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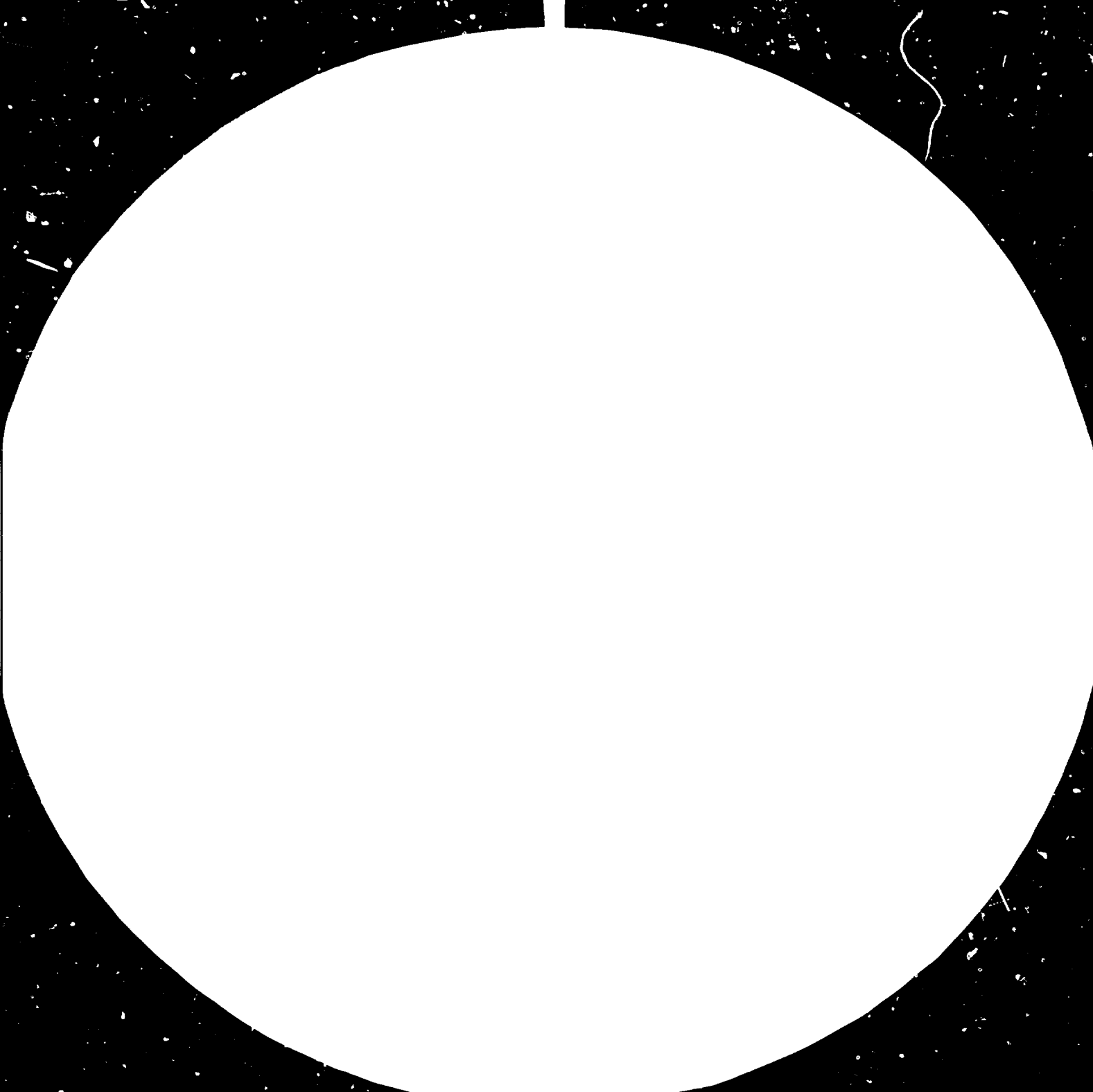
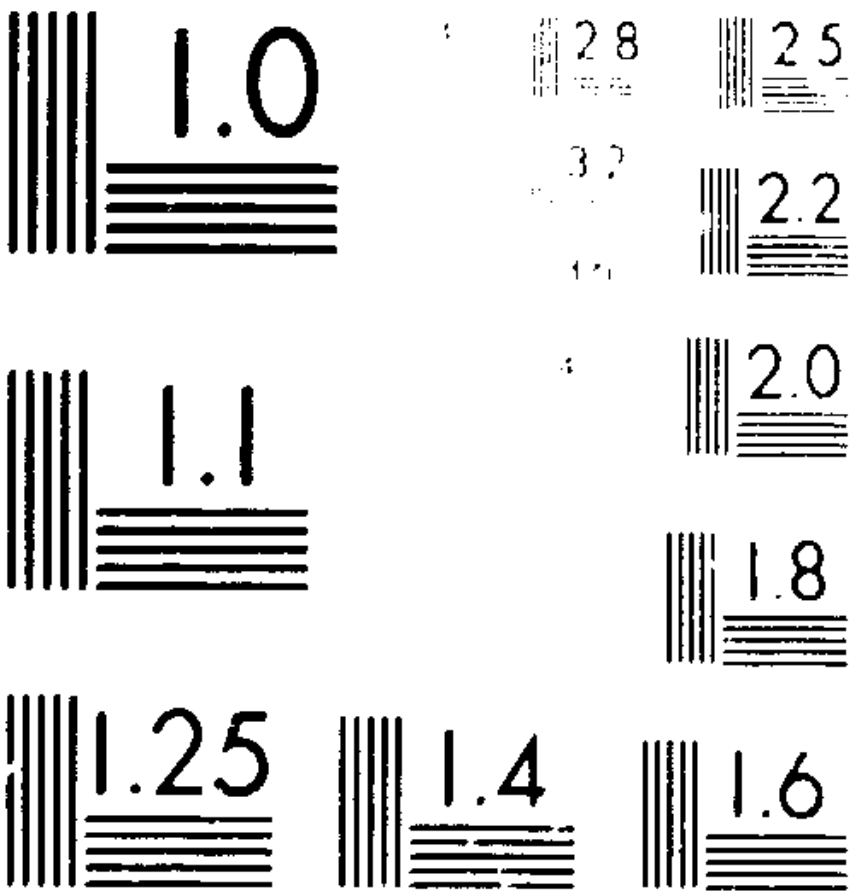
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org

