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RECENT TRENDS IN THE SOVIET
INDUSTRIAL WAGE STRUCTURE

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Since the mid-1950's, the structure of Soviet wages has undergone considerable change, earnings differentials have been narrowed and average industrial money earnings have more than doubled. This has been largely the result of a large increase in the minimum wage and two reforms of the wage system. After a brief review of these wage reforms in section I, the system of basic wage rates for wage earners (rabochie) will be described in section II and the system of basic salary rates for salaried workers, i.e., for managerial and technical personnel (Inzhenerno-tekhnicheskie rabotniki) and office workers (sluzhashchie) will be described in section III. Section IV very briefly outlines the system of variation in wages by geographical region. The incentive system is the topic of section V. Changes in the level and distribution of industrial earnings are shown and discussed in section VI.

I. The Wage Reforms

The first wage reform was carried out during the period 1956 to 1960 in industry and other branches of material production and during 1964-1965 in the non-material branches.¹ During this reform the minimum wage was first (1957) set at 27-35 rubles a month and then, in 1959, raised to 40 rubles a month. This minimum was established gradually as the reform was introduced in the various industries and branches and was in effect for all wage earners and salaried workers in the economy by 1965. In January 1968 the minimum wage was raised to 60 rubles a month simultaneously for all workers in the economy and some adjustments were made in wage and salary rates between 60 rubles and 70 rubles a month.

This rise in the minimum wage was evidently intended to be the first step in the second wage reform and it was anticipated that this would be completed by raising the wages of the "middle-paid" categories of workers during the rest of the eight Five Year Plan for 1966-70 (Kunel'skii, 1968, p. 87). This, however, with a few exceptions, was delayed, probably for fear of the inflationary consequences of further increasing wages. It was effected for workers in industry and the other branches of material production during the period from the end of 1972 to the end of 1975. The reform was begun in the non-material branches at the end of 1976 and will not be completed until 1978 or after.² During the second reform the minimum wage was raised to 70 rubles.

The exceptions are construction and the construction materials industry, where the second wage reform was carried out in 1969; the railroads and subways, where the reform was carried out in 1971; and teachers and doctors (but not other workers in education and health) in 1972. There was also a raise in the basic wage rates of machine-tool operators in 1968, a response to an acute shortage and turnover of machine-tool operators and wage raises for tractor-machinists in agriculture and forestry in 1971 and 1972.

The first reform was introduced on an industry by industry basis, starting with the heavy industries. The second reform was introduced, instead, on a regional basis, starting with the Far North and Far East and ending in the central, southern and western regions of the European part of the USSR. The regional pattern means wages are raised first for those in regions where it is hardest to attract and hold labor. It also avoids the problem of widely differing inter-industry rates within the same region during the years of introducing the reform which attended the first reform. This was viewed as contributing to excessive labor turnover (Chapman, 1971).

The 1956-60 wages reform was the first general overhaul of the wage system as a whole since the early 1930's. Its introduction coincided with

the formal abolition of the wartime measures tying people to their jobs and providing for the direct allocation of labor. The basic purposes of the reform were to restore central control over the wage system and to improve the incentive and allocative efficiency of the wage system. This meant creating a structure of basic wage and salary rates which conformed to current conditions in the demand for and supply of various types of labor and a system in which the basic rates played a major role in earnings differentials. The varieties of incentive provisions which had been developed, and generally loose but widely varying performance norms, meant that the basic rate had become a relatively insignificant determinant of relative earnings. The aims were to make the basic wage structure more consistent and to provide for equal pay for equal work. The wide variety of existing wage scales was reduced, the wage scales were simplified and made more uniform, and the spread of basic wage rates was generally narrowed.

Differentials for conditions of work and for geographic location were generally made more specific and more uniform. Incentive provisions were made more uniform and incentive earnings were to play a smaller part. There was some reduction in piecework and progressive piecework was virtually abolished. Greater emphasis was placed on bonuses, for pieceworkers as well as for time workers, but limits were placed on the amount of bonus that could be earned.

A more equal distribution of earnings was one aim of this reform, but an aim made explicit only in 1959 when the 40-ruble minimum wage was introduced.

The purposes of the second wage reform are broadly similar, to further improve and simplify the wage system as a whole, to adapt it to changes in demand and supply which have occurred since the previous reform, and to adjust the wage and salary scales to the earlier 50 per cent increase in the minimum wage of 1968. The minimum wage was raised to 70 rubles a month and

the wages and salary rates of "middle-paid" workers were raised. "Middle-paid" workers generally are defined as those who had basic wage or salary rates up to 200 rubles to 230 rubles (Kunel'skii, 1972, p. 72; Kostin, 1973, p. 11). The basic wage structure was made more consistent and uniform. In line with the principle of equal pay for equal work, many more occupations are evaluated in terms of skill level on the basis of the kind and extent of knowledge and the nature of the work process itself and fewer on the basis of the specific industry in which the work is performed. Generally, differences in basic rates reflecting skill differentials were reduced while differentials for conditions of work were increased. It is argued that differences in skill among individuals have decreased as a result of the higher level of education and the scientific-technological revolution. Conditions of work, it is claimed, have improved in many cases but where the conditions are still unpleasant, unhealthy or dangerous it is only right to compensate workers for this.

The second reform focused particularly on trying to increase the incentive effect of the wage system and to devise methods of linking an individual's actual earnings more closely to the results of his work. A variety of incentive systems have been worked out with this purpose.

The second reform was carried out on the basis of much better information than the first, including the results of sociological studies providing information on what aspects of the job and the pay lead workers to dislike their jobs or to quit. Thus the second reform could take into account "subjective" factors disdained in the first reform (Kirsch, 1972, ch. 6).

II. The Basic Wage Structure for Industrial Wage Earners

The earnings of a manual worker consist of the basic rate for his skill grade; possibly additions for conditions of work, expressed as a percentage of the basic wage rate; a regional supplement in many areas; a length of service supplement in a few areas, such as the Far North; possibly overtime earnings; and incentive earnings, such as piecerate earnings above the basic rate and bonuses.

The basic wage scales consists of a given number of grades and a set of coefficients relating the basic wage rate for each grade to the grade-1 rate. These scales are intended to represent the difference in skill and complexity of work. The scales in the machinery and several other industries in 1960 and in 1975 were as follows:

	Grade	1	2	3	4	5	6
1960		1.0	1.13	1.29	1.48	1.72	2.00
1975		1.0	1.09	1.20	1.33	1.50	1.71

(Chapman, 1970, p. 25; Kostin, 1973, p. 15)

Workers are classified by grade in accordance with the unified Wage-Qualifications Handbook which specifies the requirements of each occupation, the level of occupational knowledge required of the worker and the characteristics of the work he must know how to perform for each occupation and grade. This handbook was revised for the current reform to cover almost all wage earner occupations, with as many as possible classified according to the nature of work and qualifications of the worker with special sections for occupations relating only to a specific industry. During the previous reform, there were separate handbooks for the various industries and one Unified Wage-Qualification Handbook for Workers of General Occupations. The latter was, in fact, the basic handbook for the machinery industry. It was constructed

considerably more carefully than the branch handbooks and, for this and other reasons, the definitions of skill levels tended to vary among industries. (Kirsch, 1972, pp. 78-93) The revised Unified Handbook no doubt was an attempt to improve this situation.

The actual base rate for a given worker depends on his grade and the grade-1 rate established for the industry he works in. The level of rates is built up from the minimum wage, with the level in the less important industries set at or near the minimum wage and with higher rates for the heavy industries, generally.

The structure of the basic wage scales resulting from the 1965-60 and 1972-75 wage reforms are shown in Table 1. While information on the 1975 rates is not yet complete, the industries included in Table 1 probably cover the entire range in terms of both inter-industry differences in grade-1 rates and in intra-industry width of scales.³

The 1956-60 wage reform, it should be mentioned, generally meant a narrowing of the width of the scales. As is apparent from Table 1, the second reform meant a further narrowing of the wage scales. For industries, such as the food and light industries and some others, the 1968 increase in the minimum wage substantially narrowed the wage scales and for these, the 1975 scales represent some widening of the post-1968 scales. In most industries, the number of grades remains at six, as established in the first reform; in ferrous metallurgy (main production) the number was reduced from ten to eight, in coal from 8 to 6, and in ore extraction from 7 or 8 to 6.

So far as the basic rates are concerned, the raise in the minimum wage from 40 rubles in the first reform to 70 rubles during the second reform has clearly meant a very large increase in basic rates in the lower paying industries. Unfortunately we do not have enough information on the current grade-1 rates in other industries to determine whether the gap in basic

Table 1

STRUCTURE OF BASIC WAGE SCALES IN SOVIET INDUSTRY, 1961 and 1975

Industry	Grade 1 rate, normal conditions Rubles per month ^a	1961 Wage Scale		Ratio of highest to lowest rate, allowing for labor conditions ^b
		No. of grades	Ratio Top grade rate to grade 1	
Food	45	6	1.80	2.00
Light (excluding textiles and leather)	45	6	1.80	2.08
Textiles	45	6	1.80	2.23
Leather	45	6	1.80	2.08
Woodworking	45	6	2.00	2.36
Machinery	48	6	2.00	2.83
Oil Refining	46	6	2.00	3.00
Non-ferrous Metallurgy	58	7	2.60	2.60
Chemicals	40	7	2.30	3.46
Ferrous Metallurgy	51.2	10	3.20	3.20
Coal, underground	61.4	8	3.75	3.75
Lumbering	55.9	6	2.00	2.00
Ferrous Ores	55.3	8	3.20	3.20
Non-ferrous Ores	62	7	2.86	2.86
Petroleum Extraction	66	6	2.42	2.42
All Industry	n.a.	n.a.	n.a.	5.75

Table 1
(continued)

Industry	Grade 1 rate, normal conditions Rubles per month ^a	1975 Wage Scale		Ratio of highest to lowest rate, allowing for labor conditions ^b
		No. of grades	Ratio Top grade rate to grade 1	
Food	70.0	6	1.58	1.96
Light (excluding textiles and leather)	70.0	6	1.58	1.88
Textiles	(>70.0) ^c	6	1.71	2.27
Leather	n.d.	6	1.71	(2.27) ^d
Woodworking	70.0	6	1.71	2.27
Machinery	72.4	6	1.71	2.28
Oil Refining	n.d.	6	1.71	
Non-ferrous Metallurgy	n.d.	6	1.71	
Chemicals	72.4	7	1.92	(2.56) ^e
Ferrous Metallurgy	96.4	8	2.10	2.10
Coal, Underground	124.0 ^f	6	1.86	1.86
Lumbering	n.d.	6	1.86	
Ferrous Ores	n.d.	6	1.86	
Non-ferrous Ores	n.d.	6	1.86	
Petroleum Extraction	n.d.	6	1.86	
All Industry	n.a.	n.a.	n.a.	3.29

Notes and Sources to Table 1

- n.d. means no data
- n.a. means not applicable
- a. The rate is for work paid by time where this differs from the rate for piece work.
- b. The highest rate is the top-grade basic rate plus supplements for piecework, for hot, heavy and hazardous work or for extra hot, heavy and hazardous work; excluded are regional coefficients and night-shift supplements.
- c. The rates in textiles are higher than in other light industries.
Volkov, ed., Trud i zarabotnaia plata, 1974, p. 399.
- d. Supplement for extra hot and heavy work assumed to be the same as in the textile industry.
- e. Supplements for extra hot and heavy work assumed to be the same as in the machinery industry.
- f. Calculated from the wage scale and the assumption that the top basic rate of 230 rubles a month established during the 1956-60 reform was not raised.

