On the alternative statistics of G. Khanin - economist

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Various alternative estimates of rates of economic growth in the former Soviet Union (FSU) have become widely known in the economic literature. Their appearance was a natural response to the inadequate quality and deliberate falsifications of Soviet official statistics, which aimed to overstate the rates of Soviet economic growth in order to satisfy the governing elite. For this reason the official rates indeed need recalculation. But existing Russian alternative estimates of these rates are still far from perfection, sometimes are not well grounded and need careful verification.

The best reputation among alternative Russian estimates has been gained by those of G. Khanin, an economist from Novosibirsk. They have attracted attention in Russia and especially in the West owing to the long period reviewed (since 1928) and the considerable number of indicators recalculated. At the same time, in contrast to the majority of Russian 'recalculators' (such as B. Bolotin, A. Alekseev, K. Valtukh and B. Lavrovsky) Khanin pays great attention to description of his estimation methods, although the character of his methodological approach has often given rise to objections and the style of his descriptions is very unclear.

For this reason these estimates encountered a first wave of criticism in Russia at the end of the 1980s and the beginning of the 1990s.(1) However, this criticism was inconclusive and sometimes bore the stamp of loyalty to socialism, the CPSU and even the CSO (Central Statistical Office). At the same time Khanin's alternative estimates were considered by some scholars in the West as soundly based and definitive.(2) Now it is time for calm and more serious examination of this problem.

The statistical methodology

Khanin carried out alternative estimates of the following macroeconomic indicators of the FSU: industrial output, construction, national income and GNP, labour productivity, fixed capital, material-output ratio, capital-output ratio and index of wholesale prices. The most detailed methods of calculation of these indicators were formulated in his 1991 book.(3) For calculation of these indicators he used several methods and every time he tells us that all the approaches gave very close results, which seems strange.

Industry

Khanin described six methods of calculation of industrial production indexes of the FSU. In the first method he used a sample of physical products on the basis of Soviet official statistics. This method was widely adopted and used by many Western sovietologists, starting from C. Clark and finishing with the CIA. Khanin used data on 104 products (in contrast to several hundred in the CIA case) for 1955, 1960, 1965, 1970, 1974 and 1975 (only for 1955-1975) and did not include in his basket military output, high-tech (all these data were top secret in Soviet statistics) or even apparel. Changes in the quality of products produced were not taken into account. The index for the oil refining industry, for example, was calculated on the basis of data on oil production. This must surely have biased the final results.

Khanin calculated individual indexes for each product in physical units and weighted them by branch shares in employment or in the wage fund (labour intensity, according to his notion) for 1960, 1966 and 1968. He used very doubtful Soviet official data on employment and used weights of remote years. For some branches (especially for machinery) he used not branch shares but

average wholesale prices for sample products as weights. This must also have biased the final results.

All of these factors, together with the absence of some important branches, gave a negative bias to Khanin's estimates. Nevertheless, his calculation by this 'first method' are the most reliable of all his six approaches. As Khanin mentioned, 'such an approach is widely used in the statistics of many capitalist countries. It has sufficiently solid economic foundation'.(4)

However, the problem is not only in these factors. In his publications Khanin provided an index of industrial production by the USSR for the period 1928-1987, but methodologically explained only the 1955-1975 period. No information is given on the sample products and weights for 1928-1955 and 1975-1987. How did he calculate indexes for these sub-periods? It is quite clear that for the prewar period his product basket was very poor, and the use of weights of remote years of the 1955-1975 period for the prewar period also biased the final aggregate result. For the period since 1975 the whole set of new products produced by Soviet industry was omitted from his sample.

The second method is based on measurement of the changes in production costs for 'compatible' output of machinery for 1967-1972. As 'compatible' the author considered only the part of industrial output that was produced after the third year since the beginning of production, which had passed the stage of assimilation. However, the author does not mention even the sources for his calculations and does not show how he distinguished compatible output or products from incompatible ones. So the whole of new output ('incompatible') is excluded from his calculations.

I think this approach is absolutely wrong and cannot produce reliable results. Frequently he decided finally to define the change in production costs on the basis of the relationship between official data on average wages and salaries and labour productivity growth. So it seems that Khanin thinks the Soviet CSO data on these two indexes merit more trust than the official index of industrial output, even though the index of labour productivity is directly linked with the latter.

Yet the problem is not only that this approach assumed a constant material-output ratio in Soviet industry, which did not reflect reality. Khanin also considers that 'the trend of labour productivity in industry as a whole would be the same as in machinery'.(5) That is quite wrong, in my view.