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SOME RESULTS, PROBLEMS AND TASKS OF STRUCTURAL CHANGES IN THE INDUSTRY OF THE GERMAN DEMOCRATIC REPUBLIC *

by

Martin Breetzmann **

and

Klaus Steinitz ***

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** Professor, University of Economic Science, Berlin, German Democratic Republic.

*** Professor, Academy of Science of the German Democratic Republic, Berlin, German Democratic Republic.

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INTRODUCTION

This study was prepared at the request of the UNIDO Secretariat by Prof. M. Breetzmann, University of Economic Science, Berlin, GDR, and Prof. K. Steinitz, Academy of Science of the GDR and submitted to the Research Seminar on Structural Changes in Industry in European CMEA Countries, held in Budapest, Hungary, from 22 to 26 March 1982. The paper attempts to analyse briefly the industrial development of the German Democratic Republic until 1980 and to raise some problems in connexion with the economic and industrial growth during the 1980's.

The study fits in the framework of the research programme of UNIDO on industrial redeployment and structural change. This programme constitutes a surveillance of the international industrial restructuring process, aiming at highlighting pertinent trends in industrial development nationally and internationally. By identifying the factors that determine structural changes and indicating the likely direction and possible implications of this process, uncertainties and rigidities in this process might be reduced and a basis created for a forward-looking conception of industrial co-operation between the developed and the developing countries.

The present paper contains

- a short summary and evaluation of the industrial development in the GDR until 1980, and deals with
- some problems and tasks in connection with the further national economic and industrial growth in the GDR during the 1980,
- some new aspects of the content of economic growth.

1. The results of the national economic and industrial growth in the GDR

The GDR is one of the most industrialized socialist countries. Since its founding in 1949, its national economy has been characterized by relatively stable growth rates being rather high on an international scale. From 1950 to 1980, the country's gross national product GNP increased 7.25fold and the national income NI 6.37fold[1] (see Annex, Table 1.)