Sources: 1960: J. G. Chapman, Wage Variation in Soviet Industry, Santa Monica, 1970, p. 26 and Appendix B. 1975: L. A. Kostin, Organizatsiia oplata trud, Moscow, 1973, pp. 14-15; R. Batkaev, in Sotsialisticheskii trud, 1973, No. 10, pp. 28-37; S. Shkurko, in Sotsialisticheskii trud, 1975, No. 1, pp. 7-18; A. P. Volkov, ed., Trud i zarabotnaia plata v SSSR, 2nd ed., Moscow, 1974; S. Kh. Gurianov and L. A. Kostin, Trud i zarabotnaia plata na predpriatii, 2nd ed., Moscow, 1973, pp. 221-229.

grade-1 rates has been narrowed generally. Certainly the grade-1 rates in ferrous metals production and in underground coal mining increased more between 1960 and 1975 than the rates in the food industry and in light industries (excluding textiles). It may be that the starting level of skill in ferrous metals and coal mining is considered to be higher than in most industries; presumably it was the bottom skill grades which were eliminated when the number of grades was reduced in these industries. Also, it should be noted that in these industries the basic rates include the differential for working conditions, probably for historical reasons, while in principal and in practice, in most industries differentials for conditions of work are calculated separately.

Differentials for conditions of work are in most cases included in the basic wage system in the form of percentage increments to the basic rate for time work under normal conditions for (a) work under hot, heavy or hazardous conditions, (b) in most cases for especially hot, heavy or hazardous conditions, and (c) often for piece work. Generally, the second reform increased the differentials for conditions of work and made them more uniform. In particular, for the food and textile industries, there was formerly provision only for hot, heavy and hazardous work while the extra hot, heavy and hazardous category has now been established; this has raised the maximum difference for conditions of work from 11 per cent to 16.4 per cent of the basic wage rate in the food industry and from 10 per cent to 24.4 per cent in the textile. The latter conforms to the maximum differential prevailing in most heavy industries. (Shkurko, 1975, pp. 14-15).

The differential for piecework formerly varied among industries (e.g., it was 16 per cent in the machinery industry, 13 per cent in the textile

industry, 7 per cent in woodworking, and 0-6 percent in the food industry.) but has now been set at 7 per cent in all industries except in the few industries, such as coal mining and metallurgical production, where there is no difference between time and piece rates. (Shkurko, 1975, p. 16).

The effects of differentials for conditions of work and piecework on the total spread in wage rates within each of a number of industries is shown in columns (4) and (8) of Table 1. Thus, in the food industry in 1975, a grade-6 worker working under especially hot, heavy or hazardous conditions and paid on a piecework basis would be paid a basic rate 1.96 times the rate for a grade-1 time-worker working under normal conditions. The overall intra-industry spreads taking these pay supplements into account is smaller in 1975 than in 1960 in most cases--with the important exception of textiles--reflecting primarily the smaller spread in basic rates.

The overall spread in wage rates, between the minimum grade-1 rate and the maximum top rate between industries has substantially narrowed. In 1960, the highest rate was the top rate in underground coal mining of 230 rubles a month and this was 5.75 times the lowest grade-1 rate, equal to the minimum wage of 40 rubles a month. In 1975, it is believed, the top underground coal mining rate remained at 230 rubles⁴. If so, this was only 3.29 times the lowest grade-1 rate and minimum wage of 70 rubles.

The higher rates for pieceworkers are justified on the grounds that piece work is more intense than work on an hourly basis. It is pointed out, however, that the intensity of work is as great for time workers on some types of work -- e.g., where the number of pieces or operations performed per hour is determined by the speed of the production line and not by the individual worker--as for piece workers. This is the reason given for

reducing the differential for piecework. Some additional provisions for increasing wage rates for intensity of work have been introduced. These will be discussed in the section on incentives below.

Other supplements to the basic wage include payment for overtime work. This both in 1960 and 1975 is generally 150 per cent of the basic rate for the first two hours of over time and double pay for additional hours of work overtime and on holidays. For pieceworkers, this is calculated as actual piece earnings plus 50 per cent of their basic hourly rate for the first two hours and 100 per cent of their hourly rate for the additional hours (Kostin, 1960, pp. 51-52; Kostin, 1973, p. 30). Payment for night shift work (between 10 pm and 6 am) was raised in December 1972 to 50 per cent of the base rate in the textile and breadbaking industries "in view of the three-shift regime in these industries and the high proportion of women working in them" and to 20 per cent in other industries (Volkov, 1974, p. 399; Kostin 1973, p. 30). The night shift usually works as many hours as the day shift only in round-the-clock production; otherwise it works an hour less than the day shift. The night shift differential was formerly 14 per cent for those on an 8-hour night shift, 17 per cent for those on a seven-hour shift and 20 per cent for those on a six-hour shift. (Kostin, 1960, p. 53). The current plan provides for increasing the night shift differential in a number of branches of industry. (Guidelines for 10th Five Year Plan 1976-80, CDSPXXVIII-17, p. 11)

There are special provisions for young workers. Young people aged 15 to 16 work 24 hours a week and those aged 16-18 work 36 hours a week, as compared to the standard 40.7 hours a week, but are paid for the full standard week. Young workers starting work may have their output norms reduced by up to 20 per cent for the first four months of work and in

the case of machine-tool operators the reduction in output norms may be up to 40 per cent for the first three months and up to 20 per cent for the following three months. For young people studying while working, there are provisions for varying amounts of time off, usually at half their average earnings but not less than the minimum wage.

(Sotsialisticheskii trud 1973, No. 8 pp. 138-143; 1973, No. 9, p. 141.)

These provisions are explained as measures to protect the health of young workers and to encourage them to raise their qualifications while working. They are surely also designed to prevent young people from becoming so discouraged that they quit their jobs. Turnover is notoriously high among younger workers. But the question arises as to what reaction the young person has when he reaches the age eighteen, has to work 4.7 more hours with no change in base weekly salary and at stiffened performance norms.

III. Basic Salary Schedules for Managerial, Engineering and Technical Personnel and Office Workers

Salary rates of managerial and technical personnel are based on qualifications, skill and level of responsibility. Salary levels as well as wage rates are differentiated between industries on the basis of the national importance of the industry. Within an industry, upper level managerial salaries are differentiated according to the classification of their enterprise into groups on the basis of various indicators of the importance, size and complexity of the enterprise. At intermediate levels of management, salaries are differentiated according to the group in which the department or shop is classified. Salaries of specialists, such as engineers, are differentiated according to the complexity of the product produced by the enterprise, regardless of the category of the enterprise, shop or department in which they work. Salaries of technicians, the lowest professional group, are uniform within a given industry and do not vary much between industries.

For a given occupation or position a range of salaries is established and the precise salary of the individual will be determined within that range according to his skills, experience, and performance.

The 1960 and 1975 salary schedules in the machinery industry are shown in Tables 2 and 3. Table 2 indicates salaries for persons with managerial and administrative positions. To start with the director's salary, one may note first the very wide range of salaries prevailing in 1960 depending on the enterprise group, from 100-140 rubles in the least important enterprises (group VII) to 300-330 rubles in the most important enterprises (group I). This range remains wide in 1975 though it was narrowed by the restriction of salary increases to those with basic salaries below 200-230 rubles. This restriction along with the relatively large salary increases for lower managerial positions and specialists, has considerably narrowed the whole range of managerial and technical salaries. Salaries of chief engineers and chiefs of departments are also differentiated according to the enterprise group. I assume that where no salary is shown for chief of a particular group of departments, this means that enterprises of that group do not have the corresponding department. At the lower level, shops are divided into four groups and sections into three groups for determining the salaries of shop managers and foremen.

The foreman's salary is determined on the basis of the level of skill of the workers under his supervision. Thus a foreman of group 1 has a salary 10 to 15 per cent above the highest grade worker rate, a foreman of group 2 has a salary at the level of a highly skilled worker and a foreman of group 3 has a salary 10 to 15 per cent above the wage rate for workers of average skill (Shkurko 1975, p. 12).

Table 2

SALARY STRUCTURE IN SOVIET MACHINERY INDUSTRY, 1960 and 1975
A: ADMINISTRATIVE SALARIES

Position	Monthly Salary in Rubles by Enterprise Group						
	I	II	III	IV	V	VI	VII
Director of enterprise							
1960	300-330	250-300	220-260	200-230	160-200	150-170	100-140
1975	300-330	250-300	220-260	220-230	190-200	180-190	150-170
Chief of department, production planning, technical control, etc.							
1960	200-240	180-220	160-200	140-180	130-160	120-150	- -
1975	220-240	205-220	195-205	189-195	175-185	165-175	- -
Chief of department, economic planning, labor and wages, material supply, etc.							
1960	150-180	140-170	130-160	125-155	110-140	- -	- -
1975	200-220	185-200	175-185	165-175	155-165	- -	- -
Chief of department, finance, technical information, legal, etc.							
1960	130-150	130-150	120-145	120-145	110-135	- -	- -
1975	165-175	165-175	- -	- -	- -	- -	- -
Chief of design office within departments: chief designer, chief technologist							
1960	160-200	150-180	140-170	130-160	- -	- -	- -
1975	185-200	175-185	175-185	165-175	- -	- -	- -
Shop managers ^a							
1960	170-210	150-180	140-160	130-150	- -	- -	- -
1975	195-215	180-195	170-180	160-170	- -	- -	- -
Foremen ^a							
1960	115-125	100-115	90-100	- -	- -	- -	- -
1975	140-155	130-145	120-135	- -	- -	- -	- -

Notes and Sources, Table 2

- a. The salary depends on the group of the shop or section, not on the group of the enterprise.

Sources: 1960: Gosudarstvennyi komitet Soveta ministrov SSSR po voprosam truda i zarabotnoi platy, Tarifnye stavki i dolzhnostnye oklady, Moscow, 1960, pp. 126-130. 1975: Kostin, Organizatsiia oplata truda, M., 1973, pp. 18-19; Gurianov and Kostin, Trud i zarabotnaia plata na predpriatii, M., 1973, pp. 267-271.

It might be mentioned here that there seem to be a number of difficulties concerning the relation between the pay of foremen and of the workers under them. The workers often have more possibility of increasing their earnings through piecerate and bonus systems than do foremen. This is by no means a new problem but a recent example from the construction industry will be illustrative. Foremen, it is reported, generally try to leave their job as soon as possible, particularly the youngest and best educated among them. It was found they quit either to move up the management ladder or to become brigade leaders. Pay is a major reason. Among 1300 foremen surveyed, none of them earned more than 145 rubles a month while one-tenth of the brigade leaders earned 300 rubles and the remainder earned between 170 and 240 rubles. Foremen received only one-fourth the bonuses that brigade leaders did and were much more frequently subjected to financial penalties. Some solutions tried in the construction industry are combining the position of foreman and brigade leader and giving him advantages of both pay systems.^{5/}

These problems led to a Resolution in May 1977 on Measures to Further Enhance the Role of the Foreman of a Production Sector at Industrial enterprises and Construction Organizations. This provided that foremen could be given the rank of foreman first class with a 20-30 per cent increase in base pay or foreman second class, with a 10-15 per cent pay increment. It also provided for additional pay for night work for foremen at the percentage level set for wage earners in their industry. (Pravda, May 6, 1977; CDSP XXIX-18, pp. 19-20).

