 puts far too much faith in the policy of manipulating prices to extract surpluses. As we noted earlier, such a method is highly uncertain. See Karcz: 'Thoughts on the grain problem. *op. cit.*, pp. 427-430.

13; Schlesinger: 'On the scope., *op. cit.*, p. 361.

14. See: Millar: 'Soviet rapid development and the agricultural surplus hypothesis' *Soviet Studies* vol. 22. no. 1, 1970-71, pp. 77-93 and also 'Mass Collectivisation and the contribution of Soviet agriculture to the IFYP: A Review article' *Slavic Review*. Dec 1974, pp. 750-766. and

rely on Barsov's results it is necessary to summarise his results very briefly. Barsov calculates the net surplus from agriculture (defined as the value of marketed agricultural output less the value of industrial consumer goods plus the value of machinery and implements going to the agricultural sector) in both 1913 world market prices and in 1928 prices. In 1913 prices the net surplus from agriculture is positive throughout the period,<sup>15</sup> but in 1928 prices the net surplus is negative.<sup>16</sup> The economic interpretation of the latter result is the following: the increase in the marketings of grain, potatoes, etc. was counterbalanced by the sharp fall in the marketings of meat and dairy products, whereas the flow of capital equipment to the agricultural sector increased substantially over the period. The net result was a decline in the net surplus of agriculture.

Nove: 'A Comment on James R. Millar's article, *Soviet Studies* 1970-71 vol 22, pp. 374-401 and the subsequent interchange between. Nove and Millar: *Soviet Studies* vol. 23 1971-72, pp. 302-306 and pp. 307-308 respectively.

15. Barsov gives the following figures in mln. rubles in 1913 world market prices for the flows from and to agriculture:

	1928	1929	1930	1931	1932
Flows from agriculture	3312.5	3727.5	4236.7	4359.5	3375.5
Flows into agriculture	1463.2	1786.6	1970.3	1903.0	1766.7

Source: Barsov: 'Selskoe Khozyaystvo istochniki., *op. cit.*, p. 78.

16. The following figures are for flows measured in 1928 prices. Barsov: *Balans op. cit.*, p. 112 and pp. 118-119.

	1928	1929	1930	1931	1932
Flows from agriculture	3166.5	3467.5	4049	4167	3217
Flows into agriculture	3951.4	4824.5	5322.5	5150.9	4768.2

17. Millar defends the use of 1928 prices, by pointing out that 'there is little reason to suppose that 1913 world market prices had any relevance to relative scarcities in the Soviet Union during 1928-1932 given the turbulent nature of the intervening historical period..... (See Miller 'Review article' *op. cit.*, p. 754 p.). Millar seems to suggest that 1928 prices were free from distortions—a questionable assumption. Incidentally, in 1928 the scissors blade was in favour of industry. According to Malafeev the trade indices were as follows: (1913=100)

	1927/28	1928/29
Agricultural Commodities	210.3	201.5
Industrial Goods	201.5	226.7

see Malafeev: *op. cit.*, p. 390.

Millar finds in Barsov's work an empirical justification of his own view that agriculture did not contribute to a net surplus.<sup>17</sup> He says, 'when due account is rendered for the destruction of capital stock of the agricultural sector in consequence of the peasants resistance to collectivisation, investment in MTS by the state..... a significantly large or expanding net flow out of the agricultural sector cannot be assumed with any confidence.<sup>18</sup> Thus Millar arrives at the following conclusions:

(a) collectivisation was a counterproductive strategy even in the short run—'whatever its merits may have been on other grounds, mass collectivisation of Soviet agriculture must be reckoned as an unmitigated economic disaster..... Agricultural output increased only marginally over the period of the 1930's while labour productivity yields, rural and urban consumption per capita declined.