This development was linked with essential changes in the national economic and industrial structures. From 1950 to 1980, the share of industry (including producing handicraft) in the production of the net product increased from 43.7 to 61.9 per cent, the respective share of agriculture was 30.8 per cent in 1950 and 9.1 per cent in 1980.

Based on the economic growth, a stable and strong improvement of the people's material and cultural living standards was implemented. Basic human rights like the right to social security, the right to work, the right to education, equal rights for women, the right to housing worthy of a human being

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[1] All statistical data in the present paper are taken from the Statistical Yearbook of the German Democratic Republic 1981, Staatsverlag der Deutschen Demokratischen Republik, Berlin 1981, unless indicated differently.

and other rights are ensured for all citizens.

When evaluating the economic development of the GDR until the present time, we have to take both the specific situation after the second world war and the negative effects of some external factors into account. About 1,500 large industrial enterprises and about 800 medium-size ones, that is more than 40 per cent of the country's overall industrial capacity, had been destroyed completely during the war and the majority of the remaining enterprises had been affected more or less seriously. The crop yields of agriculture in 1946 were 56 per cent of the pre-war crop yields with regard to corn, 68 per cent with regard to potatoes and 73 per cent as to sugar beet. Livestock had been reduced to less than the half. More than 50 per cent of the flats in cities and 30 per cent of flats in towns had been destroyed. The division of the former Deutsches Reich resulted in the fact that there were only three per cent of hard coal production on the territory of the newly established GDR, the respective figures were 7.6 per cent of rolled steel production, 16.5 per cent of cement production and a rather small share in metal-processing heavy industry.

The GDR's economic development was heavily impeded in the 1950s by the emoargo policy pursued by the imperialist countries, by the FRG's efforts to lure away scientists, engineers and specialized skilled workers purposefully[1)] and by the economic effects of the "Hallstein doctrine".
Despite all these circumstances, the GDR was able to succeed in establishing an advanced and efficient socialist national economy.

The per capita national income increased from 1,485 mark in 1950 to 10,388 mark in 1980 (with comparable prices). In

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1) Estimates made by Wilhelm Baade, former director of the West-German Institute for World Economy, Kiel, say that direct national economic losses for the GDR by these campaigns of luring experts away in the 1950s amounted to more than 100 thousand million mark. This is the approximate value of investments the GDR made in industry from 1950 to 1960.

the 1970s, the national income produced increased by 59 per cent (1970 - 1980). With taking comparable prices on the basis of 1975 into account, the national income produced in 1980 amounted to 71.5 thousand million mark, 109.5 thousand million mark in 1970 and 173.9 thousand million mark in 1980.

The industrial gross production increased 9.3fold from 1950 to 1980, and it increased by 74 per cent from 1970 to 1980. In 1980, the shares of industrial branches in the industrial gross production were as follows: construction of machines and vehicles 24.7 per cent (first position), food industry 17.2 per cent, chemical industry 13.8 per cent, electrical industry/electronics/ construction of equipment 11.2 per cent, light industry (excluding textile industry) 10.1 per cent, energy and fuel industry 8.3 per cent, metallurgy 6.7 per cent, textile industry 5.4 per cent, building materials 1.8 per cent and water supply 0.8 per cent.

In the fields of the construction of machines and vehicles, electrical industry, electronics, precision engineering, optical engineering, scientific instrument manufacture, chemical industry and various branches of light industry and food-processing industry, the GDR is in possession of long-term experience, considerable potentials for research and development as well as qualified skilled workers, engineers and technicians.

Lignite is the most important domestic mineral raw material for energy production and chemical industry. In 1980, the output amounted to 258 million tons. 80 per cent of electrical energy production (in 1981, it amounted to about 100 thousand

million kwh) are based on lignite. In certain fields of chemical industry the share of natural gas exported from the Soviet Union is increasing speedily. An accelerated development is taking place in coal-based chemical industry.

A progressive transformation in the structure of industrial branches has taken place since the end of the 1960s and the middle of the 1970s increasingly. Microelectronics, scientific instrument manufacture, electrical industry, mechanical engineering and chemical industry are industrial branches with growth rates above average. This brought about a considerable increase in the share of these branches in industrial production.