Table 3 shows salaries for the lowest level technical personnel, technicians, whose salaries are the same throughout the machinery industry, and for the main types of engineering and other professional personnel.

Table 3
SALARY STRUCTURE IN SOVIET MACHINERY INDUSTRY, 1960 and 1975
B: SPECIALISTS

Position	Monthly Salary in Rubles by Group of Complexity of Products ^a		
	I	II	III
Engineer designers Category 1			
1960	120-150	110-140	- -
1975	165-175	155-165	155-165
Category 2			
1960	110-140	105-135	100-125
1975	155-165	145-155	145-155
Category 3			
1960	105-135	100-125	95-120
1975	145-160	135-150	135-150
Senior engineers, economists, norm-setters, dispatchers			
1960	105-135	100-125	95-120
1975	140-165	130-155	130-155
Engineers, economists, norm-setters, dispatchers			
1960	95-120	90-110	85-100
1975	115-150	105-145	105-145
Senior technicians			
1960	75- 90	75- 90	75- 90
1975	100-125	100-125	100-125
Technicians			
1960	70- 80	70- 80	70- 80
1975	90-115	90-115	90-115

Notes and Sources, Table 3

- a. I is for especially complex products, II is for complex products and III is for simple products. The 1975 system distinguishes only between especially complex products and all other products.

Sources: 1960: Gosudarstvennyi komitet Soveta ministrov SSSR po voprosam truda i zarabotnoi platy, Tarifnye stavki i dolzhnostnye oklady, Moscow, 1960, pp. 126-130. 1975: Kostin, Organizatsiia oplata truda, M., 1973, pp. 18-19; Gurianov and Kostin, Trud i zarabotnaia plata na predpriatii, M., 1973, pp. 267-271.

Their salaries vary depending on the level of complexity of the products produced by the enterprise in which they work. Engineer-designers and probably various other key occupations are also grouped into categories, apparently on the level of their training and qualifications.

As can be seen from Tables 2 and 3, in the machinery industry, and this is said to be typical of industry generally, the range of pay for a director of a given category of enterprise and for various other administrators has generally been narrowed while the range in salary rates for a given specialist occupation has been widened. The salary range, or gap between the minimum and maximum salary, for an engineer or economist, etc., formerly was 20-25 per cent in the light, food and woodworking industries and not over 30 per cent in other industries while it is now 30 to 40 per cent. The current maximum rate of a senior engineer (economist, normsetter, etc.) now is 40 to 50 per cent above the minimum salary of an ordinary engineer (economist, normsetter, etc.) This widening of the salary range for engineers and other specialists is intended to encourage such specialists to increase the level of their qualifications without having to be transferred to an administrative position to get a higher salary. Managerial and technical personnel with high academic degrees have their salaries raised by 50 rubles a month for a Candidate degree and by 100 rubles for a doctoral degree (G. A. Oganian, 1974, pp. 167-68). Beyond this, the director has a right to establish a supplement of up to 30 per cent of their salary for especially qualified foremen and other engineering-technical personnel and can use for this up to 0.3 per cent of the wage bill of the enterprise. (Shkurko 1975, pp. 13-14.) Indeed there is much

discussion of the necessity for increased specialization among directors as well as among engineers and other specialists, and for the need for more precise, complex and many-sided differentiation of salaries to stimulate the raising of qualifications among engineering and technical personnel even after they have received their diplomas.^{6/} It is my impression that the current literature makes more of a distinction between managerial personnel and specialists than did the literature concerning the earlier reform.

The criteria for classifying enterprises and departments into groups, which determine the intra-enterprise levels of top managerial pay, have been modified. Detailed criteria, varying by industry, with a system of weights for summing them up are established for the purpose of determining the group and, hence, salary level of each enterprise. Similar, but usually fewer groups are established for departments and shops. These indicators both formerly and currently are intended to reflect the size of the enterprise, the volume or value of output, the extent of the product assortment, the complexity of the products and of the production process, and the level of technology. A new criterion added with the present reform, one which reflects the increasing concern with productivity, is the level and growth of labor productivity.^{7/}

The range of managerial salaries has been substantially narrowed in the latest reform. Formerly the director's salary ranged from 80 rubles a month in enterprises of the lowest group in the local butter-cheese and milk factories and certain other food plants to 450 rubles a month for the highest paid director of a coal mining trust, which was over 5.6 times the lowest director's salary.^{8/} The high coal mining director's salary is probably still 450 rubles while the lowest salary has undoubtedly

been increased. Unfortunately, we have no specific data, but judging from the 50 per cent increase in the salary of a director of a machinery enterprise group VII (Table 2), it seems logical to assume that the salary of the lowest paid director in the food industry would have been increased by at least 50 per cent to 120 rubles and possibly by more.

For engineers, technicians and foremen, four levels of salary scales were established, two relating to heavy industry and two relating to light industry. (Volkov, 1974, p. 270).

Office workers, in 1960 were divided into five groups of differing complexity with salaries ranging from 45 rubles to 90 rubles a month in light industries and from 50 to 105 rubles in heavy industries. With the introduction of the 60 ruble minimum wage in 1968, the inter-industrial differential was abolished for several categories of office workers.

(Chapman, 1970, p. 97): Apparently two salary rate schedules have been re-instated for office workers, one for heavy industry and one for light industry, (Kostin 1973, p. 20). Volkov, (1974, p. 270). The new scheme includes six groups. The lowest office worker salary for work not requiring any special preparation is said to be set at the level of the wage rate of a grade-1 time-worker in normal conditions. The highest office worker salary for office workers with specialized education and considerable experience is set at the level of the average salary of engineers and other specialists. Thus the salary of a senior accountant will be comparable to that of the economist. (Shkurko 1975, p. 13).

If applied to the machinery industry (Tables 1 and 3), this would imply that the lowest office worker salary would be around 72.4 rubles and the highest around 105-145 (the range for engineers and economists working in enterprises producing ordinary rather than especially complex

products). Another source specifically puts the salary of a senior accountant without higher specialized education (apparently in the machinery industry) at 100-130 rubles (Sotsialisticheskii trud, 1973, No. 12, p. 36).

The other categories of salaried industrial workers are custodial personnel and guards. The salaries of the former ranged from 40 to 45 rubles and of the latter from 45 to 55 rubles in 1960. (Chapman 1970, p. 98). Presumably these salaries have been raised to a minimum of 70 rubles.

Differentials for conditions of work apply to salaries of managerial and technical personnel and office workers. For managerial and technical personnel directly working in dangerous conditions, there is a supplement of 10 per cent of their basic salary and for especially dangerous conditions the supplement is 15 per cent. This does not apply, however, in the coal, ferrous and non-ferrous metallurgy nor the oil and gas industries since the basic salary rates in these industries take into account the harder conditions of work. (Shkurko 1975, p. 17.) It is believed that similar increments for conditions of work apply to office workers and it is not known whether they apply to custodial workers and guards.

IV. Regional Variation in Wages

The wide disparities in living conditions and climatic conditions, including the greater need for calories, heat and warm clothing in cold climates, etc., are taken into account in establishing differentials in wages and salaries. The regional coefficients, as reported in a 1973 source are shown in Table 4. Thus, the basic wage rates as discussed so far apply in the central, southern, and western regions of the European part of the USSR and the coefficient for this region is 1.0.

Table 4
REGIONAL WAGE COEFFICIENTS, USSR, (circa) 1972

<u>Wage Region</u>	<u>Wage Coefficient</u>
Islands of the Arctic Ocean	2.0
Other regions of the Far North	1.5-1.7
Regions equivalent to the Far North (including Murmansk Oblast and central regions of Siberia) and to regions of the Far East	1.3-1.5
Certain regions of the European North, southern regions of Siberia and the Far East	1.2-1.3
The Urals, southern regions of Western Siberia, Kazakhstan, Central Asia	1.1-1.2
Central, southern and western regions of the European part of the USSR	1.0

Source: E. F. Mizhenskaia, Lichnye potrebnosti pri sotsializme, M., 1973, p. 94.

In the Urals, southern part of West Siberia, Kazakhstan and Central Asia, the wage is raised by the coefficient of 1.2 to 1.3, i.e. by 20 to 30 per cent. The coefficient in islands of the Arctic Ocean is the highest: 2.0. These coefficients are applied to earnings, rather than to the basic wage or salary rate, but they are applied only to earnings up to 300 rubles. The source of Table 2 indicates that the coefficients were to be raised during the 1971-76 plan.

When the regional coefficients were originally established in the late 1950's they applied in some areas only to heavy industry and in other areas they applied at a lower rate to light than to heavy industry. This meant a wide disparity between wage and salary rates in regions where coefficients applied and this was considered to contribute to high labor mobility and to migration from Siberia and similar areas where labor was especially needed. (Chapman, 1971). A process of extending the regional coefficients to all wage earners and salaried workers began in 1960 when the Far North benefits were made applicable to all. The Far East coefficients were extended to all in 1968, the East Siberia coefficients were extended to all in 1969. The extension to all of the West Siberian coefficients was planned to be effected (probably) early in the 1970's (Chapman 1971). The regional coefficient in the Turkman SSR was extended to all in 1972 and in parts of the region, the coefficient was raised from 1.2 to 1.3 (Biulleten', 1972, No. 10, pp. 9-10). The current (1976-80) plan provides for continuing to extend the regional coefficient to workers for whom this has not been established in the Urals and certain parts of Kazakhstan.

It also provides for increasing the pay differentiation for persons working in areas with difficult natural-climatic conditions. (Guidelines for the Tenth Five Year Plan, CDSP XXVIII-17, pp. 13-14).

Beyond the regional coefficient, in certain areas there is an additional length of service supplement to earnings. This was initially limited to the Far North and equivalent regions. According to the 1968 regulations, in some parts of the Far North, including the islands of the Arctic Ocean, the supplement amounted to 10 per cent of the wage for each 6 months of work in the region, with a maximum of 100 per cent of the wage or 300 rubles. In other parts of the Far North, the supplement was 10 per cent of the wage for each six months until the supplement reached 60 per cent of the wage, and from then on a 10 per cent increase for each year of work, the maximum in this case was 80 per cent of the wage or 240 rubles. In regions equivalent to the Far North, the increment was 10 per cent of the wage for each year of work with a maximum of 50 per cent of the wage or 150 rubles a month. The wage or salary used as the basis of the computation is earnings, including bonuses but excluding the regional coefficient and the regional supplement. The supplement is applied only to earnings up to 300 rubles a month.

In addition, workers in the Far North and equivalent get extra vacation time of 12 to 18 days and once in three years their round-trip fare to the place of vacation is paid by the enterprise, starting with the third year of work for the enterprise. (Biulleten' 1968, No. 2, pp. 5-23).

The length of service supplement was introduced for Archangelsk Oblast, the Karelian ASSR and the Komi ASSR (other than regions within them classified as Far North and equivalent regions) in 1972 in the amounts of 10 per cent of salary (up to 300 rubles) per year with a maximum of 30 per cent. (Biulleten', 1972, No. 10, pp. 3-4). During the current plan period, length of service supplements are to be introduced in the Far East, (Guidelines for the Tenth Five Year Plan, CDSP XXVIII-17, pp. 13-14.)