(b) a continuation of the New Economic Policy of the 1920's would have permitted as rapid a rate of industrialisation with less cost to the urban as well as the rural population.<sup>19</sup>

There are several problems in Millar's analysis some of which have been noted implicitly by Nove:

(i) what is crucial in examining the role of collectivisation is not the volume of net surplus but the *physical form of the surplus—food* (in particular grain), and *labour power* both of which were vitally necessary given the pace of industrialisation. Nove also recognises this argument though somewhat less explicitly when he refers to Moshov's figures which show that the urban population 'made up for the catastrophic fall in livestock products by eating more bread and potatoes while the

Finally, on the whole question of prices, Nove's argument is relevant viz. that there is no set of meaningful prices to measure the surplus from agriculture. He says, 'the prices of 1930-1935 cease to be economic measures because of a combination of acute shortages, administrative allocation,..... etc. I am not at all sure of the relevance of the relative prices of bread and trousers at some earlier date (e.g. 1928—emphasis added) when both were freely purchasable.' see Nove: 'Reply to the reply' *op. cit.*, p. 308.

18. See Millar. 'Soviet rapid development', *op. cit.*, p. 89.

19. *Idem*: 'Review article', p. 764-766.

peasants ate less'<sup>20</sup>

(ii) Millar does not go into the question of the role of collectivisation in providing labour for the non agricultural sector, a feature pointed out by Nove when he says that 'industrialisation calls for a shift of labour out of agriculture and therefore also requires that the urban sector bear less than its share of forced savings—for otherwise the incentives to move would be weakened.'<sup>21</sup> In chapter 5 we also noted that labour was moved out of agriculture by reducing agricultural consumption relative to non agricultural consumption.<sup>22</sup> Millar merely asserts that, 'as an economic rationale for collectivisation the mobilisation of labour argument is without force since there is no evidence to suggest that the supply of labour was deficient prior to collectivisation. In the second place, it is clear that collectivisation encouraged an excessive off-farm flow of labour and population.'<sup>23</sup> Millar seems to be wrong on both counts: firstly, it is not simply a question of the supply of labour not being deficient; the crucial point is that the industrialisation programme necessitated a large increase in the volume of non agricultural force within a very short period of time. The entire increase in labour force could not come from the reserves of urban unemployed. In fact by the first quarter of 1930 most of the urban reserves had been absorbed, so that the labour force for the investment programme of 1930 and 1931 would have to come from the agricultural sector. Thus it is easy to see that Millar's second assertion—viz. that collectivization encouraged an excessive off-farm flow of labour is without substance since this 'excessive' flow was necessary to work on the construction sites which were increasing at a tremendous pace during 1930 and 1931.<sup>24</sup>

(iii) Millar's concept of net agricultural surplus as a measure

20. See Nove : 'A comment'. *op. cit.*, p. 397.

21. *ibid.*, p. 395.

22. See ch. 5.6

23. See Millar : 'Review article' footnote on p. 765.

24. It may be useful to note that for the IFYP as a whole, something like 60% of the increase in labour force came from the agricultural sector—see chapter 5.6.

of its contribution to the non agricultural sector is questionable in that it includes the following elements : (a) agricultural products for the consumption in the non agricultural sector (b) agricultural products for inventory accumulation (c) agricultural investment within the agricultural sector (e. g. investment in livestock, buildings, etc) less the flow of output (mcgs and capital equipment) into the agricultural sector. It is difficult to see in what sense term (c) contributes to surplus for the non agricultural sector. This leads Millar to the error of including 'the slaughter of livestock as part of the intersector flows'. As Nove points out, 'this figures prominently on the list of losses due to the policies pursued by the leadership but this is a different matter.'<sup>25</sup> Thus in the light of the above arguments Millar's conclusion that a continuation of NEP would have permitted as rapid a rate of industrialisation appears to be untenable.