Owing to comprehensive investments made in industry in the 1970s mainly, it was possible to reduce the average age of installed plants and machines essentially - in 1979 it was less than five years in 38 per cent.

A new structure of industry and building trade in terms of economy and organisation came into being through the establishment of 157 large industrial and building combines. More than 80 per cent of labour and of the potential for research and development in the respective fields are concentrated in these industrial combines.

The development of industry and industrial structures in the GDR since 1950 has confirmed and substantiated some common features of this process in the European CMEA member-countries although this development had to be implemented in various forms owing to the different natural, economic and cultural conditions in these countries. Examples of these common features are:

1. <u>The social property</u> of means of production and the power of the working class made it possible <u>to concentrate large parts of the surplus product produced in material production on selected fields of the industrial development by means of central state redistribution</u> in order to create the

preconditions for reconstructing, the overall national economy including agriculture by giving priority to the development of heavy industry (energy, fuel and raw materials mainly), metallurgy, mechanical engineering and also chemical industry.

Bourgeois ideologists allege falsly that all CMEA member-countries were forced to assume the Soviet economic model schematically; this assumption does not come true neither to the essential issue of socialist accumulation nor to other points. One fundamental difference between these countries lies in the fact that the Soviet Union was able to take the means for socialist industrialization from domestic resources exclusively whereas the political and economic assistance of the Soviet Union for the other CMEA member-countries played a decisive role in the years after 1945.

The sources of socialist industrialization varied but their use shows some common features arising from the fact that the orientation in the economic and social policies of the CMEA member-countries is based on common criteria inherent in socialism.

2. The economic policy was linked with a radical socialist reform in education; the capitalist privilege in education was eliminated and all the working people were entitled to receive training and education. Without this cultural revolution, the accumulation of knowledge and educational values in workers and farmers, by which the socialist intellectuals and qualified skilled workers came into being, would not have been possible.

3. In line with the human objectives of the socialist order, priority was conceded to the full employment of all the people able to work; this was made by means of industrialization. Experience made so far has shown that owing to political, economic, scientific and technological reasons, a phase of extensive industrialization has to be implemented in those countries where capitalism had left no industry at all or a rather small industry and a backward agriculture; this was necessary in order to put the extended reproduction of accumulation and consumption into motion, which makes it possible to achieve high growth rates, to improve the living standards and to eliminate social backwardness. Multinational monopolies have established, in specific fields, productions of a high scientific and technological level in developing countries but they have not helped solve fundamental national economic or social problems.

4. At the beginning of socialist industrialization, all European CMEA member-countries concentrated their funds on the development of heavy industry. Thus the basis for the socialist transformation in other fields like agriculture, trade or transport was created. This social priority resulted in the fact that at that time, some demands arising from the development of the non-material sphere (services, for example) could not yet be given priority. For overcoming disproportions from the time of capitalism, it is not enough to carry out an equal distribution of funds in the national economy but one has to pursue a purposeful policy relating to national economic structures with giving priority to the producing field in terms of investment allocation.

5. The state socialist foreign trade monopoly became a corner-pillar in the economic policies of European CMEA member-countries in the process of socialist industrialization. On the one hand, the state monopoly protects the process of industrialization from influences exercised by the capitalist world market. On the other, it stimulated the development of mutual economic and trade relations among the CMEA member-countries decisively because each country was in a position to link the necessary complex national economic development with the mutual exchange of goods and - beginning in the middle of the 1960s - with international socialist specialization and cooperation in science and production[1].

During the last decade, qualitatively new possibilities and tasks in connection with the further development of the GDR's industrial production emerged on the basis of the national economic level achieved, the purposefully established industrial and scientific-technological potentials in the GDR and basically changed conditions of resource reproduction. Summarily, this new stage in the development of the socialist economy can be designated as the comprehensive transition to a type of predominantly intensive extended reproduction. This transition is linked with varied consequences and tasks in connection with the future conscious and planned shaping of the national economic growth in general and the structural development of the GDR's industry in particular.