V. Incentive Provisions

"As long as the bosses pretend they are paying us a decent wage, we will pretend we are working," Hendrick Smith (1976, p. 215) reports as a Soviet workers' saying of the 1970's. Along with raising wages, the Soviet authorities have been trying to make the wage and incentive system such as to make people work harder and better. While this is nothing new, the increased importance of technological progress and productivity gains as major remaining sources for Soviet growth makes the problem more urgent than it has been in the past. Ninety per cent of the growth in industrial output during 1976-1980 is to be achieved through productivity gains.

All aspects of the basic wage and salary scales and the various supplements for conditions of work, region of work, of course, include incentives directed toward choice of job, raising qualifications in order to be promoted, taking work in unpleasant regions or unpleasant conditions. In this section focus is primarily on provisions for extra pay designed to elicit improved performance in the same job.

Before proceeding, it is necessary to describe the source of bonus and other incentive payments, since this has become rather complex. Until the 1965 economic reforms, the major source of bonuses for wage earners and salaried workers was the wage fund. The wage fund was set in the plan on the basis of allowing for bonuses for fulfillment of the plan. If the output plan was overfulfilled, the wage fund could be increased by 0.6 per cent to 0.9 per cent, depending on the industry, for each percentage of plan fulfillment, permitting bonuses for above plan fulfillment. If the plan was underfulfilled the wage fund would be reduced. As the 1965

economic reform was introduced in each enterprise, the bonus fund derived from profits became the major source of bonuses for salaried workers and they were no longer paid any bonuses from the wage fund. The regular bonus system for wage earners continued to be paid from the wage fund but they could also receive bonuses from the bonus fund.

The bonus fund is a special account into which the enterprise may transfer some of its profits for the purpose of paying bonuses. The method of determining the size of the bonus fund is extremely complex and I shall try only to give a general idea of the criteria used in determining the size of the bonus fund. Originally, the size of the bonus fund was related to fulfillment or overfulfillment of two targets: (1) sales (or, in some cases, total profits) and (2) the rate of profit (profit as a percentage of the stock of fixed and working capital). Points earned on these two targets were applied to the current wage fund to determine the size of the bonus fund.

During 1971-1975, there were three principal targets: (1) sales (or total profits); (2) profit rate and (3) labor productivity. In some cases additional targets were established for (4) percentage of output to consist of highest quality products and/or (5) increasing the output of consumer goods, where these were not the main product. In addition, the points that could be earned relating to each target depended, first, on the relation of the plan adopted for each target for a given year (say 1974) to the original five-year plan target for that year and finally, on the relation of actual performance to the annual plan for each target. Generally, more points could be earned by proposing a higher target than the original five-year plan target and fulfilling it than by proposing an easier target and over-fulfilling it. The points earned were applied as a percentage of the total wage

bill in the year preceding the five year plan, i.e., in 1970. (Berliner, 1976, pp. 429-430 gives a clear explanation. See also Schroeder, 1973, pp. 31-33.)

In the current, 1976-1980 period, the variety of targets is greater. Ministries are supposed to set the most appropriate targets for the particular enterprise or group of enterprises, usually from among the following six targets. (1) growth in labor productivity; (2) raising the percentage of first-quality products; (3) the profit rate; (4) growth in sales or in total profits; (5) lowering the cost of production; and (6) mastering of productive capacity within the normed period. Not more than three targets, or four in some industries, should be set for an individual enterprise. In line with the emphasis of the current plan on "effectiveness of production" and "quality", the instructions state that, as a rule, the first two targets should be included among the three or four targets for any enterprise. The points earned are now applied as a percentage of the bonus fund planned for the year preceeding the five year plan, i.e. 1975. Also, the bonus fund is stated now to include, in addition to the profits transferred according to the rules, the sum of bonuses paid from the wage fund to wage earners. The detailed instructions on all this are in (Biulleten', 1977, No. 4, pp. 13-31.)

The major uses of the bonus fund are for regular bonuses for managerial and technical personnel and office workers and for year-end bonuses paid to all enterprise personnel, i.e. including wage earners, on the basis of the performance of the enterprise as a whole or of the unit of it in which the worker works. The bonus fund is also used for various special achievement bonuses paid to individuals contributing to the achievement especially important tasks, for prizes for winners in intra-enterprise socialist competitions, and for special welfare payments to employees needing assistance.

In addition to the wage fund and bonus fund, there are a variety of special incentive funds, including incentives for innovation, for producing consumer goods from scrap and waste, prizes for the enterprise winning inter-enterprise socialist competitions. The size of the bonus fund and the various special incentive funds used in 1970 and 1974 in relation to the wage bill is shown in Table 5. The funds used exclusively or primarily for the payments of bonuses totalled 5,221 million rubles in 1970, which was 10.3 per cent of the total wage bill for wage earners and salaried workers. By 1974, the corresponding figures were 6,835 million rubles or 11.0 per cent of the wage bill. This does not include the bonuses and piece rate earnings from above norm output earned by wage earners, which are paid from the wage fund. In addition to the funds used for payment of money incentives to individuals, there is the fund for social-cultural measures based on profits (now calculated as a percentage of the bonus incentive fund) and some smaller funds for similar purposes. These amounted to 3.5 per cent of the industrial wage bill in 1970 and to 2.7 per cent in 1974. (Table 5).

For wage earners, while the differentials in basic rates have generally been narrowed, wider leeway has been provided for earnings above the basic rate. For wage earners, incentive provisions include piece rates, a combined piece-rate and bonus system and a bonus system for workers paid on an hourly or daily basis. The piece rates generally relate to output or to the performance of a given task in a specified period. Piece-rate earnings may be based on individual performance or on the performance of the brigade. Bonuses are generally related to output but there are a variety of indicators which are used. Common indicators, in addition to fulfilling or over fulfilling output norms are economies of fuel or other materials, and increasing the percentage of output classified as highest quality products. Some of the new incentive systems are discussed in more detail below.

TABLE 5
THE WAGE BILL AND INCENTIVE FUNDS USED IN
SOVIET INDUSTRY, 1970 AND 1974

	1970	1974
Wage bill, mil. rubles	50,549	62,381
Funds for payments of bonuses, mil. rubles		
The bonus fund	3,739	5,247
Fund for producing consumer goods from waste ^a	274	169
Socialist competition prizes	205	202
Innovation bonus fund	156	209
Local industry development fund	208	199
Other special funds	<u>639</u>	<u>809</u>
Total mil. rubles	5,221	6,835
Total % of wage bill	10.3	11.0
Funds for housing and social/cultural measures, mil. rubles		
The fund for housing and social-cultural measures	1,620	1,658
Enterprise fund for improving cultural and living conditions	94	38
Housing fund from above-plan profits	<u>37</u>	<u>17</u>
Total mil. rubles	1,751	1,713
Total % of wage bill	3.5	2.7

a) Profits from the sale of such goods are retained by the enterprise.

Sources: Vestnik Statistiki, 1972, No. 10, p. 94 and 1976, No. 8, p. 89;
Tsu, Narodnoe Khoziaistvo SSSR 1974 g., p. 753.

The regular bonus system for top management and others in the administrative apparatus of the enterprise is linked to fulfillment or overfulfillment of the key targets used in determining the size of the bonus fund. That is, during 1971-1975 principally sales (or profits), the rate of profit, and labor productivity. Ministries may set additional criteria. The criteria for bonuses for other engineering and technical personnel and office workers are established by the director of the enterprise, in agreement with the trade union, in relation to the concrete tasks of each unit of the enterprise and their importance in raising the effectiveness of production.

The size of the regular bonus and of all other bonuses for the director and other top managerial people is determined by higher administrative organs. The bonus rates for other personnel is decided by the director with the agreement of the trade union. The bonus rate is supposed to be differentiated among the various units on the basis of the volume of work, the complexity of work, the level of utilization of productive assets, and the importance of the unit. Within a given unit the bonus rate (as a percentage of salary) is uniform for all working in that unit. Actual bonus earnings, within a unit, may vary if the different workers fulfill their tasks in different degrees.

The year-end bonus is, in principle, supposed to be determined for each individual on the basis of his work and contribution. There are complaints both about too great a differentiation and about too much egalitarianism in the distribution of such bonuses. This bonus is also supposed to take into account length of work in the enterprise. The year-end bonus is considered an aid in reducing turnover, in that it is supposed to be worth sticking it out until at least the end of the year when it is paid and in that the size of the bonus increases with the number of years worked. One author at least

finds that the length of service provision is not used enough for the first five years of employment, since turnover is greatest among those with under 3 to 5 years of service. (Volkov, 1974, pp. 294-95).

It is reported that in the early 1970's year-end bonus payments amount to around 35 per cent of the bonus fund. The average size of the year-end bonus in 1974 in industry was 45 per cent of monthly earnings. The author suggests it should be increased to one or one and a half month's earnings. (Volkov, 1974, pp. 294-95).

In addition to the regular bonus systems of the bonus fund and the wage earner bonuses from the wage fund, there are about 30 additional systems providing for bonuses for various purposes. The amounts of these other bonuses were about 24 per cent of all funds (except the wage fund) used for bonuses (Table 5). These include bonuses for innovation; for the production and delivery of goods for exports; for economizing on fuel; for the production of consumer goods, where these are not the basic product; for fulfilling important tasks set by the ministry and others.

The first wage reform set limits on the amount of bonus that an individual could earn and the second wage reform increased the limits and, in some cases, apparently abolished limits. For wage earners, the first reform limited regular bonuses to 30 per cent of the base rate or piece-work earnings in light industry and to 40 per cent in heavy industry (Chapman, 1970, p. 36). These limits did not apply to various special bonuses, such as bonuses for innovation and introduction of new techniques. The new limits on regular bonuses paid from the wage fund are 40 per cent to 60 per cent of the base rate or piece-work earnings but there is no limit on the amount of bonuses wage earners can be paid from the bonus fund based on the enterprise's profits (Kostin, 1973, p. 24).

For managerial and technical personnel and office workers, the general limit set in the first reform was 40 per cent of the base salary in light industry and 60 per cent on heavy industry (Chapman, 1970, p. 9). The maximum bonus that could be paid to an individual, including bonuses for innovations was 75 per cent of his salary (Kostin, 1960, p. 69). The situation is not entirely clear for more recent years. The 40-60 per cent of salary limitation has not been mentioned in any of the current literature concerning the second wage reform and so presumably it is no longer in effect. There are specific limits to some of the supplementary bonuses. The limit on individual bonuses for innovation is 6 times the basic monthly wage or salary rate--i.e., 50 per cent of the annual wage or salary--in the chemical, petrochemical, oil refining and machinery industries, and it is 3 times the basic monthly wage or salary rate--i.e., 25 per cent of the annual--in other industries. (Biulleten', 1972, No. 5, pp. 5-18). These amounts may be paid above the limits on bonuses for wage earners and above the bonus for economic results for other personnel.

There are some limits to the amount of bonus that can be earned by top managerial personnel. This includes the director, the deputy director, the chief engineer, the head of the planning department, the chief economist, the chief accountant, the most senior accountant, and the chief of the department of technical control. (Kletskii, 1974, pp. 220-221). In the first place, since April, 1970, all types of bonuses for this group are determined in higher administrative organs. (Sotsialisticheskii trud, 1970, No. 11, p. 75). The rate of the regular bonus for these people cannot exceed the average level of bonus rate they establish for the other workers in the enterprise (in percentage of salary). And there is a penalty relating to over-expenditure of the wage fund. For those responsible, the regular bonus is reduced by up to 50 per cent when the wage fund is overspent. Then there are specific

limits which apparently refer to the 30-odd supplementary provisions, but not to the regular bonuses from the bonus fund.⁹ The limits on the amounts the leading managerial personnel can earn from these supplementary bonuses are four times the basic monthly salary (33.3 per cent of the annual salary). For the director, deputy director and chief engineer this limit may be increased by an additional two months' salary (bringing the total to 50 per cent of annual salary) but only in the case of bonuses for innovations and for winnings in national and republican socialist competitions. (Sotsialisticheskii trud, 1970, No. 11, pp. 74-75 and 1971, No. 1, p. 66).

