

Economic Expansion and Wage Structure in a Socialist Country: a Study of Polish Experience

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IN SOCIALIST ECONOMIES wages come within the scope of planning and, apart from a certain period of experimentation by the Yugoslav economy, have always been subject to fairly strict control. This stems from the decisive part played by wages in the standard of living of a basic and steadily growing part of society² and from the contribution made by the over-all wage fund to the purchasing power of the population³, which, in a period of industrialisation, constitutes a potential threat to market equilibrium.

But the highly centralised nature of decisions respecting wages in almost all socialist countries and in all periods of their development hitherto does not imply that the methods adopted are the same in all cases: on the contrary their very diversity makes it necessary to limit the scope of this article to an examination of the Polish economy in a period of industrialisation.⁴

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² On the basis of the general census of 1960 it is possible to calculate that over 16 million persons in Poland derived their livelihood from wages in that year. Assuming a slight change in the average number of employed persons in the period 1960-63, this figure had increased to over 18 million in 1963.

³ The proportion of workers' remuneration (wage fund, works fund, allowances, etc.) in the cash income of the population amounted to 67.4 per cent. in 1955 and 62.8 per cent. in 1960. See M. KUCHARSKI: *Pieniądz, dochód, proporcje wzrostu* (Cash, income, relative increase) (Warsaw, Państwowe Wydawnictwo Ekonomiczne, 1964), p. 300.

⁴ Another basic reason for limiting the analysis is the lack of statistical information which would permit an international comparison of wages, especially the evolution of wage structure.

Institutional framework and basic principles of wage differentiation

The framework of wage determination

The Polish economy is characterised by fairly steady and pronounced centralisation in wage matters.

In the National Economic Plan the wage fund for each ministry, industrial group and undertaking (i.e. the total sum made available to it for the payment of all forms of remuneration) is fixed in the form of an index, and its amount may be altered only in the event of a change in the degree of fulfilment of the plan targets.¹ Since, at the same time, employment indices are also fixed by the plan, these two measures together determine the level of the average wage for the various branches of economic activity and for the various categories of workers, and thus prescribe the limits within which individual wages and the relative level of wages may change.

Decisions respecting wage scales, and thus directly affecting wages differentials, are also taken at the central level of the economic apparatus. The scales prepared by a particular economic ministry and the corresponding trade union are finalised by a central authority, the Committee of Labour and Wages, in agreement with the Central Council of Trade Unions.² They contain either specific rates for each category in the classification or limits within which the rates for each category may vary. In either case they prescribe a basic relative level of wages, although with varying degrees of precision.

The second group of factors affecting the wage structure consists of the measures taken by individual undertakings in the exercise of the powers conferred on them. In Poland these powers have changed much less in relation to wages than in relation to other factors. At the present time industrial undertakings have the right to fix specific wage rates within prescribed limits, to choose the remuneration system for the various categories of employees (i.e. time rates or payment by results), to lay down detailed rules for the payment of bonuses to manual workers and to fix a considerable proportion of the labour norms. All this enables undertakings to exert a substantial influence on the level of individual wages and thereby on the wage structure.

The third group of factors influencing the wage structure, and particularly the relative level of wages, comprises the labour input and results of the work done, for which appropriate remuneration is fixed.

¹ In December 1963 new principles for the adjustment and audit of the wage fund were introduced in state undertakings in key industries, and automatic increase of the wage fund related to the fulfilment of production targets was suspended.

² These scales are an integral part of the collective labour agreements. In the period 1950-55 wage decisions were issued as orders by the Economic Committee of the Council of Ministers.

These last factors depend to a considerable extent on the workers themselves, on their will to achieve adequate results. Obviously the degree to which this determination leads to concrete results also depends on the management, which creates the actual conditions of work and ensures the organisation of production.

Thus in a socialist economy (as typified by Poland) the final situation as regards wages is the resultant of three groups of decisions and measures in which different criteria are applied. The first group (centralised decisions), are taken with due regard to the interests of society as a whole and to the over-all targets of the national economy. The second group (decisions taken by the undertakings), though in theory they are based on the principle of rational management on a micro-economic scale, are in practice often taken with a view to stabilising the labour force and raising the level of wages in so far as existing possibilities permit. The third group (individual decisions) are dictated by the desire to earn entitlement to increased remuneration.

Underlying principles

The decisions taken on wages by economic organs—both undertakings and the higher units of the economic apparatus—are based on certain assumptions, concerning the part played by wages in the national economy and the most fundamental principles of socialist wage policy. Wages are regarded as the chief factor in determining the standard of living of employed persons, notwithstanding the growing part played by the “social consumption fund” in the over-all consumption fund.¹ It is for this reason that consumption patterns, including both the general level of consumption and its differentiation among the various categories of employed persons, are influenced mainly by a combined wage and price policy. This is effected chiefly by adjusting the minimum wage level, granting successive increases to sectors where wages have longest remained static, or explicitly according preferential treatment to categories of workers and branches of activity with the lowest average earnings in the course of general wage reforms. There is no doubt that all these measures, which may be observed in the majority of socialist countries, have a levelling effect on wages, but it is difficult, without more detailed research, to determine how far this is the expression of egalitarianism, even though this may not be fully conscious, and to what extent it is the inevitable consequence of the restrained inflation which accompanies the process of economic expansion even in a planned socialist economy.

¹ An approximate measure of social consumption may be found in our statistics of the distribution of the national income, under the heading “other consumption”. This amounted to 7.8 per cent. of total consumption in 1950, 6.9 per cent. in 1955, 8.2 per cent. in 1960 and 11.5 per cent. in 1963. Based on Z. ZIENKOWSKI: *Dochód narodowy Polski 1937-1960* (National income of Poland, 1937-1960) (Warsaw, Państwowe Wydawnictwo Ekonomiczne, 1963), p. 228, and *Rocznik Statystyczny, 1964* (Statistical Yearbook, 1964), p. 71.

Consumption objectives and targets are only one aspect of wage policy. Another is a consequence of the fact that wages, due to their pricing role in relation to labour, are an instrument of manpower policy used to influence the utilisation of manpower resources—their geographical, sectoral and hierarchical distribution, their development and the degree of their utilisation at the workplace.

The theoretical basis of the entire wage policy is the law of classification according to the work performed, a specific economic law of socialism that requires the differentiation of individual wages in proportion to the quantity and quality of the work performed, irrespective of who performs it.¹ Despite some degree of confusion and theoretical controversy with respect to the interpretation of this law the criteria invariably applied are: (1) the complexity of the work, (2) the arduousness of the work, (3) the degree of responsibility generally involved in the post occupied, and (4) the significance of particular work to the national economy.²

The first three criteria are relatively easier to evaluate, may be verified objectively and are to a large extent connected with the technical and organisational aspect of the labour process. The last criterion, on the other hand, is connected with the general social and politico-economic aspect of the process and involves at the same time far more heterogeneous and subjective elements. It also reflects both the degree of imbalance of manpower supply and demand in the various sectors and a policy of production and development priorities or social priorities.

Although, as has been said, the four criteria are invariably applied in wage policy, their role varies according to the nature and stage of economic expansion. This is especially true of the fourth criterion. While uniform and balanced expansion reduces the scope and applicability of this criterion, there is no doubt that accelerated expansion involving priorities makes it necessary to apply priorities in wage policy too, and consequently enhances the importance attached to the criterion of the significance of a particular type of work to the national economy. This results in preferential wage levels for productive employment, for expanding branches and areas, for higher qualifications and higher levels of efficiency and, lastly, for certain key occupations. Such differentials may lead, in turn, to accelerated movements of manpower or training programmes and thereby eliminate an existing shortage—or prevent a potential shortage—of a particular category of workers.