Recently Ellman has joined the debate regarding the contribution of the peasantry and the working class to the process of Soviet industrialisation during the IFYP also in the light of Barsov's work.<sup>26</sup> Ellman's arguments can be summarised in terms of the following propositions : (a) the sign and size of the agricultural surplus in 1928-32 depends crucially on how it is defined and which units are used to measure it and in particular : measured in 1913 world market prices, the net agricultural surplus (NAS) was positive throughout the First Five Year Plan (IFYP), but in 1938 prices NAS is lower in each of the years 1929-32 than in 1928 and finally in terms of Marxian values NAS is positive throughout the IFYP but the 1929-32 average is again below the 1928 level.<sup>27</sup> The fact that the sign of the net inter-sectoral flows varies according to the prices used is 'simply an example of the so-called index number problem.'<sup>28</sup> (b) It follows from proposition (a) that 'there is no basis whatsoever for the view that the increase in investment during the IFYP was financed by an increase in the agricultural surplus'<sup>29</sup>

25. Nove : 'A Comment' *op. cit.*, p. 398

26. See Ellman : 'Did the agricultural surplus provide the resources for the increase in investment in the USSR during the First Five Year Plan?' *Economic Journal*, Dec. 1975, pp. 844-864.

27. *Ibid.*, p. 859.

28. *Ibid.*, p. 853-54.

29. *Ibid.*, p. 859.

(c) however, agriculture made an essential contribution to the development of the Soviet economy during the IFYP as it provided the industrial sphere with a greatly increased supply of basic wage goods—bread, potatoes and cabbage, and labour force.<sup>30</sup>

The main problems in Ellman's analysis are as follows: (i) the concept of net agricultural surplus (agriculture's net contribution to net investment in the economy as a whole) is misleading in analysing the contribution of agriculture to the process of Soviet industrialisation since the concept includes by definition the slaughter of livestock (which took place during mass collectivisation) as part of the inter-sector flows—thus here Ellman commits the same mistake as Millar. Here it should be pointed out that the concept of net agricultural industrialisation surplus is a more relevant measure and we find that according to Ellman's own calculations both in 1913 world market prices and in terms of marxian values the net agricultural industrialisation surplus (NAIS) is not only positive but the 1929-32 average is higher than the 1928 level.<sup>31</sup> However, in 1928 prices the NAIS is negative which arises owing to the fact that the scissors blade was in favour of industry in 1928/29 and the high existing prices of tractors, agricultural machinery, etc.<sup>32</sup>

30. *Ibid*, p. 858.

31. The concept of NAIS includes the agricultural export surplus plus industrial producer goods delivered to agriculture; alternatively it is the net agricultural surplus minus agricultural goods invested in agriculture. Ellman on p. 852 and p. 855 gives the following estimates for NAIS in mlns, of rubles:

	1928	1929	1930	1931	1932	Average for 1929-32
NAIS in 1913 world market prices	2.0	2.2	2.6	2.9	2.1	2.5
NAIS in terms of Marxian values	1.5	1.5	1.8	2.4	1.6	1.8

32. This feature is tacitly admitted by Millar when he says: 'much depends on the reliability of the wholesale prices index for the "means of production" which indicates constant prices on equipment and materials directly supplied by the state to Sovkhozoes, the MTS, and for state financed purchases only to kolkhozoes... one of the anonymous referees of this paper has called attention to the relatively high prices of tractors in 1928. He has also suggested that this index may have been applied inappropriately to construction costs and other elements where price controls

The propositions (b) and (c) of Ellman appear to be inconsistent since what is crucial in evaluating the contribution of collectivisation to industrialisation is that the surplus from agriculture was made available in a particular physical form—food (in particular grain) and labour power without which the 'increase in investment during the IFYP' could not have taken place (emphasis mine). Thus proposition (b) of Ellman appears to be untenable. In other words, an analysis which simply looks at the inter-sectoral flows during the period tends to miss out the crucial aspect regarding the physical form of the surplus from agriculture. A three sector model of the type developed in chapters 2 and 3 sheds more light on the dynamics of the growth process during the IFYP. To sum up the decision of mass collectivization was made in response to the logic of objective circumstances.<sup>33</sup>

Lastly, of course, there is the argument that Soviet industrialisation involved enormous human costs—terror, forced labour, famine, and lack of freedom. Hence it is argued that the Soviet experience provides only negative lessons especially for the underdeveloped countries of the world today. Firstly, one must

would have been much less effective than for equipment and materials. The latter criticism, if correct implies that the favourable change in the terms of trade for agriculture may be overstated and possibly substantially so—see Millar: 'Review article', note II, pp. 760-61.