It is not clear whether this strict control over and limits on top managerial bonuses is related to the general limit on increasing wages and salaries above 200-230 rubles or is a response to complaints that the top management tended to hog the bonuses for themselves.¹⁰ They evidently had the opportunity and the temptation to do so.

During the first wage reform, the average share of the basic rate in earnings of wage earners increased from 57.4 per cent to 76.6 per cent; i.e., bonuses and above-norm piecework earnings decreased. (Volkov, 1974, p. 241). Between 1961 and 1971, the share of the basic rate in wage earnings decreased from 73.2 to 61.2 per cent. In the latter year, extra pay for norm fulfillment and overfulfillment amounted to 11.6 per cent, premiums from the wage fund to 11.0 per cent, premiums from the bonus fund to 5.2 per cent and other forms of pay (for over time, night shift, vacation, etc.) to 11.0 per cent of the average wage earner's wage. (Kostin, 1973, p. 13). In the second reform the basic wage rate was to be increased to 76 per cent, on average, of industrial wage earners earnings.

As a result of the first wage reform, the share of bonuses in earnings of managerial and technical personnel fell from 10.9 per cent in 1956 to

to 7.7 per cent in 1961 (Chapman, 1970, p. 97). After this, it began to rise, particularly after the economic reforms begun in 1965. It is reported to have been 15.7 per cent in 1965 and 34.5 per cent in 1970 (Berliner, 1976, p. 478). The second reform was to raise the share of the basic salary of managerial and technical personnel from 74 per cent to 78-82 per cent of earnings (Volkov, 1974, p. 270).

An essential aspect of the wage reform is that increased basic rates are to be accompanied by increased performance norms. Earnings are not to increase as much as the increase in basic rates and are not to increase as much as labor productivity. Labor productivity gains are the source of increased earnings. In both wage reforms, before an enterprise could introduce the new pay scales it had to make extensive preparations to attempt to squeeze out reserves, to improve labor productivity, and to stiffen performance norms. In the second reform, for instance, norms were to be raised by 3 per cent in the coal industry, by 7 to 11 per cent in transport, and by 24.2 per cent in the machinery industry (Volkov, 1974, p. 383). In both reforms, there was a great deal of writing about the necessity to establish technically based norms and to establish targets for their introduction and to reduce the number of norms simply based on past experience. More attention appears to be paid to this in practice in the second than in the first reform.

By 1972, as a result of outdated norms and wage rates, average norm fulfillment had reached 136 per cent (Shkurko, 1975, p. 8). Among those enterprises where the transition to the new wage system had been completed in 1974, it is reported that the quality of the norms had been significantly improved and as a result -- the percentage of norm overfulfillment was reduced from 135 per cent to 118 per cent while earnings rose by 11.8 per cent (Sotissalisticeskii trud, 1975, No. 12, p. 4).

Some new measures specifically aimed at overcoming resistance to norm revision and some specifically aimed at improving labor productivity and eliminating excessive workers have recently been introduced. As mentioned, the success of the wage reform as viewed by the authorities, turns heavily on improved norm setting. Resistance to change in output norms is widespread, and not only in the USSR. One illustration is the case of three brigades in a Moscow textile factory who shut down their assembly lines for three hours to protest the introduction of automatic knitting machines with higher work norms, resulting in lower pay. The worker who described this to Hedrick Smith reported that the technique of Soviet management was artificially to select one brigade as model workers and to grant them large pay bonuses and other privileges based on phony output figures on the new machine. These results then become the pretext for raising norms for the other three brigades. The ordinary brigades found they were being finagled; hence the protest. (Smith, 1976, pp. 224-225).

Formerly there were no direct inducements for enterprise management to impose technically based norms and, while there were targets for their introduction, there were no penalties for failure to meet them. (Kirsch, 1972, p. 66). The inclusion of labor productivity as a criterion for both (a) the level of top management salaries (through the classification of the enterprises into groups) and (b) the size of the top management's bonus may provide some stimulus for this. Since 1965, the director of an enterprise may pay extra wages for up to six months for mastering new norms introduced in connection with organizational and technological changes or in the case of revising outdated norms. It is argued that this enables the workers to see the connection between the introduction of such measures or the revision of norms and higher

earnings (Volkov, 1974, pp. 227-228). (Possibly the Moscow textile workers saw this only too well.) During the second wage reform, provisions were introduced providing for the raising of piece rates by varying amounts up to 20 per cent in a number of industries where the output norms are at or above the industry norms or where the labor input norms are at or below the industry norms.¹¹ Evidently to do this requires specific authorization of higher administrative authorities. Rates in some cases are also raised on the basis of the intensity of the work for workers on production lines under forced pace of work if the norms are technically established ones. (Sotsialisticheskii trud, 1973, No. 8, p. 138).

Pay provisions were also improved for mnogostanochniki (those who tend more than one machine, loom or other piece of equipment). In 1960 wage supplement of 0.4-0.6 per cent for each per cent of additional machines tended was established for persons taking on additional machines. This meant the piece-rate for work on an additional machine could not be above 40 to 60 per cent of the basic piece-rate. This was found an insufficient incentive and many enterprises began to experience a shortage of labor and idle equipment. It is also argued that the number and technological level of the machinery has increased so that it requires a higher degree of skill and knowledge now than formerly to take on additional machines. The new provisions allow an increment of 0.8-1.0 per cent of the rates for each percentage by which the number of machines exceeds the norm for workers in mass line production and large serial production in the machinery industry for both time and piece workers working on normed tasks and in some other cases. In other cases, for piece workers the increment is 0.5-0.9 per cent and for time workers, 0.4-0.8 per cent. (Sotsialisticheskii trud, 1973, No. 8, pp. 135-137). Machine tool operators, whose rates were raised by about 15 per cent over the rates for other workers in the machinery industry of

corresponding grade in 1968, (Biulleten', 1968, NO. 2, pp. 3-4) in response to an extreme shortage of such workers and high turnover among them, are to continue to have preferential rates; they are to be 12 per cent above the corresponding rates for others in machinery and metal fabrication. (Volkov, 1974, p. 271). This also may be said to represent a recognition of the monotony of the job, a "subjective" factor of the kind Leonard Kirsch found to be generally ignored in Soviet wage setting (Kirsch, 1972, ch. 6).

The provisions aimed at improving labor productivity and eliminating excessive labor began with the experiment at the Shchekino chemical enterprise in 1967. Basically, this guaranteed that the same size wage fund could be kept in effect for a specified number of years and that savings in the wage fund achieved through reducing the number of workers or other types of measures could be used to pay the remaining workers more to compensate them for the additional occupations--the combined occupation provision¹² or who extends his sphere of work or service can be increased by up to 30 per cent. A great deal of success was proclaimed for this experiment at Shchekino and the experiment was adopted by a number of other enterprises.¹³ The provision for raising wages of persons performing combined occupations, etc., has evidently been extended to all enterprises who wish to make use of it it, though probably they need specific permission to do so. The director may also increase the salary by up to 30 per cent of heads of sections, foremen and others responsible for improving productivity and reducing the number of workers in their sections or shop and may pay one-time bonuses to others who contribute in this way. All such pay raises and bonuses must come from economies in the wage bill resulting from such measures (Batkaev, 1973, pp. 35-36).

There are a number of other experimental wage systems in effect in individual enterprises or groups of enterprises. I shall mention only one, which is

aimed at reducing storming. At the electrical-technical plant in Tol'iata special bonuses are paid from the bonus fund for achieving the proper rhythm of work. As a result of these bonuses and the organizational measures introduced the percentage of output produced in the first ten days of the month rose from 22-23 per cent in 1970 to 32-33 per cent in 1972. "The enterprise became one of the first in this respect in the ministry." (Kostin, 1973, p. 36).

There seems generally an effort to make the wage and incentive system more flexible and adaptable to particular requirements. But the center does not want to lose control and there is a counter tendency to make every detail subject to approval at higher administrative levels. It is complained of the new instructions concerning adopting the Shchekino system that they are incomprehensible. For instance, it is emphasized that adoption of the Shchekino method is up to the enterprise itself but that all the other paragraphs indicate that no step can be taken without a higher department's approval (Pravda, March 28, 1977 in CDSP XXIX-13, p. 14). Aganbegian also makes a similar complaint that experiments are being held up by the complexity of the instructions and the fact that every change, even an insignificant one "requires paperwork of such proportions as to make even the most optimistic executives lose their taste for change." (Literaturnaia gazeta, May 4, 1977 in CDSP XXIX-19, p. 7).

How effective the new wage and incentive systems will be in stimulating harder and better work is not yet clear. Labor productivity in industry grew by 6.0 per cent a year during 1970-75. This was less than the planned increase of 6.8 per cent but higher than the rates of growth in labor productivity in earlier recent periods. The rate of growth of labor productivity was 4.6 per cent a year during 1960-65 and 5.7 per cent during 1965-1970.¹⁴ And the growth in labor productivity was greater than the growth of money wages of

3.89 per cent a year during 1970-75. The growth of wages, also, was less than the planned increase of something over 4 per cent (Kostin, 1973, p. 9). The preparatory measures and norm revisions undertaken in connection with the wage reform may well have had positive effects on productivity. Whether this was largely a temporary gain or whether the revised wage system will continue to illicit improved productivity in the future is a question to follow.

"How to Outwit the Idler", the title of a May 1977 article by Academician Aganbegian (Literaturnaia gazeta, May 4, 1977; CDSP XXIX-19, pp. 6-8) suggests that all these attempts to improve incentives may not have gotten to the root of the problem of the Soviet worker's proclivity to "pretend we are working" even though their wages have been raised. And Popov also complains that the pay is not effectively geared at rewarding productivity. "It appears that the existing pay system rewards average productivity rather than superior productivity and is too lenient toward those who work poorly." (Kommunist, 1976, No. 18 in CDSP XXIX-10, p. 10).

The leadership and the ministers want differentiated rewards based on actual performance as a stimulus to effort. The workers apparently tend to be egalitarian and to cooperate to resist norm changes. The bosses are torn between these pressures and may fear to impair morale by raising norms or by differentiating bonuses too much.

The Guidelines for the Tenth Five Year Plan include provisions to improve the pay system and enhance its incentive effect, "consistently to ensure an increase in their incentive role as far as raising labor productivity, accelerating scientific and technical progress, improving the quality of output and reducing its unit cost are concerned." (CDSP XXVII-17, pp. 13-14.)

VI. THE LEVEL AND DISTRIBUTION OF EARNINGS

The net real wage of Soviet industrial workers has been below the level in the other East European socialist countries -- Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland and Romania. While the Soviet industrial worker's position vis a vis those in these other countries was improving, even in 1973 the real net earnings of the Soviet industrial workers were only 80 per cent of average earnings in the other countries, according to calculations of Friedrich Levchik. See Table 6. This would provide grounds in addition to envy of the West and general dissatisfaction with living standards at home to raise Soviet wages.