The third method is very similar to the previous one. Here the author also proposes a constant material intensity coefficient (not including amortisation even). This is in contradiction to reality, as already mentioned. Soviet reality was that material-output ratios were increasing practically all the time. In fact Khanin seems aware of this trend when he writes of 'the extremely slow decline of material costs per unit of output'.(6) In contrast to the second method, in his third method the author used the official data from input-output tables for 1959, 1966 and 1972. However, it is not clear how data on material costs from input-output tables in current prices can be used for estimation of changes in material costs in constant prices. As in the previous method, only changes in wages and salaries were taken into consideration. The manner of explanation of this method is especially unclear and uncertain. The author does not even indicate the branches and periods of time for which he is using this method, nor does he indicate the sources and figures on which his calculations are based. Finally, I cannot understand how he could obtain extremely secret input-output tables in the remote Siberian town of Kysil: I could not obtain these data in Moscow owing to the simple fact that I did not have the special permission needed for access to this information.

All these facts show that this 'method' is very strange and I consider it absolutely wrong.

The fourth method is an attempt to estimate rates of Soviet industrial growth on the basis of official data on electricity consumption per worker in the USSR, with an adjustment for the ratio of the electricity consumption per worker and labour productivity indexes in American industry. This is also a very strange assumption. Khanin claims that 'the relationship between the growth of labour productivity and electricity consumption per worker in the USSR and USA is approximately the same. It is defined mainly by the technological character of this relationship, its dependence upon the concrete level of the technology of production, which is directly linked with the level of electricity consumption per worker'.(7)

This thesis is unfounded. A considerable part of electricity consumption in industry is not correlated with labour productivity growth in general, because it is used for technological needs, not electrical motors in the production apparatus, which is the only part that is linked with labour productivity and the process of replacement of labour by capital equipment. Moreover, the share of electricity consumption used for technological needs in the USA is larger than that in the USSR, owing to the higher technological level of industrial production, and production of more sophisticated, varied and high-quality products.

In contrast to the USA, a very big part of manpower in Soviet industry was concentrated not in the main production shops but in auxiliary production, for example, in repair, instrument, foundry and other shops, where manual labour prevailed and electricity consumption was not linked to the technological level of production in general or to labour productivity. In the USA most manpower, as a rule, is involved in the main specialised production, and there are direct links with the levels of production technology and labour productivity. Furthermore, the efficiency of electricity consumption in Soviet industry was usually lower in the USA, where there is much greater concern with energy saving.

Thus I believe one cannot use the American coefficients for Soviet industry and this method must be considered unacceptable. But I suspect that Khanin used this very simple method for the 1922-1955 and 1975-1987 sub-periods for which he had no sample of products for his first method.

Also very puzzling is his fifth method - estimating Soviet industrial production growth by comparing fulfilment of planned targets in physical terms with value targets. Khanin considers that the ratio between the two sets of target fulfilments can be used for retrospective estimates of rates of industrial growth, in order to make adjustments to official branch indexes.

This approach is in contradiction to reality. It is known that as a rule the plans in the FSU for targets in money terms were fulfilled and even overfulfilled but plans for output in physical terms were not fulfilled. In general there was no stability in the ratios of industrial production growth in value and in physical terms. However, Khanin took these ratios as a basis and did not even weight the product indexes but used, as he writes, 'arithmetical average percentage plan fulfilment for all products included in the plan'.(8) All of these problems make the fifth method unacceptable too.

Khanin's sixth method deals with machinery only and only for 1967-1972. He used the ratio of production costs of exported products to revenue from exports 'in world prices'. The calculation was carried out for 13 machinery products. Unfortunately, he again does not give the reader the sources of data or illustrations of his calculations. How, for example, is it possible to use the ratios of production costs and revenue for only 13 exported products to measure the whole machinery output, the majority of which consisted of military goods?

So, from Khanin's six methods we must reject five as invalid (and the first method partially too). Essentially, they reflect the author's aspiration to create an impression of a fundamental study. The

manner of writing is unclear, statistical illustrations of his arguments and calculations are lacking as a rule, and there is no analysis of sources or the initial official data used. There is no convincing evidence in the Appendix to his book.

The only exception is his first method: normal calculations for 1955-1975. But his estimates for 1928-1955 and 1975-1987 are not explained and are unfounded. They are no more than an intuitive, expert opinion.