33. A similar point of view has also been put forward by Carr who points out that 'it would be far-fetched to suggest that it was dogma which drove the politicians to act as they did.' Carr points to the following issues in the decision to collectivise: (i) while industry raced ahead (i.e. during the NEP period) 'agriculture was not advancing fast enough even to take account of the basic needs of a rising population', (ii) the incompatibility between the two forms of ownership—private agriculture and state owned industry—'nobody expected the compromise to last for ever... either nationalised industry through the medium of planning would succeed in subordinating the peasant economy to itself... or peasant resistance would prove impregnable and would compel state industry to operate within the framework of a market economy'... (iii) the grain crisis of 1927-28 which threatened the cities with near starvation (iv) the desire to develop agriculture's productive forces on a higher technical basis—'Lenin's dictum about the 100,000 tractors which could convert the peasant to Communism inspired the programme of mechanisation plus collectivisation'. See Carr: 'Revolution from above', *New Left Review*, no. 46, Nov.—Dec. 1967, pp. 17-27.

remember that when one is referring to human costs, no allowance is normally made for communal services—in particular the eradication of illiteracy and the provision of health care, both of which are crucial elements of 'consumption' for an underdeveloped country. As we noted in chapter 6, not only did 'material' urban per capita consumption increase during the period 1929-37, but that inclusion of communal consumption benefits would make the picture look even more favourable. Secondly, the problem of human costs, has to be considered in historical perspective. As Wilber points out 'the cost of capitalist development was high also—slavery, colonialism, genocide of native races and lack of freedom.'<sup>34</sup> What is perhaps more relevant from our point of view is to consider the human costs of backwardness, since the Soviet experience was basically an experiment to overcome the country's backwardness<sup>35</sup> within a very short period of time. The human cost involved in remaining backward is illustrated rather dramatically by Barrington—Moore with reference to India. Consider, for instance, the following illustration of backwardness with reference to a section of the agricultural population: 'among the outcastes who work as agricultural labourers in one district of Uttar Pradesh it has long been an accepted custom to eat grain collected from the excreta of animals and cleaned. No doubt this is an extreme example. Let it nevertheless stand as an instance of the

34. See Wilber: *The Soviet Model and Underdeveloped Countries*, N. Carolina, 1971, p. 131. He also notes that living standards declined during the period of industrialisation in England, USA and Japan. 'In addition, if the Soviet industrialisation period is compared to the similar period of 1869—99 in the United States the Soviet record appears better in a number of respects. In the Soviet Union much less child labour was used....., social security provisions were far better', etc..... *loc. cit.*

35. The fact of Russia's backwardness is illustrated very clearly in Stalin's speech to the First Conference of Industrial managers in 1931: 'One feature of the history of old Russia was the continual beatings she suffered because of her backwardness... all beat her because of backwardness, cultural backwardness, political backwardness, industrial backwardness, agricultural backwardness.....: (quoted in Mazour: *Soviet Economic-Development: Operation Outstrip*, Van Nostrand London, 1967, p. 129.)