Level of Earnings

The growth in money wages for Soviet industrial wage earners and salaried employees between 1970 and 1975 was 21 per cent. If this is deflated by the official Soviet index of retail prices, which has shown very little change since 1955, the increase in real wages was 20.6 per cent. If instead the Schroeder and Severin index of the cost of living is used the increase in industrial real wages was not quite 12 per cent between 1970 and 1975. See Table 7. Even the Schroeder and Severin index, as they say, does not take into account the price increases that result from such phenomena as the disappearance from the market of the low-priced types of a given product and their replacement with higher-priced goods without a commensurate increase in quality nor prices on the illegal markets. Thus, the increase in real wages as discussed here and shown in Table 7 is probably overstated. Over the twenty year period 1955 to 1970, money wages more than doubled while real wages, deflating with the Schroeder and Severin index rose by 60 per cent,

TABLE 6

COMPARATIVE LEVELS OF REAL NET^a AVERAGE MONTHLY EARNINGS IN INDUSTRY,
USSR, SOCIALIST EAST EUROPE, AND AUSTRIA

Socialist East Europe (excl. USSR) = 100^b

	<u>1960</u>	<u>1973</u>
Bulgaria	81.5	90.1
Czechoslovakia	106.7	100.1
German Democratic Republic	112.4	121.5
Hungary	98.3	90.4
Poland	97.9	98.0
Romania	83.4	92.4
USSR	68.8	79.6
Austria	127.4	160.2

^a Net of taxes and social security contributions.

^b Weighted by number of industrial workers in each country. The change over time for each country is based on the change in money earnings deflated by the official retail price index adjusted to include the cost of housing, where necessary. The exchange rates used to convert earnings for the socialist countries into a comparable currency are the 1964 non-commercial exchange rates applicable to East European tourists, diplomats, etc., agreed upon in COMECON. The exchange rate used to link the Austrian shilling to East European currencies is based on a 1964 study of consumption in Poland and Austria.

Source: Friedrich Levick talk at University of Pittsburgh, November 8, 1976.

an average annual increase of 2.38 percent.¹⁵ The most rapid increase was during 1965-1970 when the average rate of increase was 3.76 per cent. A large part of this growth is probably attributable to the increase of the minimum wage to 60 rubles in 1968.

The money and real wage figures relate to gross earnings. Income taxes have been reduced for several years but I do not know whether this has yet affected the percentage of earnings deducted for income tax.¹⁶

For all wage earners and salaried workers, Aaron Vinokur has calculated from official statistics that average net family monetary income (including monetary receipts but not services from the social consumption fund.) per family member increased from 44.8 rubles in 1965 to 73.5 rubles in 1973 (Vinokur 1976, p. 27), an increase of 64 per cent in money terms. In real terms, using the Schroeder and Severin implicit price deflator, this would be an increase in real terms of 48 per cent at most. Over the same period, the increase in industrial earnings was 41 per cent in money terms and 28 per cent at most in real terms.

The real value of the increased earnings (or family income) depends directly on the adequacy of the supply and quality of the goods and services available. This is always a rather crucial problem. And, indeed, so far as quality is concerned, at the root of the inclusion in recent years of quality of output as one of the criteria for the bonus fund and for bonus payments. It might be noted that among industrial wage earner families, the proportion of their money expenditures devoted to savings increased from 5.3 per cent in 1970 to 7.3 per cent in 1974 (Narkhoz-74, p. 605). This is often interpreted as a response to the lack of goods or the lack of satisfactory quality goods to spend their money on. Other factors may be saving to buy a car, to construct a private dacha or to buy an apartment. And presumably as incomes rise the per cent saved also rises.¹⁷

TABLE 7

MONEY AND REAL WAGES OF SOVIET INDUSTRIAL WAGE EARNERS
AND SALARIED WORKERS, 1955-1975

	Money Wages		Price Index		Real Wage Index	
	Rubles per Month	Index	Official A	S and S ^a B	A	B
1955	78.3	100.0	100.0	100.0	100.0	100.0
1960	91.3	116.6	100.5	104.6	116.0	111.5
1965	104.2	133.1	101.5	112.0	131.1	118.8
1970	133.6	170.6	100.9	119.4	169.1	142.9
1975	162.2	207.1	101.5	129.5	204.0	159.9

Average Annual Rates of Growth

1955-60	3.12		0.10	0.90	3.01	2.2
1960-65	2.68		0.20	1.36	2.47	1.2
1965-70	5.09		- 0.20	1.28	5.22	3.7
1970-75	3.96		0.11	1.64	3.81	2.2
1955-75	3.76		0.30	1.30	3.63	2.3

a

Price Index constructed by Schroeder and Severin

Sources: Money Wages: Table 8 below.

Price Indices: Schroeder and Severin, 1976, p. 631.

Inter-Industrial differences in Wages

Changes in earnings by industry since 1955 and the effect of this are shown in Table 7 and the effect of these changes on the structure of inter-industrial earnings are shown in Table 8. The most recent reform provided, generally for larger percentage increases in basic wage and salary rates in the light and food industries than in the heavy industries. The increase in the average weighted basic rates is reported to have been as follows:

	Wage Earners	Managerial and technical workers
	%	%
All industry	28	20
Energy	18.3	15.0
Coal	15.6	9.4
Ferrous metallurgy	20.5	--
Non-ferrous metallurgy	25.9	16.2
Machinery	30.6	23.8
Light and textile industries	30.7	25.5
Food industry	29.0	--
Meat and milk industry	27.8	23.6

(Shkurko, 1975, p. 10). The high increase for wage earners in the machinery industry is explained as being required by the necessity for a significant improvement in the norms.

Yet the increases in average earnings between 1970 and 1975 seem remarkably similar for the different industries. (This is true also of the period 1972 to 1975). Over a longer period, there has been some relative gain in earnings for the women-dominated, traditionally low-paid light and

TABLE 8

AVERAGE EARNINGS OF WAGE EARNERS AND SALARIED WORKERS
BY BRANCH OF INDUSTRY, USSR, 1955-1975^a

	Rubles Per Month					Index Between Stated Years		
	1955	1961	1966	1970	1975	1970/ 1966	1975/ 1970	1975/ 1955
All Industry	78.3	94.5	106.8	133.6	162.2	1.25	1.21	2.0
Electric energy	85.0	101.5	113.2	138.2	167.3	1.22	1.21	1.9
Coal mining	126.8	170.7	195.3	223.5	274.9	1.14	1.23	2.1
Ferrous metal- lurgy	102.0	117.2	129.0	153.4	188.0	1.19	1.23	1.8
Chemicals	83.7	98.2	110.0	136.8	165.2	1.24	1.21	1.9
Machinery	84.0	94.8	106.5	134.4	164.1	1.26	1.22	1.9
Wood and paper	73.6	91.4	105.3	135.3	169.3	1.28	1.25	2.3
Timber	79.4	98.9	117.4	147.2	241.2	1.25	1.64	3.0
Wood working	64.7	82.7	93.8	125.1	155.3	1.33	1.24	2.4
Cellulose and paper	85.2	98.0	106.2	130.6	163.8	1.23	1.25	1.9
Construction materials	69.1	89.4	104.3	138.2	165.4	1.33	1.20	2.3
Light Industries	57.6	71.1	81.3	103.3	124.6	1.27	1.21	2.1
Textiles	62.2	74.7	83.8	107.9	129.7	1.29	1.20	2.0
Garments	49.0	64.3	76.1	94.8	115.5	1.25	1.22	2.3
Shoes	56.7	72.0	85.1	110.2	131.9	1.29	1.20	2.3
Food Industries	61.0	80.7	92.7	118.5	145.9	1.28	1.23	2.3
Milling	---	---	---	108.0	129.2	---	1.20	---
Bread	---	---	---	97.6	126.5	---	1.30	---
Beverages	---	---	---	108.2	122.9	---	1.14	---
Meat ^b	58.1	73.6	86.6	112.0	134.6	1.29	1.20	2.3
Sugar	52.0	71.0	81.1	---	---	---	---	---
Tobacco	---	---	---	121.6	136.3	---	1.12	---
Fish	109.2	155.1	181.2	---	---	---	---	---
Other food ^c	---	---	---	137.1	165.9	---	1.21	---

Notes and Sources to Table 8

- a. The figures for 1970 to 1975 include all bonuses from the bonus fund and other sources. The figures for 1955 to 1966 include bonuses from the bonus fund only for those enterprises who had transferred to the reformed system. I believe this means also that bonuses from the former "enterprise fund" are excluded.
- b. Meat and milk for 1970 and 1975
- c. Refers to all of food industry for which figures are not shown above.

Sources:

1955-1966: TSU, Trud v SSSR, 1968, pp. 140-144; 1970 and 1975: Vestnik statistiki, 1972, No. 11, pp. 93-94 and 1976, No. 8, p. 90.

food industries. Between 1961 and 1971, earnings in the light industries increased by about 70 per cent as compared with an increase of 50 per cent in the heavy industries. (Shkurko, 1975, p. 9). As Table 8 shows, between 1955 and 1975, the increase in earnings was generally above the average increase in the light and food industries. This was also true in construction materials and the wood related industries while the increase in earnings was below the average increase in electric energy, ferrous metallurgy, chemicals and machinery. The food industry has shown a gain in relative position from 78 per cent of industry-wide average earnings in 1955 to 90 per cent in 1975 (Table 9); the gain for the light industries has been less impressive.

In interpreting the inter-industrial levels of wages, it should be kept in mind that the geographical location of the various industries means that regional coefficients will play a different role in different industries. Data relating to 1962 showed that the regional factor was particularly significant in non-ferrous metallurgy and in lumbering (Chapman-70, p. 54). The process of extending the regional coefficients to the light and food industries has no doubt played a role in increases in these earnings. It is possible also that the 1975 earning figures do not entirely reflect the second wage reform since it was being completed during that year.

Occupational Differences in Earnings

Among occupational groups, the differential between the earnings of managerial-technical personnel and wage earners has been narrowing steadily since the end of World War II and was further narrowed during the second wage reform so that now managerial-technical personnel on average earn only 26 per cent more than wage earners. See Table 10. Office workers generally had earned more than wage earners during the pre-war period but in the post

TABLE 9

INTERINDUSTRIAL DIFFERENTIALS IN AVERAGE EARNINGS OF SOVIET
WAGE EARNERS AND SALARIED WORKERS, 1955-1976

In per cent of average earnings in industry					
	1955	1961	1966	1970	1976
All Industry	100	100	100	100	100
Electric energy	109	107	106	103	103
Coal mining	162	181	183	167	169
Ferrous Metallurgy	130	124	121	115	116
Chemicals	107	104	103	102	102
Machinery	107	100	100	101	101
Wood and paper	94	97	99	101	104
Timber	101	105	110	110	149
Wood working	83	88	88	94	96
Cellulose and paper	109	104	99	98	101
Construction materials	88	95	98	103	102
Light industries	74	75	76	77	77
Textiles	80	79	78	81	80
Garments	63	68	71	71	71
Shoes	72	76	80	82	81
Food industries	78	85	87	89	90
Milling	---	---	---	81	80
Bread	---	---	---	73	78
Beverages	---	---	---	81	76
Meat ^a	74	78	81	84	83
Sugar	66	75	76	---	---
Tobacco	---	---	---	91	84
Fish	139	164	169	---	---
Other foods ^b	---	---	---	103	102
Range	63-162	68-181	71-183	71-167	71-169
Range, excl. coal and fish	63-130	68-124	71-121	71-115	71-149

Source: Table 8

TABLE 10

RELATIONSHIP BETWEEN EARNINGS OF
WAGE EARNERS AND EARNINGS OF
MANAGERIAL-TECHNICAL PERSONNEL
AND OF OFFICE WORKERS IN SOVIET
INDUSTRY, 1945-1974

Average earnings of wage earners = 100

	<u>Average Earnings of Managerial-Technical Personnel</u>	<u>Average Earnings of Office Workers</u>
1945	230	101
1950	176	93
1955	166	89
1960	148	82
1965	142	83
1970	136	85
1971	134	84
1972	130	83
1973	127	81
1974	126	82

Sources: TSU, Trud v SSSR, 1968, pp. 136, 138-139;
TSU, Narodnoe Khoziaistvo SSSR v 1974g., p. 567.