For all industry Khanin gives the results in Table 1 compared with the official data. Khanin's alternative estimates are never less than half the official figures. They do not differ much from Western sovietologists' results (produced much earlier) for one period but are much higher for the other periods. For example, Nutter estimates 1928-1940 annual average industrial growth to be 9.9% (Khanin 10.9% for 1928-1941), for 1940-1955 4.6% (Khanin 8.7% for 1951-1955).(9)

However, paradoxically, Khanin did not have sufficient scientific grounds for his alternative estimates and yet obtained quite probable results. The reason for this is not any secret but only the author's intuition. Many of us, former Soviet economists and statisticians, who knew the estimates of Western sovietologists and understood approximately how the USSR CSO overstated the official rates of industrial growth mentally made the normal adjustment to the official annual average rates of growth, reducing them by approximately half.

Construction

The alternative rates of growth of construction output are usually defined by the rates of growth of production or consumption of construction materials. However, Khanin rejected such approaches because 'the estimations carried out have shown that the index on this base substantially exceeds indexes calculated by other methods'.(10) One would therefore have expected the author to analyse and compare the results of this method with 'other' methods; he does not do that. Nevertheless, he used three methods for estimating alternative rates of growth of Soviet construction.

TABLE 1

COMPARISON OF KHANIN'S AVERAGE ANNUAL RATE OF GROWTH IN SOVIET INDUSTRY WITH OFFICIAL FIGURES (%)

Period	Official	Khanin	Official/Khanin
1928-1941	17.0	10.9	1.6
1951-1955	13.1	8.7	1.5
1956-1960	10.3	8.3	1.2
1961-1965	8.6	7.0	1.2
1966-1970	8.5	4.5	1.9
1971-1975	7.4	4.5	1.6
1976-1980	4.4	3.0	1.5

Source: Khanin, 1991, p. 146.

The first method consists in use of data on the trend of costs of housing construction (allowing for quality changes) and the share of housing construction in the total construction output. The data on costs of housing construction he took from the official CSO statistics and a special book on housing construction in Moscow(!) for the period 1956-1975. However, he adjusted these data substantially by changes in costs of production in industry, by a method that is very subjective and unclear. As a result of this his alternative index of housing construction increased to 1.5 times the initial level in 1955-1960, decreased 1.7 times in 1960-1965, increased 1.3 times in 1965-1970 and decreased

again 1.1 times in 1970-1975(11) (see Table 2). To me it is impossible to accept such a strange index.

The aggregate index for construction is wrong also, owing to many very doubtful and artificial estimates and assumptions. Especially crude and strange are his use of official value data, calculation of industrial construction on the basis of data on housing construction, assumptions for quality adjustments, treatment of rural housing construction, etc.

His second method of estimation of the growth of Soviet construction output was based on the official data on growth of production capacities in the material sphere of the economy and on facilities in the services sphere. As weights Khanin used either the shares of sectors of the national economy in total construction or in capital formation - it is not clear which, because he refers to both at different places in his book.(12) The calculation was worked out for 1951-1975. For the period up to 1965 he took only 18-22 projects in industry, for the later period 40. For the other sectors he has used fewer projects (six for the non-productive sphere, two for agriculture and none in transport, communications, culture, science, art, etc.).(13) The assumption that rates of construction growth coincided with rates of production capacity growth is very questionable.

TABLE 2

KHANIN'S INDEX OF HOUSING CONSTRUCTION

1955	100.0	1970	116.0
1960	150.0	1975	109.0
1965	91.0		

Source: Khanin, 1991, p. 254.

His third method is no better than the second one. Here he used indicators of plan fulfilment in putting into production the capacities and projects in the non-productive sphere. He took 33 indicators in kind for the whole national economy, the calculations being carried out for 1956-1960 and 1971-1975.(14) As weights he used the shares of industrial branches and sectors in the national economy in capital formation. But as I have already noted, the official data on plan fulfilment were not a reliable basis for this estimation and the number of products sampled was very small (much less than in the works of Western sovietologists and the CIA). Calculations for 1928-1955 and 1975-1987, and for 1961-1970, are also again lacking.

As a whole one cannot consider Khanin's estimations of Soviet construction output growth scientific and reliable. Nevertheless, he proceeded to draw conclusions even about the rate of growth of national income and GDP in the FSU. He writes: 'The definition of alternative estimates of economic indicators for industry and construction opens the possibility for calculation of such estimates for macroeconomic indicators'.(15)

National income

For calculations of Soviet national income Khanin again used three methods. First, on the basis of his alternative indexes for industry and construction and official indexes for agriculture and transport (in Khanin's book both are explained very unclearly), he derived an index of gross social product in the material sphere. As weights he used not gross output in the material sphere but data on the payroll fund.(16) He thus did not include in his estimates trade, communications, services and net income from abroad.