At the 10th Congress of the Socialist Unity Party of Germany in spring 1981, decisions were taken that deal with the long-term economic strategy of our Republic in the 1980s.[2]

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1) See: "Wirtschaftliches Wachstum europäischer RGW-Länder" (The economic growth of European CMEA member-countries), Akademie-Verlag, Berlin 1981, team of authors; p.20-21

2) See: Directives issued by the 10th Congress of the SED for the Five Year Plan for the GDR's national economic development 1981-1985

2. Changed conditions for the economic growth and resulting problems and tasks for the GDR in the 1980s

Changed conditions for the economic growth are identical with changed reproduction conditions. They are based on a contradictory unity of impeding, worse and more favourable conditions. To evaluate the possibilities for the future economic growth realistically, these two aspects and effects of changed reproduction conditions have to be taken into account.

As to the conditions impeding the economic growth in the 1980s, the varied and rather differentiated processes and interdependences can be summarized in the following three categories:

First: The necessary and planned dynamic economic growth with annual growth rates of more than five per cent in national income and industrial commodity production has to be ensured, in principle, by means of the same or only slightly increasing resources of labour, energy and raw materials.

With regard to energy resources, raw materials and materials that are of national economic importance, the ratios between the two sources for production increases - increased output and reduced specific consumption - have to be changed from two to one in the period from 1960 to 1975 to about one to nine in the 1980s.

The necessity to perform this changed tendency manifests itself in the fact that the rather high and long-term rates of releasing labour and reducing the specific consumption of energy and raw materials on an national economic scale cannot be achieved by more investments and expanded fixed assets but they have to be linked with a reduced intensity of investments and fixed assets.

In the 1970s, the rate of fixed assets (national income per unit of fixed assets) diminished; objectives in the Five-Year Plan 1981 - 1985, however, are based on an increase of about five per cent, that is from 350 mark per 1,000 mark of fixed assets in 1980 to 368 mark in 1985. The growth of investments was 30 per cent in the last Five-Year period; it will be essentially smaller under the current Five-Year plan.

Such a change from the former tendencies in the development of the rate of fixed assets and the efficiency of investments linked with higher demands on the substitution effects of investments for economizing labour, energy and raw materials can only be achieved through a higher quality in investment processes and the reproduction of fixed assets. Priority is given to the close and effective linkage between investment processes and scientific and technological progress, a stronger integration of scientific and technological results in existing fixed assets through modernization and a more time-efficient use of productive up-to-date fixed assets. The establishment of even closer relations between the investment process and the scientific and technological progress is concentrated on two aspects being of decisive importance for the economic growth: a stronger concentration of the investment potential on the speedier and more comprehensive implementation of innovation processes on the one hand and the elaboration and implementation of all investment projects on the basis of latest and most efficient results of science and technology on the other. Investments contribute to the intensification of the reproduction process and thus to the economic growth only when they are directed towards the materialization of those scientific and technological achievements that are most efficient under the conditions

prevailing in the GDR. Investments that are technologically backward as compared with the international standard encourage extensive tendencies and provoke disproportions. Thus they have negative effects on the economic growth.

In the Directives for the Five Year Plan 1981 to 1985 it is planned to increase the operating rate of major production machinery from 15 hours in 1980 to between 16 and 17 hours in 1985; this is to effect the economic growth in two ways. On the one hand, this brings about an increase in the respective fixed assets from seven to thirteen per cent in a period of five years thus economizing investments that would be necessary for this purpose; on the other, the structure of fixed assets applied may be changed towards higher economizing and growth effects.

Changed reproduction conditions intensify the necessity to realize the intensely expanded overall reproduction that is based on the unity of those kinds of expanded reproduction by which labour, material, energy and fixed assets are economized. Tendency-like changes to be achieved in the current Five Year Plan are shown in the following Table:

Growth rates of the national income and industrial commodity production in comparison with the growth rates of essential production elements

Growth rates of	1971/75	1981/85
Industrial commodity production:		
energy resources, raw materials and materials of national economic importance	1:0,6	1:0,1
National Income:		
Fixed assets	1:1,1	1:0,8
Industrial Commodity Production:		
Workers and employees	1:0,2	1:0,1

Source: Calculated according to the Statistical Yearbook of the GDR 1980, Staatsverlag der DDR, Berlin, 1980, p. 13, 14, 115, 124; Report of the Central Committee of the Socialist Unity Party of Germany by Erich Honecker to the 10th SED Congress, Dietz Verlag Berlin 1981, p. 54

For solving these new tasks, the GDR national economy can rely on essential progress achieved in the last few years. From 1976 to 1978, the specific consumption of energy raw materials and materials of national economic importance diminished by three per cent annually and in the last two years of the preceding Five Year Plan, a reduction of five per cent on an average was achieved.