TABLE 11

INDICATORS OF EARNINGS DISTRIBUTION OF ALL SOVIET WAGE
EARNERS AND SALARIED WORKERS, 1946-P1975

Ratio between earnings at indicated percentiles of the distribution

	$\frac{P90}{P10}$	$\frac{P90}{P50}$		$\frac{P10}{P50}$	
	Reported	Computed ^a		Computed ^a	
		M	C	M	C
1946	7.24	--	2.7	--	.38
1956	4.4	2.0	2.2	.41	.46
1959	4.2	2.0	2.0	.47	.49
1961	(3.9-4.2) ^b	2.0	2.0	.46	.50
1964	3.7	1.8	1.9	.54	.53
1966	3.26	1.9	1.8	.58	.55
1968	2.7	1.7	1.8	.61	.56
1970	3.2	--	1.7	--	.58
P1975	2.9	--	--	--	--

a. M refers to McAuley's computations and C refers to Chapman's.

b. Computed, 3.9 by Chapman, 4.2 by McAuley

Sources: Sarkisian, 1972, pp. 125-26, 132; Loznevaia, 1968, p. 129; Rimashevskaja, 1965, p. 43; McAuley, 1977, p. 225; Chapman, 1977, p. 261.

war years office workers earnings have been around 81 to 85 per cent of wage earner earnings since 1960. It is not clear whether the recent wage reform has had any significant effect on this relationship.

Inter-personal Distribution of Earnings

There has been a remarkable narrowing in Soviet income differentials during the postwar period. Information on this matter has recently, through some academic sleuthing, become available.¹⁸ Most of it relates to all wage earners and salaried workers rather than to industrial workers only but it should throw some light on the results of the wage reforms and the substantial rise in the minimum wage.

Summary indicators of the earnings distribution for all Soviet wage earners and salaried workers are shown in Table 11. First is shown the decile ratio.¹⁹ as reported in Soviet sources, for several years beginning with 1946 and as anticipated for 1975. The 1946 decile ratio of 7.24 indicates a very wide dispersion of earnings, though it may not be very reliable.²⁰ The decile ratio had fallen substantially to 4.4 in 1956.

The decile ratio continued to decrease with a particularly sharp decrease in 1968 as a result of the 50 per cent increase in the minimum wage in January of that year. From the 1968 level of 2.7, the decile ratio rose to 3.2 in 1970 and was expected to fall again to 2.9 as a result of the second wage reform.

The second measure shown in Table 11 shows that changes in the relationship between the earnings at the ninth decile and median earnings.²¹ These are computed by McAuley and myself and may not be entirely consistent with the figures reported in Soviet sources. They indicate a decline more or less throughout the period. The final measure shows the earnings of the first decile as a percentage of the median. While the first decile was under half the median up until about 1960 in more recent years it has been over half.

These measures show that more of the increase in equality of distribution can be attributed to large increases in earnings of the low paid than to the slower relative increases in the earnings of the highly paid. This is not unexpected given the very substantial rise in the minimum wage which has taken place since the late 1940's or even since 1956.

To put these figures into perspective, among American non-agricultural wage earners and salaried workers who worked full time the decile ratio in 1972 was 4.48. The decile ratios for earnings in the state sector in East Europe in 1970 or the late 1960's were as follows: Poland 3.23; Yugoslavia 3.2; Bulgaria 2.4; Czechoslovakia 2.4; and Romania 2.3 (Chapman, 1977, p. 267; Wiles, 1974 a)

Other measures of earnings differentials have been reported for certain years. Thus, the ratio of the average earnings of the ten per cent with the highest earnings to the average earnings of the ten per cent with the lowest earnings is reported to have been 8:1 in 1956, 5.8:1 in 1959, and 5:1 in 1968 and was expected to be 4:1 in 1975. The ratio of the average earnings of the highest paid 25 per cent (quartile) to the earnings of the lowest paid quartile is reported to have been 4.5:1 in 1956, 3.2:1 in 1968 and expected to be 3:1 in 1975. (Mstislavskii, 1961, p. 86; Kunel'skii, 1972, p. 69).

These figures indicate a remarkable decrease in inequality of earnings from a level of inequality in 1947 much higher than the American (in 1972) and in 1956 of about the American level of inequality (in 1972) to a level in recent years comparable to that of Poland and Czechoslovakia.

The distribution of earnings among industrial wage earners alone is considerably narrower than for all wage earners and salaried workers. Among industrial wage earners, the ratio of the average earnings of the highest

paid ten per cent to the average earnings of the lowest paid ten per cent was 3.4 in 1924, 3.7 in 1959 and 2.8 in 1961. (Chapman, 1970, p. 66). Unfortunately, there do not seem to be more recent figures.

The 1975 distribution of earnings among industrial wage earners and salaried workers was presumably narrower than among all wage earners and salaried workers since the 70 ruble minimum had not yet been applied in the non-material branches. Also, those with the very highest incomes are not in industry, though there are probably few enough of them so that they would be above the ninth decile level and hence would not affect the measures shown.

For the future, the extension of the minimum wage of 70 rubles and the second wage reform to the service sector should contribute to a further decrease in inequality of earnings. On the other hand, if the not very specific measures mentioned in the Guidelines for the Tenth Five Year Plan to improve other aspects of the wage and incentive structure mean that wages and salaries above 200-230 rubles are being or are to be raised, this would tend to increase the degree of inequality.

All of the above comparisons relate to differentials in money earnings. They do not take into account the income tax, which is mildly progressive with a maximum marginal rate of 13 per cent of monthly earnings above 100 rubles. The distribution of net earnings would then be somewhat more equal.

The comparisons also do not take into account the possible influence on real differences in income of the price structure, which may be more favorable to the patterns of consumption of some income and occupational groups than of others. The heavily subsidized prices of meat and dairy products is probably the most important case in recent years. The less well paid presumably gain

more in real terms from these low prices than the well paid. The decile ratio for 1946 should be interpreted in light of the fact that wartime rationing was still in effect, which on the whole should have benefitted the poor more than the rich, since the latter had more to spend on the high-priced non-rationed goods on the collective farm market. Differences in price structure and tax systems between countries should also be taken into account in cross-country comparison of earnings distributions.

What are the implications of this narrowing in earnings differentials for differentials in per capita family income. Generally, among the non-kholkhoz population, per capita family income is somewhat less equally distributed than earnings, owing largely to differences in the size of families and in the number of working members. From the 1959 decile ratio of earnings of 4.2 and coefficients relating the deciles of family income to the deciles of earnings for 1958, a decile ratio of per capita income of 4.7 can be estimated for 1959; similarly the decile ratio of per capita family income in 1966 can be computed at 3.92 from the 1966 earnings decile ratio and the 1967 relationships between earnings and incomes deciles.²² McAuley calculates the decile ratio of money income per capita in non-agricultural households in 1958 at 4.1 for individuals and in 1967 at 3.1 for individuals and at 3.0 for families. (McAuley, 1977, p. 228). The figures for individuals relate to the distribution of members of families by level of per capita income; the figures for families relate to the distribution of families by level of per capita income.

Official statements give us this further bit of information. The percentage of the population with a per capita income of over 100 rubles a month was only 4 per cent in 1965, was about one-third in 1976 and will be almost one-half by 1980. (Kunel'skii, 1977, p. 10; Brezhnev, October 25, 1976, p. 4).

Probably money receipts and free services from the social consumption fund are included. McAuley's reconstruction of the 1967 income of money income among non-farm families indicates about ten per cent received over 100 rubles but when farm families and non-farm families are combined, less than ten per cent had a per capita money income of 100 rubles (McAuley, 1977, pp. 227-228, 234).

VII. CONCLUSIONS AND SOME QUESTIONS

As we have seen, the level of real earnings of Soviet industrial workers has risen very respectably and the differentials in wage and salary rates and in earnings have become considerably narrower over the past decade or so. This appears to be in line with official policy to "eliminate poverty" and to narrow the differentials between the highly paid and the less well paid. It reflects, at the same time, the judgement of Soviet leaders and of those concerned with labor and wages of the appropriate differentials for "payment according to work" under present conditions of the (planned) demand for and the supplies of labor of different kinds and skills. They are particularly concerned with the effect of the wage system in stimulating harder and better work.

It is on this latter point that I wish to raise some questions. As the labor economics textbooks tell us, the supply curve of labor is positively sloped with respect to the price effects of a change in wages. That is, a rise in the wage rate, other things being equal, will increase the return to work and increase the opportunity cost of leisure and will call forth more hours of work. There is a countervailing pressure in that the supply curve of labor with respect to a total income is negatively sloped. That is,

if total income rises as a consequence of an increase in the wage rate, less hours will be worked and if total income falls because of a reduced wage rate, more hours will be worked in the effort to maintain total income.

What we have seen is a very sharp increase in the minimum wage, fairly substantial increases in the wage rates for most industrial workers but little or no change in wage or salary rates for those--mostly in the managerial ranks--with a wage or salary rate over 200 to 230 rubles.

During the prewar and war years, the unusually (in terms of Western experience) large rise in participation in the industrial labor force was in large part a response to the low and falling real wage. It took more than one wage for a family to subsist and many wives went to work. The large rise in the minimum wage and in low and middle wage and salary rates of the past decade or so were, it must be assumed, directed at least in part toward increasing, or at least maintaining, the high participation rate of women and toward tempting pension-age persons to work longer and young persons to start working sooner. But will the raised wage rates have this or the opposite effect? The young, I should guess, might look more to the price effect. In any case, their alternatives are limited by the number of places for full-time day students in the colleges. But the higher wages may make some of them less dissatisfied with being blocked from college, less discontented with some of the not very pleasant jobs open to them and may generally improve their morale and perhaps their performance. For pensioners, the reaction may well depend enough on individual circumstances, that it is difficult to make a prediction. Where the danger lies is with married women. Since the general increase in real wages has increased their husbands' earnings, will significant numbers of them start to drop out?

What about those at the upper level with salary rates over 200-230 rubles?

The industrial elite, the directors and other top managerial personnel in the more important enterprises have had their salary rates frozen but the limits on the amount of bonus they can earn have been relaxed.²³ In fact, many, if

not all, of their salary rates have been frozen since before the first wage reform--that is before 1956 or for over twenty years.²⁴ One must, of course,

take into account the "perks" of office. These include the chauffeured limousines, better housing, country dachas, access to special shops where scarce domestic and imported goods not available to the ordinary worker may be purchased and, for some, a free monthly food ration for their family.