It should be borne in mind, however, that while wage policy, generally speaking, is a basic instrument of manpower policy, it is by no means the

¹ Article 66 of the Constitution of the Polish People's Republic guarantees equal pay for equal work for women and men.

² The theoretical bases of the wages policy which are common to all socialist countries, and the specific methods used, have been presented in considerable detail in A. S. SHKURKO: "The industrial wage system in the U.S.S.R.", in *International Labour Review*, Vol. XC, No. 4, Oct. 1964, pp. 352 ff.

only one. Apart from non-economic factors it is sufficient to recall that in the conditions peculiar to Poland the following have served as substitutes for wage policy: the long-standing policy of planned recruitment, the training of cadres and the planned employment of persons graduating from higher and secondary schools, housing policy, and social policy (especially the building of crèches, kindergartens and collective residential centres). The effect of these policies has been to reduce the need to use wages in order to bring about greater labour mobility and, to a certain extent, the accelerated improvement of the skills of the labour force.¹

A theoretical model

A theoretical model of the evolution of wages in the process of expansion of a planned socialist economy might therefore take the following form: the economic premises of the wages policy are connected with the "basic economic law of socialism", i.e. the determination to ensure the maximum satisfaction of needs, and with the law of classification in accordance with work performed. The basic economic law of socialism is implemented by a growing rate of per caput consumption, in which consumption based on wage incomes plays a decisive role. The fulfilment of the requirements of this law seems at the same time to impose limits on the differentiation of individual incomes, including individual wages.

The socialist wage structure based on the law of classification in accordance with the quantity and quality of the work performed is modified as a result of the following factors: (1) changes in the content of the work, the conditions under which it is performed and the results; (2) changes in the employment market situation as regards the relative equilibrium of its various sectors; and (3) changes in the situation on the consumer goods market, which are reflected in fluctuations in the stability of the purchasing power of wages. In periods of accelerated expansion all three groups of factors share in the trend towards a greater differentiation of wages. The policy of planned employment, the training of cadres and social action operate as factors restraining this trend. The relative position of the various sectors of economic activity and of the various categories of workers as regards the amount of wages paid also varies. A period of reduced economic expansion and of diminishing priorities is accompanied by a change of direction in the relative level of wages and by a reduction in the differentiation of wages due to all three groups of factors.

The planned nature of the socialist economy and the highly centralised wages policy would lead one to expect a constant co-ordination of

¹ This also explains the clearly inadequate differentiation between the wages of skilled and unskilled workers, and between those of managerial and production workers.

decisions concerning wages with other decisions, especially decisions concerning the employment market and manufacturing methods (intensive or extensive). Nevertheless, a high degree of centralisation causes the wages policy to be insufficiently flexible, and not entirely effective from a micro-economic point of view, and leads to certain spontaneous adjustments. At the same time the pressure of investment, which checks the rate of increase of the general level of wages, intensifies the trends towards unplanned, spontaneous wage increases at the lower operational levels. Thus, apart from the planned decisions of the higher authorities and those taken by undertakings in conformity with the intentions of these authorities, undertakings sometimes propose measures that are inconsistent with the intentions of the higher authorities and carry them through on their own initiative to meet the needs of a particular situation. A period of accelerated expansion is accompanied by increasing tension between the wage policy pursued by the higher authorities and that pursued by undertakings, and between the policy of the undertaking and the demands of the workers. Both these types of tension lead to an increase in the number of unplanned elements in the wage pattern and upset the proportions established in the planned decisions.

When one attempts to test this very general model in the light of reality and to develop it further in the same direction one runs into serious difficulties. In fact one's first impulse is to analyse successive wage decisions taken by the highest or intermediate economic authorities and to discover their connection with the functions of wages and the stages of economic expansion described above. This connection may be sought either directly in the documents stating the grounds for a particular wage reform or wage adjustment or by the correlation of a particular wage decision with the factors making up the objective situation at the time. The first method is misleading because of the limited amount of data available and their incompleteness. The second method—comparison of the decisions taken with the economic situation—leaves one in doubt as to how a great many elements of this situation influence specific decisions. Hence it would be dangerous to proceed to a detailed description; in any case it would be impracticable to attempt this within the limits of one article.

Thus we are left with a completely different approach, which consists not in examining planned decisions on wages and their connection with economic expansion but in analysing the objectively constituted wage situation in the various stages of expansion, irrespective of whether it is the result of an automatic or spontaneous movement of wages or of a planned movement determined by the undertakings or the higher economic organs, and of whether it was based on a conscious consideration of the needs of economic expansion or was unconnected with those needs.

**The dynamics of the general level of wages
and the stages of economic expansion**

This analysis covers mainly the period from 1950 to 1963. The years 1945-49 are examined only exceptionally as years that are not typical of the processes of economic expansion, since they were given over to reconstruction of the country after the destruction caused by the war. While it is true that the first post-war years also witnessed a number of investment measures which transformed the country's economic structure, most of the activity of this period was concerned with the reconstruction of existing production plant.

Profound and rapid economic and social changes took place throughout the entire 20-year period, and especially the years 1950-63 (see table I).

TABLE I. BASIC INDICATORS OF THE ECONOMIC DEVELOPMENT OF POLAND

Indicator	Unit	1946	1947	1950	1960	1963
Population	millions	23.9	23.8	25.0	29.8	30.9
Proportion of population earning livelihood from non-agricultural activity	percentage	—	—	52.9	61.6	—
Average employment in national economy ¹	1950=100	49	63	100	146	165
Proportion of persons employed in socialist sector	percentage	—	—	91.1	97.9	98.1
National product	1950=100	—	57	100	208	245
Consumption	1950=100	—	61	100	204	234
Accumulation	1950=100	—	43	100	243	301
of which, net investment for fixed assets	1950=100	—	49	100	274	349
Total production at constant prices	1950=100	35	47	100	338	426

Source. *Rocznik Statystyczny*, 1964, pp. xxx-xxxii.

¹ Persons employed under a labour contract; not all gainfully employed persons.

The period under review comprises three multi-year economic plans, the six-year plan (1950-55), the first five-year plan (1956-60), and the second five-year plan (from 1961 on). All official statistics and analyses are divided into periods according to these plans; but, as has been pointed

out in a number of recent publications¹, the process of economic expansion in Poland can be divided into certain characteristic stages which do not coincide with the periods of the multi-year plans. Very roughly it is true to say that we are concerned here with the alternate phases of increase in the investment effort and in the shift of effort and resources towards consumption. The investment phases occur in the first years of the six-year plan, the final years of the first five-year plan and the first years of the second five-year plan, whereas the consumption phases occur in the final years of the six-year plan, the first years of the first five-year plan and—it is hoped—the final years of the second five-year plan.

It is not possible, in this article, to analyse the reasons for this state of affairs, but two conclusions do concern us. The first is that analysis of the statistics for the plan periods does not help us to discover any pattern of wage changes due to economic expansion. The second is that each specific wage situation arising in a particular year or period should be evaluated in relation to the phase of economic expansion.