Then he calculated the index of national income growth with the help of an index of material intensity (applied to his index of gross social product). The changes in material intensity he estimated by a very dubious method (see below). And his results, showing a decrease in the material-output ratio in 1956-1960, 1961-1965 and 1971-1975, are also very doubtful.(17)

No statistical data and no illustrations are given for the practical implementation of this first method, and no details on the estimates. So I conclude that Khanin has no valid estimate of Soviet national income by this method.

For his second method, he takes the CSO official ratios of USSR/USA national income and data on US national income growth (from American official statistics) to derive rates of growth for Soviet national income.(18) This approach is extremely crude, indirect and not based on any independent calculations. No Western sovietologist used it, and it is very strange that Khanin should use such a doubtful procedure.

In his third method, Khanin calculated the growth of the separate components of Soviet national income utilised, i.e. consumption and accumulation. However, he did not carry out independent estimations for food, apparel, consumer durable goods and investment output, all of which enter national expenditure. It is known that in the former USSR consumption was calculated at retail prices but accumulation at wholesale prices. Khanin simply used his indexes for separate industrial branches which he calculated for his industrial growth and construction indexes. So, for estimation of consumption growth he used, as he writes, 'the growth of agricultural output, light and food industries, and for estimation of accumulation fund growth the rates of growth of construction and investment machinery and so on'.(19)

This approach is not a direct one, and is very dubious. The sources for data on national income produced and utilised are quite different, the classification of branches or items for the two indicators are very different also and the real data on the growth of production and consumption for the same products do not coincide.

As a whole I conclude that Khanin does not have valid estimates of Soviet national income growth. It is no accident that in his main book (1991) he did not give a normal table on Soviet national income growth. Instead of this he engaged in general reasoning on growth rates.(20) He provided one table with very unclear estimates of Soviet national income growth in constant prices and another table in current prices.(21)

Nevertheless, in 1988, in the leading Soviet party journal, Kommunist, Khanin published his estimates of rates of growth of Soviet national income for 1928-1987, or for a longer period than in the 1991 book, where there are methodological descriptions of all the rates for 1928-1980,(22) camouflaged by artificial linking of average annual rates of different periods since 1941 to the base of the 1928-1941 period(!) Why did Khanin not include estimates for 1980-1987 in his book? Maybe he has no estimates for 1980-1987 in general. I am sure that he has no real estimates for 1928-1955.

The essence again is that instead of serious scientific substantiation and solid statistical work with detailed and direct calculations of the growth of the main components of Soviet national income, the author gives his intuitive figures, based on indirect and very simple estimates, which are far from normal scientific principles. In Table 3 I compare his estimates with those of the CIA and the CSO.

According to Khanin, the average annual increase in Soviet national income for 1928-1987 reached 3.3%, compared with 3.9% according to the CIA and 7.9% according to the CSO. As for industry, his estimates again seem very close to reality on the basis of common sense and normal intuition of well-read intellectual people who lived in the country at that period. However, they are not valid from the position of statistics as a science or from the point of view of normal methodological requirements for professional statistical work (detailed and clear description of sources, methods and the process of calculations), which allow readers to check and replicate the results.

GNP and GDP

In Khanin's 1991 book there are no rates of GNP and GDP (including services) for the FSU, nor any estimate or methodological description of these indicators - in spite of the fact that these indicators are the main reflection of macroeconomic trends, the main mirror of changes in the final results of the annual economic activity of a country.

TABLE 3

ANNUAL COMPOUND GROWTH RATES OF SOVIET REAL NATIONAL INCOME, 1928-1987 (%)

	Khanin	CIA	CSO
1928-1940	3.2(a)	6.1	14.6
1940-1950	1.6(b)	2.0	5.1
1928-1950	2.5	4.2	9.5
1950-1960	7.2	5.2	10.6
1960-1965	4.4	4.8	6.2
1965-1970	4.1	4.9	7.7
1970-1975	3.2	3.0	5.7
1975-1980	1.0	1.9	4.2
1980-1985	0.6	1.8	3.5
1985-1987	2.0	2.7	3.0
1950-1987	3.8	3.8	6.6
1928-1987	3.3	3.9	7.9

(a) 1928-1941
(b) 1941-1950

Sources: First column from G. Khanin, 'Ekonomicheskii rost i alternativnaya otsenka'. Kommunist, 1988, 17, p. 85: second column from Measures of Soviet Gross National Production 1982 Prices, Joint Economic Committee, Washington DC, 1990, p. 41 and other CIA sources; third column from Narodnoe Khozyaistvo SSSR v 1958 g (Moscow, Gosstatizdat, 1959), p. 52 and latest Goskomstat sources.