Perspectively seen, the absolute release of labour, important raw materials, energy and fixed assets becomes an increasingly indispensable precondition for progressive structural changes and for improving the flexibility of production in line with the requirements of scientific and technological progress and the development of demands.

Second: Specific expenditures on the reproduction of essential elements and conditions of the reproduction process show a trend-like increase mainly owing to the increasingly limited amount of resources available. This applies, above all, to energy, raw materials, environmental protection and some aspects of the social working faculties. The total amount of factors demanding more expenditure will increase essentially in the 1980s as compared with the development up to the middle of the 1970s.

The long-term deterioration of the terms of trade owing to relatively increasing prices for imported energy and raw

materials results in the trend-like necessity to use a bigger part of the national income for the import of the same quantity of energy and raw materials. With taking the increasing expenditure on the production of domestic raw materials into account, the production of energy and raw materials, increasing only to a slight extent, will also require an absolutely and relatively growing part of overall social labour.

Increasing grants from social funds for ensuring stable prices and tariffs for our people show that more means are to be applied for ensuring our living standards. These grants increased from 11.2 thousand million mark in 1975 to 16.8 thousand million mark in 1980. In the years from 1972 to 1975, the annual average increase was 6.75 million mark, from 1976 to 1978 one thousand million mark and in 1979 and 1980 about 1.3 thousand million mark[1)]. An essential requirement of the social development is the further improvement of conditions for ensuring that the growing expenditures of society on social security, the promotion of equalization processes and the satisfaction of basic needs increasingly contribute to releasing social motive forces promoting increases in efficiency and the economic growth.

Third: Competition on international markets aggravated in the last few years and will be further intensified in the next years owing to the fact that practically all countries are forced to increase their net imports of oil, other energy resources and raw materials so that they have to increase their exports in order to achieve an equalization in their balances of payment; this is linked with crisis

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1) Calculated on the basis of data from the Statistical Yearbook of the GDR 1981, Staatsverlag der DDR, Berlin 1981, p. 251

and stagnation in the capitalist world and the emergence of new exporters from developing countries. The GDR national economy is faced with the necessity to provide an equilibrium between higher prices of energy and raw materials on the one hand and improved export efficiency on the other; this requires great efforts to be taken in order to improve the competitiveness of exports, especially by means of higher quality and more favourable structures of exported goods as well as further improvements in the sales organisation and the terms of customer service.

The possibility to achieve stable and relatively high rates in the economic growth despite more difficult conditions results from the fact, above all, that on the one hand, scientific and technological progress in the world has been accelerated and the potentials of national economic efficiency in such major fields like microelectronics, robot technology and biotechnology have been increased essentially in the 1980s; on the other, important preconditions were created for using the reserves of efficiency and growth in the socialist national economy more comprehensively and efficienctly.

Examples of these preconditions and more favourable conditions are: large scientific and technological potentials established in decisive fields, a close linkage between science and technology on the one hand and investments on the other, the high level of education and qualification of the working people and their growing readiness to perform outstanding work, important progress made in constructing an efficient material and technological basis of the national

economy, a higher degree of socialization in production and labour based on the establishment and consolidation of combines, a strengthening of socialist economic integration, international socialist cooperation with the Soviet Union and the other CMEA member-countries. Conditions have emerged for using the great intellectual and creative potentials, qualifications, skills and experience of the working people more efficiently than ever before in order to increase the efficiency and to improve the performances.