Before analysing the evolution of the wage structure in a socialist economy it is necessary to describe the movement of the general level of wages in the period under review. There are several reasons why this is necessary. In the first place the planned nature of the role of the wage economy and the highly centralised nature of the decisions taken in this field lead to interdependence between the general level of wages and the wage structure; not only does the general (average) level of wages depend on the pattern of sector wage levels, but, reciprocally, decisions taken by the central economic organs with regard to the movement of sector wages depend on the planned increase in the general level of wages. Consequently, the observation of changes in this general level is the first step in estimating the scope, direction and rate of changes in the wage structure and especially the relative level of sector wages. A second rather fundamental reason is that the evolution of the wage structure can only be analysed in nominal amounts, and therefore in current money wages. The fact that there is no system of cost-of-living indices differentiated for the various categories of employed persons makes it impossible to undertake a structural analysis in real terms.² At the same time

¹ See J. PAJESTKA: "Z problemów wzrostu i podziału dochodu narodowego" (Some of the problems arising out of the increase and distribution of the national income), in *Gospodarka Planowa*, 1964, No. 5; L. ZIENKOWSKI: "Tempo i główne kierunki wzrostu dochodu narodowego w Polsce Ludowej" (Rate and main trends of the growth of the national income in People's Poland), in *Ekonomista*, 1964, No. 5; R. CHELIŃSKI: "Etapowy charakter rozwoju gospodarczego w Polsce Ludowej" (The cyclical nature of economic development in People's Poland), *ibid.*, 1964, No. 5; and M. KUCHARSKI: *Pieniądz—dochód—proporcje wzrostu* (Cash—income—relative increase) (Warsaw, Państwowe Wydawnictwo Ekonomiczne, 1964), Ch. III.

² Very interesting comparisons of the level of real wages of selected categories of employed persons in the years 1937 and 1960 were also carried out using uniform cost-of-living indices for all employed persons. See the articles by L. BESKID, in *Przegląd Statystyczny*, 1963, No. 3; 1964, No. 1; and 1964, No. 3.

economic expansion is accompanied by changes in the purchasing power of money and sometimes even by contrary trends in the movement of nominal and real wages. Consequently, in order to evaluate changes in the wage structure that have been analysed in nominal terms it is necessary to have rudimentary information as to the stability, increase or decrease of the purchasing power of wages. A third fairly important reason for giving attention to the general movement of wages is the part played by the above-mentioned phases in the development of the national economy and the necessary influence on wages of the general characteristics of these phases.

The statistical material used in the analysis is incomplete, and in some cases is not easily comparable owing the organisational changes in the national economy, changes in the rules for keeping records and the amounts recorded, changes in the methods of calculation (e.g. of the cost-of-living index) and, lastly, owing to the fact that certain amounts, which the author could not find in official sources, have had to be estimated. These reservations apply especially to the period prior to 1955.

Nevertheless, it is possible to form an opinion as to the pattern of the movement of nominal and real wages in People's Poland. Uniform long-term information is only available for gross nominal wages in the national economy, which increased more than fivefold over a period of 16 years as a result of changes both in the structure of employment and in the "price of labour". These last concerned the successive relative levels of wages in various sectors of employment on the one hand, and, on the other, the general wages reforms and increases, the most marked of which occurred in 1953 and in the period 1956-57.

The second group of data covering a period of 11 years concerns the *socialist* sector (which accounted for 91 per cent. of total employment in the national economy as a whole in 1949 and for 98 per cent. of such employment in 1963). In the years 1953-56 average gross wages in this sector were very slightly higher than those in the national economy as a whole. In subsequent years this difference increased.

Serious difficulties arise when an attempt is made to calculate net nominal wages and real wages since the information available is of a short-term nature and covers different groups during different periods. Subject to very considerable reservations it is possible to construct an index of net nominal wages and real wages combining in one series the figures for all persons employed in the national economy during the period 1949-55, all persons employed in the socialist sector during the period 1955-60 and all persons employed in the socialist sector, excluding apprentices, during the period 1960-63. An index like this, considered illustrative of the movement of wages in the national economy, would be too high as regards nominal wages because of the disparity between the movement of wages in the national economy and in the socialist sector; the index for the movement of real wages for the period 1960-63 would be

even further exaggerated owing to the exclusion from the calculation of the wages of apprentices.¹

Although the uncertain degree of comparability of the data for the various periods casts some doubt on the scientific value of the index constructed in the manner described above, we shall use it for the purpose of ascertaining the long-term trends of the period of industrialisation (see table II).

TABLE II. AVERAGE WAGES IN THE NATIONAL ECONOMY, 1949-63
(1949=100)

Year	Net nominal wages ¹	Net real wages ²	Year	Net nominal wages ¹	Net real wages ²
1950	120.8	112.2	1957.	284.8	150.0
1951	132.3	112.3	1958.	300.3	155.0
1952	144.0	106.7	1959.	323.6	162.8
1953	203.7	105.8	1960.	333.9	160.3
1954	216.4	119.2	1961.	347.2	164.7
1955	224.6	124.2	1962.	357.3	165.1
1956	249.1	138.6	1963.	373.5	169.1

Source: *Rocznik Statystyczny*, 1964, pp. xxxi, xli, and 481; *ibid.*, 1956, pp. 244 and 278; Fr. BLINOWSKI: "Walka państwa ludowego o dobrobyt mas pracujących" (The battle of the People's State for the welfare of the working masses), in *Trybuna Ludu*, 1952, No. 222; and *idem*: "O kształtowaniu się stopy życiowej w planie sześcioltnim" (Composition of standard of living during the six-year plan), in *Nowe Drogi*, 1956, No. 2.

¹ Until 1955, for persons employed in the national economy; from 1955, for persons employed in the socialist sector. ² Until 1955, for persons employed in the national economy; the index of the prices of commodities and services purchased by the population is used instead of the cost-of-living index; in the period 1955-60 the cost of commodities and services used in the cost-of-living index is different from that used after 1960. From 1955, the wage for persons employed in the socialist sector; from 1960, real wages excluding apprentices.

Both nominal wages and real wages showed a tendency to increase; real wages increased on the whole more slowly than nominal wages ², sometimes they changed in the opposite direction, and during two periods (1952-53 and 1960) they showed a decrease.

¹ The magnitude of the increase in nominal wages may be evaluated by comparing the real index of gross wages for the national economy, amounting in 1963 to 563.6 (1948=100) with the "combined" index of gross wages in the national economy in the period 1948-53 and of gross wages in the socialist sector in the period 1953-63, amounting in 1963 to 582.5 (1948=100). The difference amounts to 19 points and hence approximately 3 per cent. The magnitude of the additional deviations of real wages owing to the exclusion of apprentices from the calculation for the period 1960-63 may be evaluated by comparing the movement of nominal wages in the socialist sector in the same period, including and excluding apprentices. The first (including apprentices) amounts in 1963 to 111.8 and the second (excluding apprentices) to 113.3 (1960=100). The difference is 1.5 points and hence approximately 1.3 per cent.

² If we extend our series to 1946 we obtain an index of nominal wages of 1,200 (1946=100), and an index of real wages of 350 (1946=100). It must be pointed out, however, that these figures are subject to very serious reservations because of the incompleteness of the information as regards data for the period 1946-49.

The rate of increase of nominal and real wages fluctuates considerably and the trend of the changes in both resembles a wave of diminishing amplitude. The initially very substantial amplitudes become increasingly smaller and in the last four years one might even speak of an almost stabilised rate of changes in nominal and real wages. This can be seen quite clearly from table III, which shows the rate of change in average monthly wages for each year from 1947 to 1963 in comparison with the previous year.