degradation of civilised man under peaceful conditions.'<sup>36</sup> The above, is not to suggest that the underdeveloped countries of the world today can, or should simply imitate the Soviet pattern of development but merely to challenge the liberal western view which ignores the social costs of perpetual backwardness<sup>37</sup> and which fails to recognise the fact that the costs of remaining backward are far greater than the costs involved in the process of industrialisation. A wholesale imitation of the Soviet experience is clearly not possible in many of the underdeveloped countries of the world today—firstly, their initial conditions are much more unfavourable than the Soviet Union in 1928 (lower per capita income levels, agricultural output etc.)<sup>38</sup>, secondly the international pressures for rapid industrialisation have become much less urgent—there is no threat of 'capitalist encirclement'. It is the factor of 'capitalist encirclement' which ultimately clinches the argument for the actual pace of industrialisation in the Soviet Union. 'There is no doubt that in those crucial years the situation was conceived, as in 1917 Lenin had conceived it, in terms very similar to a military strategy, with its single-minded concentration on a strategic objective, on a crucial timing and a crucial line of thrust. In such a situation the rules and habits of normal continuity are rudely broken and economic targets lose their character of cold-prediction (if they can ever be that entirely) and assume an evocative role. When we add to this the sense of urgency aroused by the sudden recrudescence of the war-danger we can appreciate

36. Barrington-Moore Jr.: *Social Origins of Dictatorship and Democracy*, London 1967, p. 369, Wilber illustrates the costs of backwardness with respect to China before 1949 thus: '50 per cent of Chinese mortality was directly or indirectly caused by chronic malnutrition and some four million persons died every year as a result of contamination by human excrement'. Wilber *op. cit.*, p. 118.

37. See for instance, the views of Montas: 'The Soviet model and the underdeveloped areas' in Sulber (ed): *Study of the Soviet Economy* Indiana 1961, pp. 57-72. and Seton: 'Asia, Africa and the Soviet Model', *Survey*, Jan.—March 1960, pp. 38—45.

38. See in this connection, Hoeffding: 'State planning and forced industrialisation' *Problems of Communism*. Nov.—Dec. 1959, pp. 38—47.

better the temper of the years when Soviet economy seemed to stake all on beating the clock and to take risks which seemed to defy the dictates of reason<sup>39</sup>.

'During the period of industrialisation of the country (under threat of capitalist encirclement-emphasis added) the Soviet working class, the entire Soviet people spared neither effort, nor resources, and made sacrifices to drag the country out of its backwardness.<sup>40</sup> In retrospect one can appreciate the Soviet industrialisation drive 'as one of those acts of faith and courage without which history is not made'.<sup>41</sup>

39. See Dobb: *Soviet Economic Development Since 1917* Routledge 1966, p. 244.

40. Malafeev: *op. cit.*, p. 174.

41. Dobb. *loc. cit.*,

## Statistical Appendices

### Introduction

In these appendices we deal with the estimates of the various parameters in the model and with numerical calculations too long to be given in the main text. The parameters of the model are :

(i) the  $\lambda_s$  — i.e.  $\lambda_a$ ,  $\lambda_c$  and  $\lambda_i$  — the fractions of investment devoted to the agricultural sector, mcg sector, and the investment sector. We need estimates only for  $\lambda_a$  and  $\lambda_c$  since

$$\lambda_a + \lambda_c + \lambda_i = 1$$

Appendices A and A2 deal with the estimates for  $\lambda_a$  and  $\lambda_c$  respectively.

(ii)  $b_i$  — the average output-capital ratio of the investment sector. This is discussed in Appendix B.

(iii) Estimates for  $\mu$  : the ratio of the capital stock in the investment sector to capital stock in the mcg sector, are given in Appendix C.

(iv) Estimates for L (i.e. the non agricultural labour force) are given in Appendix E.

(v) Estimates for  $\theta$  (the labour-capital ratio in the non agricultural sector) are discussed in Appendix F.

The actual increase in the output of mcgs for the period 1929-1932, and 1934-1937 is calculated in Appendix D. Empirical studies relating to the course of real wages and per capita consumption are discussed in Appendix G.

Appendices H, H<sub>2</sub>, I, J and K deal with the values of  $\lambda_a$ ,  $\lambda_c$ ,  $b_i$ ,  $\mu$  and  $\theta$  as planned for in the minimal and optimal variants of the IFYP.

Details relating to the planned time phasing of new construction projects for the IFYP are discussed in Appendix L.

Finally, Appendices M and N deal with the calculation of