For a long time these indexes were rejected and not estimated in the USSR because they were officially considered to be the creation of vulgar bourgeois economics and to include double counting of services. But a change of opinion came at last (although late) and the USSR CSO started to calculate and publish them in 1988. However, Khanin did not make use of this to propose alternative methods and estimates for these indexes. Nevertheless he published speculative and unfounded figures for these indicators.

Index of wholesale prices

While not providing valid estimates of growth rates of national income, GNP and GDP of the former Soviet Union, Khanin does offer his alternative estimate of the wholesale price index. How did he calculate this index?

According to elementary scientific requirements, it is necessary to form a certain sample basket of commodities, to calculate product price indexes and to weight them by patterns of production or consumption. But Khanin followed a different route, producing an 'original' method, which consisted in dividing the Soviet official indexes of national income and gross social product by his own alternative indexes of these indicators. We have seen the weaknesses of these indicators, and as a result this 'method' of estimating the index of wholesale prices for the USSR is impossible to accept.

TABLE 4

ANNUAL AVERAGE RATES OF GROWTH OF FIXED ASSETS IN THE MATERIAL SPHERE OF THE SOVIET ECONOMY (%)

1928-1941	5.3	1966-1970	3.2
1942-1950	2.4	1971-1975	4.1
1951-1960	5.4	1976-1980	3.2
1961-1965	4.2	1981-1985	2.0

Source: Khanin, 1991, p. 176

Fixed assets

For estimation of fixed assets Khanin used two methods. First, he used official data on the growth of capacity of electrical motors in Soviet industry, and the share of industrial fixed assets in all fixed assets in the material sphere, and thus defined rates of growth of total fixed assets in this sphere. This is a very strange procedure, because, beside industrial fixed assets, the material sphere also includes fixed assets in agriculture, construction, transport and communications, where the trends of fixed assets differ from that in industry sharply. Beside this, the growth of electrical motors capacity is not a proper reflection of real growth of industrial fixed assets, which include too much equipment and especially buildings that have no connection with electric motors. Khanin does not show any of his calculations by this method.

Second, he took the data on fixed capital for 1914 from the book by my old teacher A. Vainstein and for 1928 from works by Strumilin and added to them new investment (fixed assets put into operation) and deducted depreciation and retirements of fixed assets at current prices. He assumed the rate of retirement as 3% of fixed assets. All the data on investment and retirements he took from the Soviet official statistics. But for the recalculation of data from current to constant prices he used his price index for investment products.(23) It is unclear how he calculated his price indexes and how he separated his price index for investment products from his total wholesale price index, which he derived, as I have already mentioned, in a very crude and primitive way. His explanations are very uncertain and do not contain necessary details.

Nevertheless the second approach merits some attention (see Table 4). As on some other occasions, this result is probably close to reality. The annual average rate of fixed asset growth in the material sphere for 1928-1987 was 3.9%, higher than his growth rate for national income (3.3%).(24) So the capital:output ratio increased. This is almost certainly correct, but the validity of the calculations has no relation to this result.

Material intensity of production

The trend of material intensity of the Soviet economy Khanin defined by dividing indexes of output in mining and agriculture (the latter he took from the CSO official statistics) by his alternative index of Soviet national income. Thus, he did not take account of the majority of raw materials, including metals, wood and chemical products, and construction materials, and he used his intuitive and scientifically unfounded estimates of the rates of growth of Soviet national income (Table 5). These estimates can hardly be considered reliable.

TABLE 5

INDEX OF THE MATERIAL-OUTPUT COEFFICIENT IN THE SOVIET ECONOMY

1928-1941	1.25-1.3	1966-1970	1.02
1942-1950	1.1	1971-1975	1.05
1951-1960	0.95	1976-1980	1.05
1961-1965	1.02	1981-1985	1.05

Source: Khanin, 1991, p. 176

Employment and labour productivity

The index of employment in the Soviet economy Khanin defined extremely simply as 'the result obtained by dividing the official index of national income by the official index of labour productivity in the national economy'.(25) This is naive. Firstly, the official index of labour productivity reflects only employment in the material sphere of the Soviet economy. Secondly, it is known that the CSO did not publish data on employment in the entire economy: only data on the number of workers and employees (blue and white collar workers) were published. And for a period when American sovietologists made a huge effort to recalculate Soviet employment data Khanin trusts the Soviet official statistics on employment absolutely. Official data on employment were seriously understated owing to the exclusion of employment in military towns not shown on maps and for other reasons. As a whole, his index of Soviet labour productivity does not merit trust.

Economic analysis

Our analysis of the statistical work and methods of estimation employed by Khanin has shown that both suffer from severe weaknesses. His results are probably more or less true but were reached not intellectually but instinctively, not scientifically, but intuitively. And all the talk about the complexity and diversity of his approaches is no more than words.