TABLE III. RATE OF CHANGE IN AVERAGE MONTHLY WAGES, 1947-63
(Previous year = 100) ¹

Year	Net nominal wage ²	Net real wage ²	Year	Net nominal wage ²	Net real wage ²
1947	153	113	1956. . . .	110.9	116.6
1948	139.2	133.6	1957. . . .	114.3	108.2
1949	142.7	137.0	1958. . . .	105.4	103.3
1950	120.8	112.2	1959. . . .	107.7	105.2
1951	109.5	100.1	1960. . . .	103.1	98.4
1952	108.8	95.0	1961. . . .	103.9	102.7
1953	141.4	99.1	1962. . . .	102.9	100.2
1954	106.2	113.2	1963. . . .	104.5	102.4
1955	103.7	103.6			

Source: Derived from table II.

¹ The indices of the nominal wage for the periods 1946-49, 1949-55 and 1955-63 and the indices of the real wage for the periods 1946-49, 1949-55, 1955-60 and 1960-63 are still not fully comparable; the annual changes within these periods, however, are fully comparable. ² See footnotes to table II.

The steepest fall in the average real wage occurred in 1952 and the most marked annual increase in 1956. The sharp increase in the nominal wage that occurred in 1953 was due to the implementation of the reform of prices and wages which caused the level of nominal wages to rise by approximately 30 per cent., whereas real wages fell by approximately 0.9 per cent. during the same year.

In order to seek a connection between the movement of wages and economic expansion one must calculate the mean annual rate of change in the average wage during the various periods of economic development (table IV).

Table IV shows clearly the systematic fall in the rate of increase of nominal wages both in successive plan periods and in successive phases of economic expansion, though it is more pronounced in the periods of the successive plans. It is interesting to note in this connection that the mean rate of increase of nominal wages is higher in the different phases of economic expansion than in the periods of the successive multi-year plans. The rate of change in real wages passes through clearly marked periods of acceleration and deceleration, which are much more

obvious in the case of the succeeding phases of economic expansion than in the break-down according to multi-year plan periods. It is also interesting to note the slowing down in the rate of increase of real wages when that of nominal wages is higher than that of real wages and, conversely, the acceleration of the rate of increase of real wages when it is greater than that of nominal wages in the same period. Obviously all these conclusions are very approximate owing to the incomplete comparability of the data referred to.

TABLE IV. MEAN ANNUAL RATE OF INCREASE
IN THE AVERAGE MONTHLY WAGE
(Net, percentages)

Type of wage	Plan periods				Phases of economic expansion		
	Three-year plan, 1947-49	Six-year plan, 1950-55	First five-year plan, 1956-60	Second five-year plan, 1961-63	Phase I (investment), 1950-53	Phase II (consumption), 1954-57	Phase III (investment), 1958-63
Nominal wages ¹	44.8	11.2 (6.8)	8.2	3.7	19.3 (12.5)	8.6	4.6
Real wages ¹	27.4	3.6	6.2	1.8	1.4	10.2	2.0

Source: Compiled on the basis of table III using the geometric mean.

¹ See footnotes to table II. The figures in brackets were obtained by deducting 30 per cent. of the increase in nominal wages resulting from the 1953 reform of prices and wages.

The changes observed in the level of nominal and real wages can be explained by the specific economic situation that has developed in the various periods or years. One need only mention the increase in international tension, which caused an intensification of the investment effort half way through the period of the six-year plan and the arrested development of real wages, or the internal political events of 1956 which led to a sharp increase in nominal wages owing to claims for arrears of pay ¹ and the regulation of the level of the lowest wages.² Nevertheless, the pronounced alternation of a high and low rate of increase of real wages according to phases of economic expansion seems to indicate that this is not a purely random phenomenon. It confirms the correctness of the methodological hypothesis that wage changes should be analysed

¹ The amount of remuneration in arrears from previous years paid to industrial workers in 1956 was 567.4 million zlotys (see *Statystyka przemyslu*, 1956, p. vii).

² The level of the lowest monthly wages was raised progressively from 360 zlotys in 1955 to 500 zlotys in 1956 and to 600 zlotys in 1959. This increase affected more than 200,000 persons employed in the socialist sector. At the same time the limit for exemption from income tax was raised from 550 zlotys in 1956 to 650 zlotys in 1959 and 850 zlotys in 1960.

according to the different phases of economic expansion rather than to the periods of the multi-year plans.

**Relative level of average wages in different branches
of economic activity**

Our chief reason for analysing the relative level of wages in different branches of activity is the fairly generally accepted belief that a process of economic expansion is accompanied by a definite sequence of development of various branches of the national economy, and the consequent changes in the relative levels of employment, productivity and wages.¹ The most interesting analysis in this connection would be one of the wages paid to persons representative of similar occupations or similar degrees of skill, or to persons performing similar duties in different branches of the economy. A study of this kind, however, requires very full statistical information, which we do not at present have at our disposal. Bearing in mind all the shortcomings of the average figures, we have no choice but to accept them for our analysis.

The lack of statistical information respecting average wages in different branches of the economy prior to 1953 obliges us to confine this analysis to the period 1953-63. This period comprises two phases of economic development: the phase of consumption of the results of the first stage of industrialisation, which falls within the years 1954-57, and the phase of investment of the second stage of industrialisation in the years 1958-63. The changes in the relative levels of wages in each of these phases, which are the result of the uneven movement of average wages in the different branches, are shown in table V, which contains data for the final year of each phase.

As the table shows, the rate of increase of average wages during the period under review varies considerably. While the over-all index for 1963 is 189.7 (1953=100), it varies from 176.2 for internal trade to 263.4 for education, science and culture. Apart from building and transport, the highest indices are those for the branches with the lowest level of wages in the initial period. This may indicate the predominance of consumption targets and egalitarian tendencies in the wage policy during the period under review. Partly, however, the movement of average wages in different branches may reflect changes in the structure of employment in favour of more highly skilled and better-paid workers.

As far as the movement of average wages in the different periods of development is concerned, it is much less diversified in the second period (1958-63) than in the first (1954-57). The difference between the highest

¹ See Colin CLARK: *The conditions of economic progress* (London, 1957); Z. MORECKA: "Rozwój gospodarczy i struktura płac" (Economic development and wage structure), in the collection *Teorie wzrostu ekonomicznego a współczesny kapitalizm* (Theories of economic expansion and contemporary capitalism) (Warsaw, Książka i Wiedza, 1962).

and lowest indices for 1957 is 64.8 points, while that for 1963 is 28.8 points. Even if we deduct the results of the 1953 reform, which differentiates the increase in wages in inverse proportion to the remuneration categories, the figure for the first period would still remain much higher.

TABLE V. CHANGES IN ACTUAL AND RELATIVE LEVEL OF AVERAGE GROSS MONTHLY WAGES IN THE SOCIALIST SECTOR

Branch	Index of movement of wages			Index of relative level of wages (Wage in socialist sector = 100 for each year)			
	Total period	First period	Second period	1953	1957	1958	1963
	(1963 1953)	(1957 1953)	(1963 1957)				
Socialist sector	189.7	143.8	131.9	100	100	100	100
Industry	189.6	150.1	126.3	108.3	113.1	111.2	108.2
Building	200.5	130.2	154.0	125.5	113.5	118.2	115.4
Agriculture ¹	218.1	143.3	151.6	69.9	69.8	72.4	80.2
Forestry	219.2	149.7	146.4	64.4	67.0	68.2	74.4
Transport and communications . .	198.1	149.2	132.8	97.2	100.9	98.9	102.3
Internal trade	176.2	140.7	125.2	87.5	85.7	83.3	81.3
Municipal services and housing . .	208.5	156.1	133.6	85.9	93.1	96.1	94.2
Education, science and culture . . .	263.4	192.8	136.6	65.8	89.2	87.2	91.2
Health services, social welfare and physical culture .	232.4	156.1	148.9	64.1	69.6	71.4	78.5
Public administration and justice .	210.0	140.3	149.7	96.1	93.6	96.3	106.5
Financial and insurance institutions . . .	182.4	128.0	142.5	97.8	87.1	89.5	94.1

Source. Calculated on basis of *Rocznik Statystyczny*, 1964, p. 454.