(See Smith, 1976, Ch. 1.) Unfortunately these are very secret matters and we do not know what has happened to the value of the "perks" as the salary rates have been frozen.²⁵ Assuming no significant change in the value of "perks", the industrial elite has probably experienced some decline in real income and has certainly suffered a fairly sharp drop in earnings relative to those of other workers in industry.

Will the bosses continue to work as hard as before? Will they work even harder for their bonuses to try to maintain their real living standard? Or will they put less effort into their work or look for jobs with less responsibility? If Peter Wiles is right, they will continue just as before; or, if they feel their real income has fallen, they will work harder for their bonuses. Wiles (1974b) argues that if it were possible "to reduce all top salaries at a stroke, everyone would continue to work as before, since there would be no competition to lure him away, and the supply curve of each man's total labour is negatively sloped." (p. 72. His italics.) If emigration is possible, this may not hold. He finds that Stalin set differentials for upper level

salaries much higher than necessary and that Khrushchev lowered the inequality substantially without obvious trouble (pp. 75-76). Will the Breshnev further equalization also be without trouble?

There are certainly definite restraints on the possibilities for upper managerial personnel to leave their jobs. One is the Party control over all important job assignments. Secondly, where else would they go? There aren't so many jobs paying more or which provide equal rewards with less responsibility. A third is the fear, among those who have them, of loss of the "perks" of office which, unlike salary, cannot be saved and taken with you.²⁶ A fourth is the extreme difficulty of emigrating.²⁷ With this degree of control over the managers, the leadership has perhaps felt it safe enough to assume that the managers will continue to work at least as hard as they have even as their salary rates remain frozen. And changes in bonus provisions are intended to make them work harder or better.²⁸

Empirical evidence on whether the industrial elite has been working harder or better is, obviously, hard to come by. It will be interesting to watch whether the freeze on upper level salary rates continues or whether these salaries will be raised as a continuation of the second wage reform or in a future revision of the wage structure.

The authorities may well also have been concerned with the envy of the masses of the bosses²⁹ and the possible repercussions of this at work or on the stability of the regime. It must also have been embarrassing for the leading Communist country that real industrial wages were lower and the differentials among them were wider in the USSR than in its smaller East European neighbors. In the competition between systems, surely the level of well-being of the people and the degree of equity in income distribution

count heavily. In any case, whether with an eye on the Polish disturbances of 1970 and 1976 and the perpetuation of their own leadership, whether in response to changed labor market conditions, or as an approach to the Communist ultimate aim of a high standard of living and distribution according to need, the Soviet leaders have pursued wage policies which have increased the incomes of the masses of industrial workers (and, incidentally, also of farmers) and which have substantially reduced the degree of inequality of earnings.

FOOTNOTES

- 1/ This reform has been extensively treated in Chapman, 1970 and Kirsch, 1972. Full references are given at the end of the paper.
- 2/ Pravda and Izvestiia, Dec. 28, 1976, Current Digest of the Soviet Press (hereafter CDSP) XXIX-1, p. 6.
- 3/ Nevertheless, it should be understood that we are here presenting a highly simplified picture of the basic wage structure. Gosudarstvennyi komitet Soveta ministrov SSSR po voprosam truda i zarabotnoi platy, Tarifnye stavki i dolzhnostnye oklady, the 1960 handbook of wage and salary rates includes 45 pages of wage rates and 208 pages of salary rates.
- 4/ This is based on the definition of the group whose wages were to be raised as those with basic wage or salary rates up to 200-230 rubles. This appears to be confirmed by the statement of Shkurko (1975, p. 17) that the new system of wage rates contains 70 different rates, in which each rate differs from its neighbor by 1.7 per cent. This would imply that the top rate was 3.26 times the bottom rate. $(1 + \frac{1.7}{100})^{70} = 3.26$.
- 5/ A. Chekalin, in Literaturnaia gazeta, June 1, 1977 (CDSP XXIX-22, p. 21). The data refer to the Ministry of Heavy Industry Enterprise Construction. A brigade leader is a wage earner who leads the brigade (work group) while also working with the group in his regular occupation. His pay is raised by 5 to 10 per cent, depending on the size of the brigade.

- 6/ See, e.g., Bliakhman i Shkaratan, 1973, Ch. 6, esp. pp. 282-294.
- 7/ Details of the revised indicators for various industries and revisions in the indicators have been published in Gosudarstvennyi komitet pri Soveta ministrov SSSR po voprosam truda i zarabotnoi platy, Biulleten', beginning in 1973.
- 8/ Dolgoplova and Shakhmagan, 1963, p. 153; Goskom ... po voprosam truda i zarabotnoi platy, Tarifnye stavki i dolzhnostnye oklady, 1960, p. 86.
- 9/ One source says all bonuses from the bonus fund are excluded from these limits. Kletskii, 1974, pp. 220-221. Sotsialisticheskii trud, 1970, No. 11, pp. 74-75 and 1971, No. 1, p. 66. which spells out the limits is less clear; it lists some types of payments from the bonus fund--e.g., the year-end bonus--and a few other types of bonuses that are not covered by the limits.
- 10/ As an illustration of what is regarded as excessive, the deputy director of a plant in Leningrad received four times the innovation bonus of the chief engineer. In another plant, the chief accountant received 50 per cent more than the technical people who headed up each innovation project. Berliner, 1976, p. 498.
- 11/ Batkaev, 1973, pp. 35-36. Details on such provisions in several industries have been regularly published in Biulleten' since 1973.
- 12/ This is called "broad-banding" in U.S. terminology. The system of letting anyone in a crew do any of the jobs of the crew was introduced in New York City's Highways Department in August 1977 after decades of dividing road-repair crews into specific job slots, each with a job others were not permitted to perform. The New York Times, August 21, 1977.

- 13/ A report on the Shchekino experiment after ten years sums up the achievements and points to the difficulties now being experienced as a result of changing rules and all kinds of conflicts between operating on economic incentives and detailed planning. Pravda, March 28 and 19, 1977 in CDSP XXIX-13, pp. 14-16. These problems are also discussed in Aganbegian's article in Literaturnaia gazeta, May 4, 1977 in CDSP XXIX-19, pp. 6-8.
- 14/ Narkhoz-65, p. 143; Narkhoz-72, p. 182; Narkhoz-74, p. 192; SSSR v tsifrakh v 1975 godu, pp. 24, 180.
- 15/ It should not be forgotten that as recently as 1954, the gross real average wage of all non-agricultural wage earners and salaried workers was at best only 24 per cent above the 1928 level and at worst was 11 per cent below the 1928 level. The large difference stems from the index number problem and result depends on the relative prices used as weights. Chapman, 1963, p. 145.
- 16/ The budget data for families of industrial wage earners indicate a slight increase in the income taxes as a share of family money expenditures between 1970 and 1974. Narkhoz-74, p. 605. During the second wage reform the income tax on earnings below 70 rubles was abolished and the rates applicable to earnings between 70 and 90 rubles was reduced.
- 17/ On the interpretation of the rise in savings, see Schroeder and Severin, 1976 and Aron Katsenelinboigen, 1977, pp. 180-81.
- 18/ The Soviet Union does not publish the results of its periodic censuses of the size distribution of earnings. Scattered summary measures are occasionally presented by Soviet economists. Also, a number of graphs of the distribution with all figures removed have been published. Wiles and Markowski (1971) tackled the problem by careful measuring of the areas under the curves to arrive at distributions for 1946 and 1966 and

Wiles (1976) improved the calculations with the aid of better-drawn graphs in Rabkin and Rimashevskaja, 1972. This technique is followed by Alistair McAuley (1977) and he extends the calculations to the distribution of per capita income among the entire Soviet population, including collective farmers. Rabkina and Rimshevskaja (1972) provide equations for the mean and the decile ratio of the actual earnings distribution for the period 1946 to 1968 and indicate that the distributions are very close to log-normal. That is, they present the two basic parameters (the mean and the standard deviation, which can be computed from the decile ratio) necessary, given the log-normal shape, to work out the actual ruble distributions for these years. They are of course, smoothed. I followed this clue in Chapman, 1977.

19/ The decile ratio is the ratio of the earnings of those falling at the ninetieth percentile (counting up from the low-paid end of the distribution) to the earnings of those falling at the tenth percentile. That is, it tells how many times the earnings of (a) the lowest-paid of the highest paid ten per cent of the workers are of (b) the earnings of the highest-paid of the lowest paid ten per cent of the workers. In other terms, it represents the range of earnings of the middle-paid 80 per cent of the workers.

20/ The 1946 figure may not be comparable to those for later years. The sources describing the censuses say they began in 1956. Rabkina i Rimashevskaja, 1972, p. 194; McAuley, 1977, pp. 219-220.

21/ Half the people earn more than the median and half the people earn less than the median

- 22/ The coefficients relating the deciles of family per capita income to deciles of earnings are given in Rabkina and Rimashevskaya, 1972, p. 215. Using the same coefficients but his own calculations of the earnings distribution and interpolating between years Peter Wiles (1974b) pp. 24-25 estimates the decile ratio for per capita family income at 5.0 (with a ?) in 1956 and at 3.7 in 1966.
- 23/ The limits on bonuses for the very top managerial personnel described above do not apply to some or all (This is not clear) of their bonuses from the bonus fund.
- 24/ While the evidence is not entirely clear, it appears that many of the upper level managerial salaries were not raised during the wage reform of 1956-60. In some cases salaries were reduced. This appears to have happened mainly through the elimination of many "personal" salaries (which could be 150 per cent of the regular base salary) and length of service supplements. (Chapman, 1970, p. 97; Kirsch, 1972, p. 184, note 25). During that wage reform it is also possible that some (many?) enterprises were reclassified into a lower group, which determines the level of upper management pay. Before the reform, most enterprises were classified in group 1 but only the largest enterprises should be classified in the highest group in the reform, according to Aganbegian and Maier, 1959, pp. 143-44.
- 25/ In 1973, a reduction of the number of official cars was begun and officials of all but the highest rank were warned they had three years to learn to drive themselves. Christopher Wren in The New York Times, January 12, 1974. This might suggest the "perks" are being reduced. However, the official cars and idle chauffeurs in front of offices, homes and shops are the most conspicuous of the "perks." On other privileges, the Soviet elite is very discreet.

- 26/ This idea I owe to Aron Katsenelinboigen, who included it in a paper presented at the American Economic Association meetings in Dallas, Texas, December 28, 1975.
- 27/ The practice of requiring emigrants to repay the cost of their education, though I have no doubt it is used discriminately against Jews, would seem to have a broader purpose; that is, of preventing a brain drain when upper level earnings are so low compared to those in many countries and salaries have been frozen for so long.
- 28/ It is, of course, the rate for the job that has been frozen. Some present managers presumably have been moving up the ladder during the past twenty years and some currently can look forward to being promoted to higher level jobs within the frozen salary structure. It is not clear what effect the narrowed differentials between top management salaries and others will have on the aspirations of the young to strive for such jobs.
- 29/ Here is an expression of envy from a 1971 piece of samizdat, though presumably written by an intellectual. "In the USSR there is a huge difference between the earnings of workers and those of management. Thus, a Director of the Defense Design Bureau receives (including bonuses) 1500 to 4000 rubles a month. The salary of a Minister (not counting bonuses, extra pay, special supplies and services) is 2000 rubles a month. Secretaries of town, oblast and krai committees, etc., receive very high pay. As for members of the Central Committee, nothing need be said. They are envied by the Rockefellers, the Duponts and The Krupps." A Kazakov, 1971, p. 40.

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