Changed reproduction conditions also bring about changes in the relations between scientific-technological, economic and socio-political progresses. Scientific and technological progress becomes the actual focus and most essential basis for the development in all spheres of our society increasingly. With a view to the objectively higher demands on science and technology, one has to take the fact into account that an acceleration of scientific and technological progress and its increased economic and social efficiency are necessary in order to maintain the pace of economic growth achieved so far. Before science and technology bring about an increased national income, they have to ensure that higher expenditure in important fields are compensated by addi[illegible]l savings and the smaller growth of resources by more comprehensive and efficient release and substitution [illegible]cts. Indispensable prerequisites for achieving this objective are a closer linkage between science and technology on the one hand and the development and more comprehensive use of the working people's intellectual and creative potentials, the replacement and modernization of the material and technological basis and improvements in the structures of

production and export on the other. Priority is to be given to reducing the time for processes of research, development and implementation, to improving the level of scientific and technical work and its technological application, to use innovation processes in the fields being of decisive importance for the GDR's development in such a manner that they have greater national economic effects and are implemented more speedily.

Aggravating conditions cannot be designated simply as being identical with negative conditions and more favourable conditions with positive influences on the long-term economic growth. For example, more complicated conditions in the raw material provision and the aggravated competition on the international markets have also stimulating effects on using the scientific and technological progress more efficiently, on making bigger savings or improving the quality and structure of production results more speedily. This means that aggravating conditions also bring about specific necessities and motive forces that, in connection with new opportunities arising from the productive forces and socialist production relations, promote the transition to the intensely expanded reproduction and contribute to reducing their impeding effects on the economic growth. On the other hand, favourable conditions do not promote the economic growth automatically. They contain opportunities that have to be used consciously for further improving management, planning and stimulation.

The decisions taken at the 10th SED Congress, and the economic strategy for the 1980s as substantiated in the report of the Central Comittee in particular, clearly show that the changed reproduction conditions have to be recognized as new

requirements in the 1980s that bring about higher demands on the actual use of the advantages and motive forces inherent in socialism. They are a challenge to the socialist society to use its ability of implementing the possibilities of the scientific and technological revolution on the basis of the advantages arising from socialism even more efficiently and comprehensively.

The changed reproduction conditions, especially the changed conditions of resource production, influence the economic growth in general and that of industry in particular in the following way:

1. The basically changed relations between the growth of resources and that of production covering also all the essential resources of living and materialized labour bring about objectively higher demands on <u>the shaping of substitution relations between the production factors.</u> Substitution measures, especially investments, must be based on higher targets (with regard to a higher amount of working time economized per unit of the former expenditure, for example), greater complexity (for example, a more comprehensive use of technologies that are aimed at economizing living labour, energy and raw materials at the same time) and their effects of efficiency. At the same time, objective demands emerge on a stronger <u>equalization of efficiency development in various production factors.</u> Up to the middle of the 1970s, the growth rates of labour productivity in the GDR were about the double of reduction rates covering the specific consumption of raw materials and energy and the fixed assets rates decreased up to 1980; in the 1980s, however, the annual reduction rates of the

specific consumption of raw materials and energy in industry and the growth rates of labour productivity are to be about five per cent and the output-capital ratio is to be improved.

2. The redistribution and relocation of social labour as an important aspect of the economic growth, based on scientific and technological progress and high dynamics in the production structure, increasingly require the preceding release of resources. The higher objective measures for this release and the differentiated relations between the release and the full or, if an absolute recession occurs with regard to a specific resource, partly re-utilization of resources are basic problems of the prospective economic growth. Thus the method of continuously establishing the proportionality between output and demand is also changing. Emphasis is shifted from the expansion of the output to the economizing and releasing of resources and the respective influence on the demand. The release of resources is closely linked with innovation processes. Generally, the implementation of innovation processes requires the utilization of additional resources at the first stages of the expansion, that can be taken in their majority only from other national economic fields where these resources were released. This is clearly shown in the development of microelectronics and robot technology. On the other hand, innovation processes bring about new possibilities for the release of resources. The reduction of time between the utilization and release of resources is one of the most important demands and criteria of implementing innovation processes.