¹ Only employed persons.

In the first period the highest rate of increase in wages occurs in three non-productive branches of activity ¹: education, including science and culture, municipal services and housing, and health services, including social welfare and physical culture, two of which fall considerably below the over-all average as regards the level of wages. It might be possible to

¹ In Marxist terminology the term "productive" is applied to employment in the field of material production and in goods transport services, communications and parts of the internal trade branch.

detect in this a certain specific feature of the consumption phase of the first stage of industrialisation. Similarly, it would be possible to regard as a *signum temporis* of the next period—the period of increased investment effort—the fact that the building industry has the highest index of increase in the average wage. It should, however, be borne in mind that, whereas the rapid increase of wages in the non-productive branches is due mainly to central wage regulations, the movement of wages in the building industry during the period under review comprised many unplanned factors. These seem to reflect the difficulties encountered during this period of meeting the demand for building workers.¹

Interesting indices are obtained if we attempt to compare the movement of average wages and the changes in the structure of qualifications (determined by the educational level) of the workers in different branches of the national economy. Unfortunately the information respecting education concerns only two years, 1959 and 1964. It ought to be related to the wages for the same period, but we shall use the wage index which we have, which is that for 1957 and 1963 (table VI).

As the table shows, there is no clear connection between rising educational levels in a particular branch and the movement of the average wage in that branch. While it is true that in the period under review building and agriculture are characterised both by the fastest rate of increase in wages and by the fastest rate of increase in workers' qualifications and, similarly, that industry and financial institutions also occupy practically identical positions among the branches as regards both rates of increase, there are, nevertheless, cases such as the health services where a fairly high rate of increase in wages is accompanied by a fall in the qualifications index.

As a result of the uneven rate of increase of wages in different branches during both periods the relative level of average wages has varied considerably (see table V). In two cases—public administration and justice, and transport and communications—there was even a shift in 1963 from the group of branches with a wage level below the general average to the group with wages above the average in the socialist sector. Other branches maintained their "group membership".

The highest and lowest positions in the order of branches classified according to the level of wages were also maintained. Throughout the period building remained in first place, and industry in second place, while at the same time forestry and the health services (together with social welfare and physical culture) occupied the last two places. On the other hand the relative position of branch wage levels changed. In two cases—internal trade and financial and insurance institutions—the difference between the wage level of these branches and the general level

¹ According to data compiled by the Committee on Labour and Wages the number of vacancies for building workers was over 50,000 at the end of June 1959, over 40,000 in 1960 and approximately 24,000 in 1961, almost half of them being for skilled workers.

TABLE VI. PERSONS EMPLOYED IN NATIONAL ECONOMY CLASSIFIED ACCORDING TO EDUCATION AND MOVEMENT OF AVERAGE WAGES

Branches of national economy	Years	Employees (as percentage of all employed persons in the branch) who have received—						Average wages ¹ (1963 1957)
		Higher education (1)	Secondary technical education (2)	Secondary general education (3)	Incomplete secondary education (4)	Total ¹ (1 + 2 + 3 + 4)	Incomplete primary education	
Industry	1958	1.7	3.8	2.4	3.6	11.5 (8)	33.0	126.3 (10)
	1964	1.9	4.7	2.3	3.1	12.0	24.0	
Building	1958	3.9	4.7	3.4	3.5	15.5 (2)	36.8	154.0 (1)
	1964	4.8	7.2	3.7	3.5	19.2	24.7	
Agriculture ³	1958	1.4	2.1	1.9	2.4	7.8 (1)	59.6	151.6 (2)
	1964	2.5	4.5	1.7	2.3	11.0	47.3	
Forestry	1958	3.1	3.1	2.1	3.6	11.9 (3)	53.2	146.4 (5)
	1964	3.0	5.3	2.5	3.4	14.2	39.4	
Transport and communications	1958	0.8	3.3	3.3	5.1	12.5 (6)	34.9	132.8 (9)
	1964	1.0	4.4	3.7	4.7	13.8	22.5	
Internal trade	1958	2.2	5.6	7.6	9.4	24.8	19.7	125.2 (11)
	1964	1.9	6.1	7.7	8.7	24.4	13.2	
Municipal services and housing	1958	1.6	3.5	2.9	4.9	12.9 (4)	37.5	133.6 (8)
	1964	1.6	5.1	3.7	4.3	14.7	28.6	
Education, science and culture	1958	17.9	37.0	9.2	4.2	68.3	12.6	136.6 (7)
	1964	17.8	39.6	5.8	3.5	66.7	11.2	
Health services, social welfare and physical culture	1958	10.5	17.4	5.4	6.5	39.8	21.4	148.9 (4)
	1964	11.9	7.9	4.6	8.0	32.4	17.7	
Public administration and justice	1958	14.2	10.0	16.5	14.1	54.8 (5)	8.3	149.7 (3)
	1964	15.9	13.6	19.9	12.6	62.0	4.9	
Financial and insurance institutions	1958	8.6	17.4	21.2	13.9	61.1 (7)	7.2	142.5 (6)
	1964	6.8	18.2	27.9	14.6	67.5	4.1	

Source: *Rocznik Statystyczny*, 1964, pp. 62-63 (for educational levels) and table V (for average wages).

¹ Figures in brackets denote order of branches according to the percentage increase of the index over the period. ² Figures in brackets denote order of branches. ³ Only employed persons.

of wages in the socialist sector increased. Generally speaking, however, these levels drew closer together. Whereas the difference between the highest and lowest indices was 61.4 points in 1953 it fell to 46.5 points in 1957 and to 41.0 points in 1963.¹

¹ In absolute figures this difference increased from 595 zlotys to 649 zlotys and to 755 zlotys while the average wage in the socialist sector increased from 970 zlotys to 1,395 zlotys and to 1,871 zlotys during the same period.

Thus, despite the passage through two phases of economic expansion, the inter-branch differentials continued to narrow. Comparison of wage indices in 1958 and 1963 with the qualification indices for 1958 and 1964 leads one to the conclusion that there is no noticeable connection between the wage level and the educational level. Of the branches in which a large proportion of the workers have had secondary and higher education only public administration also had a high level of wages in the years in question. The wages in the health services, education and science lag far behind the average wage level despite the very high indices of education. The opposite situation is found in industry and building, where a high level of wages is accompanied by low indices of education.

Relative level of average wages as between different sectors of industry

In seeking a connection between economic expansion and the relative level of industrial wages it is useful to compare the wages paid to persons employed for investment purposes with those paid to persons in other industrial employment as a first approximation, since the general hypothesis is that the increase of investment targets in particular stages of expansion exerts pressure on the employment market in these sectors and causes a tendency towards specific preferential treatment for certain workers, as regards both the amount of their final earnings and the wages generally prescribed in the wage scales. Making every allowance as regards the scientific value of the average figures for such heterogeneous categories as persons "employed for investment purposes" and persons "in other industrial employment", we shall attempt to form an opinion as to the relative level of the wages paid to these two categories during the past few years.