During the period of Gorbachev's perestroika Russian democrats sharply and justifiably criticised the Soviet past and particularly the careless work of the CSO. The alternative estimates of Khanin were used in the political clashes of that time, a halo of exclusiveness was created around them, and nobody checked them. The article 'Lukavaya tsifra', written by Khanin and the famous economist and publicist (but not statistician) V. Selyunin,(26) became famous. At that time there was no time to investigate and check the statistical approaches of Khanin; everybody was busy with other jobs. Now it is possible to return calmly to his work and to see and check not only its statistical side but also its economic analysis.

Firstly, Khanin many times warns the reader that it is impossible to use the Soviet official statistics, especially those in monetary terms. Moreover, he sharply criticised American sovietologists who used these data, even partly. In his 1993 book he many times reproaches the CIA and the eminent and honest American sovietologist A. Bergson for using these data: 'Defining the growth of such an important component of GNP utilised as investment in machinery and equipment, the CIA simply

used Soviet data on the growth of this indicator, fully realising their defects ... They must have had a great wish to overstate the estimated indicator ...'.(27)

Certainly I am very far from reproaching the American CIA for deliberate overstating of Soviet rates of economic growth. But the question is, if Khanin was convinced that it was impossible to use the official statistics of the former Soviet Union, why did he use them himself and, moreover, why were all his 'alternative estimates' based on these statistics? Obviously because without these statistics it is impossible to produce any alternative results. If this is so, Khanin should have analysed the initial base for his alternative estimates (the bad Soviet official statistics) and defined what was bad and what good in it.

Secondly, in his first book Khanin often writes that, in spite of his lower alternative estimates of Soviet rates of growth in comparison with official data, the former were still higher and the USSR still had a certain advantage in rates of economic growth compared with the main capitalist countries:

In spite of the fact that alternative estimates show much lower rates of industrial growth than the official ones, the main conclusions formed in the Soviet economic literature on the growth of Soviet industry are also supported by the alternative estimates. Soviet industry in the period reviewed performed better in average annual growth rates than the majority of capitalist countries. In comparison with Soviet industrial growth, Japan was the only competitor. Owing to the advantage in rates of growth, the share of the USSR in world industrial output increased sharply and for several decades the USSR has occupied second place in the world (after the USA) in total industrial output.(28)

This is not a casual passage. In his 1988 article in Kommunist, in the perestroika period, he gave a summary of his alternative estimates of Soviet economic growth by different indicators and wrote:

This table fully confirms the substantial progress of the Soviet economy over the period reviewed. The Soviet national income increased by 6.9 times in 1929-87. For comparison I indicate that in the USA over this period it increased by 6.1, in Great Britain 3.8 and in France 4.6 times. The higher growth of Soviet national income was ensured despite the fact that almost 10 years were lost for the war and recovery of the pre-war economic level. In this period in the USA there was especially fast growth of the economy and the level of destruction of economic capacity in France and Great Britain was inferior to the losses of Soviet economic capacity both absolutely and relatively. The economic development of the USSR was complicated by the deformation of socialism and serious mistakes in economic policy. However, the progress that was achieved by socialist society proves its capacity successfully to resolve great socio-economic aims in spite of objective and subjective difficulties.(29)

Not much later Khanin was to write in his 1993 book that all the alternative estimates (his own and Western ones) embellished the truth on Soviet economic growth, which in reality was much lower. But now all these words are only words; there are no new estimates from the author.

At the conference on Soviet and American comparisons in April 1990 near Washington Khanin supported very actively the extravagant figure of 14% for the USSR/USA GNP ratio for the end of the 1980s (national income 20%) proposed by the American economist I. Birman and the Soviet economist V. Belkin. This ratio for the USSR reflects not second place in the world after the USA, but practically the level of India. Khanin again contradicted himself. In any case he needed to explain the change in his position. But he did not do so and now many of his new assessments are in contradiction with his previous ones.

Thirdly, in recent years Khanin changed his democratic position, abandoned support for market economic reforms in the new Russia and the ending of the old totalitarian system and stalinist economic model, and devoted himself to opposing market reforms.

n an article published in 1993 he wrote of the 'gigantic fiasco which the attempt at radical reform of Russia's economy suffered'.(30) And further:

Owing to ignorance and yielding to persuasion to create a class of owners in Russia, the largest sectors of the economy were liberated from state control and transferred to private hands. There appeared hundreds of millionaires, as the real owners of quasi-state enterprises. Did it lead to the enrichment of society as in a normal capitalist society? No ... The bubble called the private sector was created, it lives as a parasite on the state sector and the undervalued exchange rate of the ruble, and will burst as the reckoning for thoughtless pursuit of this theory.(31)