Unfortunately, continuous series making it possible to investigate annual changes or single out the periods connected with changes in investment targets only go back as far as 1955. For the years prior to 1955 all we have is a single set of information for 1950, while the first—and apparently the most interesting—years of the six-year plan are outside the scope of our analysis. Employment for investment purposes may be examined in a narrower sense—building and the building materials industry¹—or in a broader sense—building, metallurgy and the building materials industry, the machinery and metal products industry, the electro-technical industry, the transport equipment industry, the wood industry and the glass industry.² Taking the second, broader, sense of the term we have attempted to examine the movement of the average wages

¹ See A. KARPÍŃSKI: *Zagadnienia socjalistycznej industrializacji Polski* (Problems of the socialist industrialisation of Poland) (Warsaw, Państwowe Wydawnictwo Ekonomiczne, 1958), Chapter IV.

² See J. PAJESTKA, *op. cit.*

of persons employed for investment purposes and those of persons in other industrial employment. The results of this comparison are contained in table VII.

The table shows the changes in the relative level and in the rate of increase of the average wages paid to persons employed for investment purposes and persons in other industrial employment during the period of the six-year plan and in the two phases of economic expansion falling within the years 1955-63. In the first period, investment industry has the highest index of increase in wages and building has the lowest. As a result the wages paid to the totality of persons employed for investment purposes increase at a slightly faster rate than those paid to persons in other industrial employment. In the consumption phase there is a considerably greater movement of wages in consumer industries. The fact that building has the lowest index of increase in wages causes an increase

TABLE VII. AVERAGE GROSS MONTHLY WAGES IN INDUSTRY AND BUILDING

Sector of industry	Indices of movement of wages			Index of relative level (industry as a whole=100 for each year)				
	Period of six-year plan (1955 1950)	Incomplete consumption phase (1957 1955)	Investment phase (1963 1957)	1950	1955	1957	1958	1963
Industry as a whole.	200.4	133.4	126.3	100	100	100	100	100
Investment industry	207.8	129.7	126.4	100.3	104.7	102.1	109.2	101.9
Building	190.6	119.9	134.1	—	—	—	—	—
Investment industry plus building	199.1	125.3	129.5	107.7	107.6	101.4	108.0	103.8
Other industry	197.3	135.8	126.1	99.8	97.1	99.2	94.6	98.6

Source. Calculated on the basis of the weighted mean of average wages by employment, from the following sources: industrial wages 1950, *Rocznik Statystyczny*, 1956, pp. 111, 112; industrial employment 1949, *ibid.*, p. 99; industrial wages 1955-1961, *ibid.*, 1962, pp. 122, 123; industrial wages 1962-1963, *ibid.*, 1964, p. 147; industrial employment 1955-1960, *Statystyka Przemysłu*, 1960, pp. 72-74; industrial employment 1961-1962, *Rocznik Statystyczny*, 1963, pp. 147-149; industrial employment 1963, *ibid.*, 1964, p. 141; employment and wages in building 1950-1963, *ibid.*, p. 176.

in the difference between the movement of the average wages of the totality of persons employed for investment purposes and those of persons employed in other sectors of industry. Obviously this difference was due to the raising in 1956 and 1957 of the wages paid to persons employed in the most poorly paid sectors belonging to the consumer industries. In the new phase of investment (1957-63) the rate of increase in the wages paid in both types of industries is almost identical. The mean annual

increases computed for this period range from 4.9 per cent. for the totality of persons employed for investment purposes to 3.9 per cent. for persons in other industrial employment.

When, however, we examine the relative wage level as between these two categories we find that it undergoes marked fluctuations which cause the wage levels of these categories to approximate and then to move apart again.¹

It is possible to associate these changes with phases of economic expansion, since the smallest differentiation occurs in 1957, during the consumption phase, and the greatest in 1958, at the start of the new investment phase. These differences are not, however, large enough to justify the conclusion that wages were used as a means of directing intersectoral movements of the labour force during the different phases of economic expansion. One should nevertheless bear in mind the very general nature of the figures we are using (the average figures for very large and internally heterogeneous aggregates), a factor which limits the reliability of the conclusion.

The fact that there is no sufficiently clear trend in the changes in the relative level of wages of workers employed for investment purposes and other industrial workers prompts us to make an analysis of the average wages of industrial workers classified according to the part played by the various sectors of industry in economic expansion. In the literature on the subject we discover attempts to single out the "higher ranks" of economic expansion. In the Marxist theory of industrialisation prominence is usually given to heavy industry, especially the machine-building industry. In the modern theory of expansion for developed countries the view is put forward that the "latest" industries (the atomic industry, electronics, synthetic products, etc.) and modern industry (that which originated at the beginning of the twentieth century) have become the chief driving force in the development of industrial production.² Without going into the theory of expansion we shall try—on the basis of the indices for the dynamics of the development of the different industries—to determine the connection between this development and the movement of wages. The available statistical material obliges us to confine the scope of the analysis in principle to the years 1950-60. The choice and grouping of the industries are also determined by the availability of data on their

¹ In 1950 the difference between the relative level of the wages of persons employed in investment industries and in other industries was 0.5 of a point; it rose to 7.6 points in 1955, fell to 2.9 points in 1957, rose again to 14.6 points in 1958 and fell to 3.3 points in 1963. The difference between the wages paid in investment industries and building and those paid in other industries fluctuated similarly. It amounted to 7.9 points in 1950, 10.5 points in 1955, 2 points in 1957, 13.4 points in 1958 and 5.2 points in 1963. It may be assumed that in 1955 these differences were comparatively large.

² See François PERROUX "Industries motrices et la planification de la croissance", in the jubilee collection of O. Lange *On political economy and econometrics* (Warsaw, Państwowe Wydawnictwo Naukowe, 1964).

development. As indices of this development we have taken changes in number employed, equipment-labour ratio and productivity.

On the basis of the material referred to above it is clear that the most pronounced movement of average wages is to be found in the industries characterised as heavy industry (an exception being textiles and clothing which had a very low level of wages in the initial year). This might confirm the "classical" Marxist belief in the granting of preferential treatment to heavy industry in a period of industrialisation. Division into periods corresponding to the two five-year plans makes it difficult to analyse the connection between stages of economic expansion and the wages paid in the different industries, since the plan periods do not coincide with the phases of expansion. In each case during both periods the machine-building industry had practically the highest rate of increase in wages, coming behind non-ferrous metals the first time and behind power generation the second time. Surprisingly enough the rate of increase in wages in the building materials industry both during the period of the six-year plan and during that of the first five-year plan was relatively low.

It is difficult to discover any correlation between movements of wages and changes in the available indices of development, since the industries with the most pronounced movement of wages during the 13-year period include the following: electrical and thermal power, with a marked movement of productivity and equipment-labour ratio and almost stable employment; fuel and coking, which had a low index of equipment-labour ratio and the lowest index of productivity, but which for many years had great difficulty in satisfying the demand for manpower; and ferrous metals, with a high index of productivity and equipment-labour ratio. On the other hand one of the lowest places as regards the movement of wages is occupied by the chemical industry, which had both the highest index of equipment-labour ratio and the highest of index productivity. Indeed, there is reason to believe that the rate of increase in productivity only serves as a basis for an increase in wages if it is faster than the rate of increase of the equipment-labour ratio, since productivity is a measure of the direct achievements of live labour. Even in this approach, however, there is no proper correlation, since the greatest differences in the dynamics of productivity and the equipment-labour ratio occur in machine-building and metal products, textiles and clothing, building materials, wood and paper, leather and footwear, food and power-generation, but as far as the movement of average wages is concerned, these industries occupy the fifth, sixth, tenth, eighth, eleventh, ninth and fourth places, respectively.

As a result of the uneven movement of average wages there have been certain shifts in the relative level of wages in the industries mentioned above (see table VIII).

It is interesting to note that in the period 1950-56 the average level of wages in machine-building and chemicals rose from below to above,

while that in building materials fell from above to below, the general average level of industrial wages. After 1956 the situation of the various industries in relation to the general average was maintained both as regards sequence and, in principle, as regards deviation from the average level. An exception is fuel and coking in which the average wage level

TABLE VIII. AVERAGE GROSS MONTHLY WAGES IN INDUSTRY

Industry	Level of wages per employed person (zlotys)				Relative level of wages (industry as a whole=100)			
	1950	1956	1960	1963	1950	1956	1960	1963
Industry as a whole .	(594)	1 320	1 821	1 993	100	100	100	100
Electrical and thermal power . . .	(631)	1 364	2 087	2 288	106.2	103.3	114.6	112.7
Fuel and coking . .	(819)	1 869	2 684	2 997	137.8	141.5	147.3	150.3
Ferrous metals . . .	(680)	1 662	2 254	2 485	114.4	125.9	123.7	124.6
Non-ferrous metals.	(692)	1 701	2 315	2 479	116.4	128.8	127.1	124.3
Machine-building and metal products	(571)	1 381	2 080	2 003	96.1	104.6	114.2	100.5
Chemicals	(575)	1 277	1 764	1 901	96.8	96.7	96.8	95.3
Building materials .	(636)	1 253	1 669	1 880	107.0	94.9	91.6	94.3
Wood and paper . .	(517)	1 109	1 531	1 697	87.9	84.0	84.0	81.5
Textiles and clothing	(464)	1 023	1 466	1 587	78.1	77.5	80.5	79.6
Leather, felt and footwear	(597)	1 062	1 449	1 605	100.5	80.4	79.5	80.5
Food	(547)	1 116	1 519	1 672	92.0	84.5	83.4	83.8

Source: Compiled on the basis of Z. KNSZYIAK: *Czynniki wzrostu produkcji przemysłowej w Polsce, 1950-1960* (Indices of the development of industrial production in Poland, 1950-60) (Warsaw, Państwowe Wydawnictwo Ekonomiczne, 1964), p. 81; *Rocznik Statystyczny, 1956*, pp. 111 and 112; *ibid.*, 1964, p. 141; and *Statystyka Przemysłu, 1960*, p. 77. The data for machine-building, wood and paper, and textiles and clothing are based on estimates.

rose increasingly higher above the general average. The over-all range of average wages increased over the period under review from 59.7 points to 70.7 points, the highest and lowest figures both in 1950 and in 1963 being that for fuel and coking and that for textiles and clothing respectively.

As has already been pointed out, all these comparisons are very approximate, and the lack of information on the subject of changes in

the employment structure of each branch makes it impossible to distinguish the influence of the structural factor from that of a change in the "price of labour".

The relative wages of the basic categories of industrial workers

In the statistics of industry we find data concerning the employment and wages of workers generally and of industrial workers, subdivided into manual workers in industry, engineering and technical employees and administrative and clerical employees. We shall attempt to analyse the movement of wages and the evolution of the relative level of wages of these categories.

The observation of the changes in the relative level of wages of industrial workers classified in this way may provide different kinds of information. In the first place this is an approximate classification of posts. The overwhelming majority of managerial employees belong to the engineering and technical category, and only a few managerial posts belong to the administrative and clerical category. (It should also be borne in mind, however, that the engineering and technical category takes in much more than the management of all levels of the undertaking.) Thus analysis of the relative level of wages of these three categories gives a certain, admittedly very approximate, picture of the relative situation of subordinate and managerial personnel in production. It is of fundamental significance both as regards the functioning of undertakings and as regards social stratification, especially in relation to the myth of technocracy.

A second aspect of the analysis in question is the problem of differences in qualifications. Although persons are sometimes included in the engineering and technical category who have not even had a secondary technical education but have had several years of practical training, and although, on the other hand, there are sometimes even persons with higher education among manual workers, generally speaking engineering and technical employees represent a substantially higher level of qualifications than manual workers. To a certain extent a comparison of their earnings can serve as a basis for evaluating wage incentives for the development of qualifications, especially in relation to the "openness" of socialist society. The third and final question is the problem of the relative shortage of skilled labour. Especially in a rapidly developing economy, engineering and technical employees are the bottleneck of the employment market.¹ This situation ought to be reflected in the relative level of the wages paid to these workers as compared with the wages paid to other workers.

¹ According to data furnished by the Planning Committee of the Council of Ministers, 64.2 per cent. of the demand for technical personnel with a higher education will be met during the present five-year plan. The estimates of the regional planning commissions give a still lower index, i.e. 40.4 per cent.

We shall examine the figures and attempt to draw conclusions from them. There is fully reliable and comparable information for the period 1955-63. For 1950 there are also official, published data, but it is not certain how far they may be comparable, especially as regards their scope. The data for the period 1951-53 have been obtained from unpublished material of the Central Statistical Office and, judging from the relationship between 1951 and 1950, are not fully comparable with the other data, since it is difficult to believe that in 1951 the nominal wages of manual workers in industry fell and that the wages paid to workers in state industry were almost stabilised. Nevertheless, since we are anxious to extend the period covered by our survey, we have also quoted these merely approximate data (see table IX).

The non-comparability of the data for different periods and the interruptions in their continuity make it impossible to calculate the index of the movement of wages for the entire period. Even the indices for the different periods, however, seem interesting (see table X).

As can be seen from table IX, both in the period 1951-53 and in the period 1950-55 the wages of manual workers increased more rapidly than those of other employees. One of the main reasons for this was the 1953 reform of wages and prices to which we have already referred. Since 1956, on the other hand, the relative position of the three categories has been reversed; administrative and clerical employees have the highest index of movement of average wages, engineering and technical employees the next highest and manual workers the lowest. This "regrouping" took place in the second phase of economic development, the consumption phase, during the steep increase in the general level of wages after "the events of October 1956". Since 1958, and consequently during the subsequent investment phases, the mean annual rate of increase in the wages of these categories of workers showed very little difference.

Over the entire period 1950-63 the average wages paid to manual workers show the highest rate of increase, those paid to engineering and technical employees the next highest and those paid to administrative and clerical workers the lowest. In making these comparisons, however, it should be remembered that in our analysis we are only concerned with the remuneration paid from the "personal" wage fund. These calculations do not include payments in respect of specially commissioned work, from the reward fund and the special bonus funds, e.g. for a technical improvement. In the case of engineering and technical employees, and especially managerial employees in undertakings, income of this nature has attained quite a substantial sum.¹

¹ Surveys for 1959 and 1960 show that bonuses, rewards and payments from the works fund accounted for approximately 25 per cent. of the earnings of managerial employees in undertakings in the machine-building industry. See L. PASIECZNY: *Kierownik a bodźce materialnego zainteresowania* (The manager and incentives giving a financial interest) (Warsaw, Państwowe Wydawnictwo Ekonomiczne, 1963), p. 155.