Over a year later he returned to the problem of Russia's privatisation and wrote that this process had become a huge destructive force, a means of economic robbery of Russia and enrichment of an extremely small number of successful 'takers' (prikhvatizatorov), or 'quasi-privatisers'. There was no success in creation of a viable private sector and constructive market institutions (banks, trade firms etc.). Both as a rule became like a bubble, living on the state sector.(32)

All of these assumptions are wrong. Russia started to carry out an ambitious and constructive programme of privatisation and is now receiving rich fruits. But that is a topic for another discussion. The main conclusion is that Khanin is against privatisation, against millionaires and rich people in Russia. In other words, he is against the market, capital, competition and other attributes of the market economy and, by the way, of democracy.

It goes without saying that market reforms are going slowly, and are indecisive and contradictory. They are not supported by many political parties and movements, which call for a return to market socialism, to the Ryzhkov-Abalkin programme and so on. But the real democrat and market-oriented specialist is against these 'values'. The West will not give credit for programmes like these. And the future of Russia will face a serious threat if somebody (maybe the communists?) tries to implement these programmes.

What are Khanin's proposals after his criticism of Russia's non-radical economic reforms? 'For salvation of the economy I think it is necessary, as in the war period (the decline and disorganisation of the economy now are worse than during the war), to return temporarily to command methods in many branches. Even liberal states acted thus in the war periods and nobody was confused by that. War must be war!'.(33)

All of these proposals are utterly non-scientific. The critic of Soviet statistics, who passed from the democrats' camp to the opposition, became not only an enemy of market reforms but a supporter of the most conservative forces in Russian society, of partial return from the market to the disgraced command-administrative stalinist system which drove the country from the civilised road of formation of an effective market economy to the road of totalitarism. This position has no relation to statistics, it is the position of a real Marxist, born in Soviet times. It is a paradox, but many former Soviet dissidents and now even emigres have taken a similar position. There is absolutely no economics here.

Fourthly, from his non-market position and criticism of reforms which have only been partly implemented in Russia, Khanin has begun to deliver the most gloomy and even catastrophic forecasts for the future of the new Russia. He considers that with continuation of the present course

the reformers 'will be overthrown and the command economy will be introduced by the conservative forces of society for a long time or for ever'.(34) I am convinced that all of these assessments are wrong. The economic crisis in Russia is coming to an end. In 1995 some important branches (metallurgy and chemicals, for example) began to recover and I am sure that the real rise will begin in 1997. All the post-communist countries went through a deep systemic and economic crisis and almost all have overcome or are overcoming this stage. In Russia the systemic and economic crisis was deeper and harder than in many other post-communist countries owing to historical, national and special economic reasons (this is a topic for another analysis).

Many Western sovietologists have overrated Khanin's works, perhaps owing to insufficient knowledge of Russian reality, perhaps to shortage of time for attentive reading of his hard texts. Personally I do not agree with the very high appreciation of Khanin's work that Harrison and Ericson have given. Harrison considers for example that 'Khanin's estimates are honest and for the most part consistent and well founded'.(35) In this article I concluded that all is not so simple. Khanin is a more complicated topic and requires more detailed analysis. I agree rather with the appreciations of Maddison, Bergson and Schroeder. Maddison writes that

Khanin finds a different time path for growth than the CIA but no net difference for the post war period as a whole. The big difference between his estimates and those which I use is that he gets a much lower rate of growth for 1928-40. However Khanin has not used a GDP framework for his analysis and has not produced annual estimates, so his revision needs further substantiation.(36)

Another eminence of contemporary Western economics, Bergson, writes: '...It is difficult to avoid the conclusion that Khanin's computations are notably crude by Western standards ... It is also troubling that, as Kushnirsky (1988) found, Khanin's results are not reproducible by the methods and with the documentation that he sets forth'.(37)

Schroeder writes:

Khanin does not compute national income and other aggregates directly, as do Bergson and the CIA, but rather employs varying numbers of proxies and then averages the results to obtain a single growth rate. His methodologies are intricate, complex and involve many unsupported assumptions; nowhere are his sources and methods set forth in the detail and transparency that Western statisticians would need in order to establish the credibility of his results as a substitute for the Western work cited above.(38)

I have tried to show that Khanin's work is neither well described, argumented or consistent. Reviewing Khanin's work and comparing it with that of American sovietologists (the CIA especially) I arrived at the following conclusions.

(1) Khanin made a gigantic effort, working alone in hard Soviet conditions in Siberia. He made many labour-intensive calculations of rates of growth of output.

(2) In his calculations there are many 'black holes' due to the absence of data, or neglect of some components of economic aggregates (apparel, military and high tech output, services, communications, trade etc.). He often makes very arbitrary estimates and artificial assumptions. He does not inform his readers of the primary data which he uses, or the detailed methods of his calculations, gives no illustrations of the process of calculation. In contrast to Western colleagues, his Appendix does not contain necessary details of his calculations (excluding the basket of products for industry in 1955-1975). As a result it is impossible to check his calculations. In contrast with Khanin, the CIA shows not only its methods of estimation, but also details for all

components of its aggregate indicators of Soviet economic growth (GNP, industrial output, etc.). The logic and methods of the CIA calculations are possible to check and amend if necessary. It is impossible to check or to correct Khanin. He lacks transparency.

(3) His methodology is often unclear and contains contradictions, some of them strange.

(4) All Khanin's estimates of Soviet economic growth (especially GNP, national income, construction, employment, labour productivity) are very crude and vague.

(5) His scientific position is also very vague and unclear. He radically changed his position on economic reforms and the development of democracy in Russia and moved to the conservative camp. He also changed his assessment of the economic performance of the FSU.

(6) Khanin's vision was strongly influenced by the political situation in the former Soviet Union. In the Soviet Union his estimates were used by some political circles for drawing negative conclusions on 'communist construction'. Now they are used by antagonists of real Russian economic and market reforms.

(7) His work is very uneven. His pessimism in relation to Soviet and Russian economic growth is unfounded and unscientific.

8) This does not mean that the work of Khanin is not useful. He helped to educate the Russian public on the quality of official Soviet statistics. He explored the traditional notions of Soviet economic performance and helped to turn public opinion in favour of alternative estimates. It is especially important that his alternative estimates appeared in the former USSR. But this does not mean that Khanin's alternatives are better than American ones. The US sovietological school has a long tradition in this field and many highly qualified specialists and sophisticated up-to-date methods of processing primary statistical data. Unfortunately, Russian individual specialists do not have all of these.

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I am grateful to Professor Angus Maddison for stimulating my interest in Khanin's works.

1 See for example, T. Kozlov, 'Tonkosti scheta i dostovernost' dannykh', EKO, 1991, 2, pp. 5-13; V. Knayzevsky, T. Kozlov & I. Sheremet, 'Zametki i pisma', Vestnik statistiki, 1987, 6, pp. 53-60.

2 See, for example, M. Harrison, Europe-Asia Studies, 45, 1, 1993, pp. 141-167; R. Ericson in H. Rowen & C. Way (eds), The Impoverished Superpower: Perestroika and the Soviet Military Burden (ICS, 1990).

3 G. Khanin, Dinamika ekonomicheskogo razvitiya SSSR (Novosibirsk, Nauka, 1991).

4 Ibid., p. 116.

5 Ibid., p. 122.

6 Ibid., p. 123.

7 Ibid., pp. 124, 125.

8 Ibid., p. 129.

9 W. Nutter, Growth of Industrial Production in the Soviet Union (Princeton, 1962), pp. 164, 165.

10 Khanin, 1991, p. 132. Thus the results obtained by the various methods do not coincide.

11 Ibid., p. 254.

12 Ibid., pp. 135, 137.

13 Ibid., p. 137.

14 Ibid., pp. 256-258.

15 Ibid., p. 139.

16 Ibid.

17 Ibid., p. 143.

18 Ibid., p. 140.

19 Ibid., p. 141.

20 Ibid., pp. 174-175.

21 Ibid., pp. 174, 205.

22 Ibid., p. 174.

23 Ibid., pp. 141-143.

24 Kommunist, 1988, 17, p. 85.

25 Khanin, 1991, p. 143.

26 Novyi mir, 1987, 2, pp. 181-201.

27 G. Khanin, Sovetskii ekonomicheskii rost: analiz zapadnykh otsenok (Novosibirsk, 1993), p. 96.

28 Khanin, 1991, p. 145.

29 Kommunist, 1988, 17, p. 86.

30 EKO, 1993, 4, p. 49.

31 Ibid., p. 56.

32 EKO, 1994, 7, p. 73.

33 Ibid., p. 74.

34 Ibid., p. 74.

35 Europe-Asia Studies, 45, 1, 1993, p. 159; Rowen & Way (eds), pp. 63-92.

36 A. Maddison, Monitoring the World Economy, 1820-1992 (OECD, Development Centre, 1995), p. 142.

37 Economic Statistics for Economies in Transition: Eastern Europe in the 1990s (Washington DC, 1991), pp. 107, 108.

38 Post-Soviet Affairs, 1995, 11, p. 206.