TABLE IX. AVERAGE GROSS MONTHLY WAGES IN THE SOCIALIST SECTOR OF INDUSTRY

(In zlotys)

Category of workers	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
All employees	—	—	—	—	—	1 183	1 320	1 578	1 667	1 782	1 821	1 872	1 911	1 993
<i>of which</i>														
State industry, all employees ¹ .	594	597	697	1 079	—	1 207	1 355	1 620	1 709	1 828	1 869	1 919	1 960	2 048
<i>of which</i>														
Industrial group ¹	—	—	—	—	—	1 186	1 323	1 583	1 672	1 786	1 824	1 910	1 965	2 068
1. Manual workers	581	563	682	1 067	—	1 155	1 281	1 529	1 617	1 738	1 778	1 835	1 884	1 980
2. Engineering and technical employees	1 027	943	1 141	1 596	—	1 806	2 083	2 450	2 567	2 740	2 832	2 959	3 034	3 178
3. Administrative and clerical employees	684	727	747	1 027	—	1 138	1 279	1 580	1 678	1 774	1 837	1 901	1 956	2 037

Source: Period 1955-63, *Rocznik Statystyczny*, 1964, p. 147; period 1951-53, unpublished material of Central Statistical Office; 1951, mean calculated for four months (Mar., June, Sep., Dec.); 1952, mean for first half-year; 1950, *Rocznik Statystyczny*, 1956, p. 111.

¹ State industry includes employees in administrative bodies such as industrial ministries, who are excluded from the "industrial group".

TABLE X. INDEX OF MOVEMENT OF AVERAGE (GROSS) MONTHLY WAGES IN THE SOCIALIST SECTOR OF INDUSTRY

Category of workers	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
All employees (1955=100) . .						100	111.6	133.4	140.9	150.6	153.8	158.2	161.5	168.4
State industry:														
1950=100	100	—	—	—	—	203.1								
1951=100		100	116.7	154.8										
1955=100						100	112.3	134.2	141.6	151.4	154.0	158.9	162.3	169.6
Industrial group:														
All employees (1955=100) .						100	111.6	133.5	141.6	150.6	153.8	161.0	165.6	174.3
1. Manual Workers:														
1950=100	100	—	—	—	—	198.7								
1951=100		100	121.1	156.4										
1955=100						100	110.9	132.4	140.0	150.5	153.9	158.8	163.1	171.4
2. Engineering and technical employees:														
1950=100	100	—	—	—	—	175.8								
1951=100		100	120.9	139.8										
1955=100						100	115.3	135.7	142.1	151.7	156.8	163.8	167.9	175.9
3. Administrative and clerical employees:														
1950=100	100	—	—	—	—	166.3								
1951=100		100	102.7	137.4										
1955=100						100	112.4	138.8	147.5	155.9	161.4	167.0	171.8	178.9

Source: Based on the data in table IX.

The results of the unequal and uneven increases in wages in the different categories are reflected in changes in the relative level of wages (see table XI).

As can be seen from the table, it is hard to speak of a pronounced trend in the differentials as between the three categories. The greatest changes occur in the period 1950-53. These affect both the deviations of the average wages of each category from the general level of the wages paid to industrial workers and the relative level of the wages paid to each category. The greatest deviation from the mean (75 points) and the highest ratio of engineering and technical employees' wages to manual workers' wages occurred in 1950. In 1953, on the other hand, we can observe the smallest difference between wages: in this case the deviations from the mean amount to 52.7 points, and the ratio of engineering and technical employees' wages to manual workers' wages is 149.5. This year also has the lowest ratio of administrative and clerical employees' wages to manual workers' wages. The entire period 1950-53 is a period of increased investment effort. Consequently the tendency to grant preferential wages to engineering and technical employees and to certain categories of manual workers would seem to be justified. We can discover preferential treatment of this kind up to 1952¹, but this tendency was considerably arrested by progressive inflation and by the 1953 reform of wages and prices.

The period since 1955 does not show any marked trend in the figures analysed, since changes in the relative level of wages occur in both directions. The greatest differences between the highest and lowest wages paid to the categories analysed occurred in 1956 (60.7 points), and the smallest in 1959 (56.1 points). The highest ratio of engineering and technical employees' wages to manual workers' wages (162.6 per cent.) also occurred in 1956. Generally speaking it is true to say that the relative level of wages as between the three categories has remained stable in the last four years.

The general conclusions to be drawn from this analysis are negative; it is not possible to discover a clear connection between the relative level of the basic wages of the main categories of industrial workers and the stages of economic development in the past 13 years. The stability of this relative level also warrants the conclusion that the processes of social differentiation due to economic expansion did not operate. Since, however, we are dealing all the time with large and heterogeneous units our conclusions should only be regarded as a first approximation. If one went into greater detail one would certainly be able to make more categorical statements.

¹ The approximate nature of the data and conclusions should not be forgotten.

TABLE XI. RELATIVE LEVEL OF AVERAGE WAGES IN THE SOCIALIST SECTOR OF INDUSTRY

Category of workers	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
State industry	100	100	100	100										
Industrial group					100	100	100	100	100	100	100	100	100	100
1. Manual workers	97.8	94.2	97.8	98.8		97.4	96.8	96.6	96.7	97.3	97.5	96.0	95.8	95.7
2. Engineering and technical employees	172.8	157.9	163.7	147.9		152.3	157.4	154.8	153.5	153.4	155.3	154.9	154.4	153.6
3. Administrative and clerical employees	115.1	121.7	107.1	95.2		96.0	96.7	99.8	100.4	99.3	100.7	99.5	99.5	98.5
Ratio of 3 to 1	117.1	129.1	109.5	96.2		98.5	99.8	103.3	103.8	102.1	103.3	103.5	103.8	102.8
Ratio of 2 to 1	176.7	167.4	167.3	149.5		156.4	162.6	160.2	158.8	157.7	159.3	161.2	161.0	160.5

Source: Calculated on basis of the data in table IX.

General conclusions

Generally speaking the analyses made in this article are of a macro-economic nature, and cover broad sections and large units. Hence the conclusions drawn from them might be regarded as slightly more precise working hypotheses, helping to define the lines to be followed in later inquiries. Despite these limitations the material presented can serve as a basis for certain conclusions as to the behaviour of wages in a socialist economy under conditions of economic expansion. Among other things it may be interesting to compare them with the theory of expansion and with the results of inquiries into the same problems in other countries.

We have drawn attention to the most obvious connection between wages and economic expansion and the different stages of expansion in our analysis of the movement of the general level of wages in the national economy and the reciprocal relationship between changes in nominal wages and changes in real wages. The trends discovered in this field have shown the unquestionable benefits derived by wage earners as a result of economic expansion, but have also shown the discrepancies between investment and wages over short periods of time.

The analysis of the relative level of average wages in different sectors has shown that wage differentials between branches of economic activity tended to decrease, both in a phase of investment and in a consumption phase.

The analysis of the relative level of average wages as between industries has also shown that there was no obvious connection between the part played by the various industries in economic expansion and their situation as regards wages, despite the somewhat more favourable position of heavy industry in this respect.

Lastly, the final considerations on the relative level of the wages of engineering and technical employees, of manual workers and of administrative and clerical employees in industry tend to show the stabilisation of the relative level rather than a pattern influenced by the targets of the successive phases of expansion.

Consequently, at the present stage of the analysis, we have found no evidence that wages are having a considerable influence on the mobility of the labour force among the sectors examined. This confirms our general belief that wages play a limited part in this field as a result of the highly developed state education policy, social policy, housing policy and the directly planned policy of employment. The fact that there is no correlation between the results of expansion in the various sectors (branches of economic activity and industries) and the movement of wages in these sectors is clear evidence of the significance of social ownership of the means of production as a basis for increased prosperity for all, not merely for certain categories.