3. The relations between simple and extended reproduction are decisively effected by the changed reproduction conditions. Their interlocking is becoming closer and, at the same time, more varied and contradictory. There are two opposing but closely linked and interdependent processes, above all, that are of great importance for the economic growth:

One of these processes is the acceleration of scientific and technological progress and the stronger integration of science and technology in the reproduction process. The interlocking and interdependence of simple and extended reproduction are the more strongly and varied, the more quickly and more comprehensively the pace of scientific and technological progress and its use in the reproduction process are implemented. The qualitative improvement of the production elements, not only of fixed assets but also of the subjects of labour, increasingly takes place within the circulation of reserve funds. Thus a great number of possibilities come into being for implementing essential processes of improving the efficiency and performance, that is extended reproduction of the production results or the economic growth, within the framework of qualitatively simple reproduction of the production elements. The objectives contained in the Directives issued by the 10th SED Congress for the Five Year Plan 1981 - 1985 show the respective standards that are more exacting. To evaluate the reproduction effect correctly, one cannot refer only to the extended reproduction of production results. What matters is which are the effects of these production results in continuing the reproduction process by becoming new production conditions (higher efficiency of replaced means of work and subjects of labour for the improved

satisfaction of the people's demands and a higher export efficiency.

The other process is the already mentioned long-term tendency to increase reproduction expenditure for ensuring the energy and raw material basis of our national economy. Thus the materialized reproduction of essential elements of the reserve funds - the energy and raw material basis - cannot be implemented completely anymore within the given amount of expenditure of reserve funds. As to current expenditures, higher prices result in the fact that a part of social labour not used for the production of the net product (national income) in the given reproduction period has to be used for elements of the reserve funds (production consumption) in the following reproduction period. As to increasing specific investments, the additional expenditure brings about the fact that a part of accumulation or productive net investments is to be applied as reserve investments in terms of its economic function. This may result in negative effects on extended reproduction or the economic growth. Increased demands on investment activity and the overall fixed assets reproduction are also evident in the fact that the efficiency of overall investments and the output-capital ratio in the Five-Year Plan 1981 - 1985 are to be increased despite the effects of larger reproduction expenditures in various national economic fields. In contrast with periods in the past, these tendencies of increasing reproduction expenditures at the present stage of development are of a more comprehensive and long-term character even with taking factors opposing an increase in expenditure into account.

Another result of these differentiated processes is that the redistribution of social labour increasingly applies not only to extended reproduction but also to the simple one. This applies to innovation processes and structural changes that have to be implemented increasingly within the framework of the simple reproduction of production elements on a national economic scale. This also applies to the simple reproduction of raw materials and energy, that requires, for example, an absolutely larger utilization of fixed assets for the production of the same quantity of energy and raw materials and the provision of a larger export equivalent for importing the same quantity of energy.

4. In connection with increasing reproduction expenditures on essential production elements and a higher up-grading of production, the different development of the production conditions and production results according to quantity (physical volume), quality (use-value) and value plays a more important role for the analysis and planning of the growth process. Thus the quantity of raw materials, energy resources and materials per unit of industrial production (calculated in effective prices reflecting the increased expenditures) essentially increased in the period from 1976 to 1980, accompanied by a strong reduction of the use of raw materials, energy resources and materials, being of great importance for the national economy, per unit of industrial production (calculated in comparable prices), that is the reduction of the specific consumption by about 20 per cent. The shares of the quantitative expansion and improved quality in production increases will further be changed in favour of the part played by quality. This applies both to the growth of aggregated national

economic items like national income, national economic finished product, industrial commodity production and an increase of production in economic units and the majority of groups of products or products.

3. The content of the economic growth, changes in its sources and results

The content of the economic growth is subject to essential changes relating both to the sources and the results of the growth. Changes in the sources of the economic growth occur not only in the fact that predominantly qualitative growth factors determine the economic growth increasingly but also in a further improvement of interdependences between qualitative and quantitative processes and their interlocking.

Generally, a common feature of qualitative and quantitative processes is that they bring about a production expansion; the efficiency of quantitative processes is limited to this fact generally whereas qualitative factors or processes are increasingly aimed at improving the quality of production results and the efficiency of production. The specific feature of qualitative processes is, for example, that their effects on the quantity of production, especially the magnitude of the national income produced and the national economic product available, are realised through increases in efficiency. The difference between qualitative and quantitative processes is only of relative character; in reality, they always exist together, they are interdependent of each other and there occur transformations of quantitative changes into a new quality; this is shown, for example, in the qualitative perfection of the material and technological basis that decisively depends upon the scope (quantity) of newly applied

technologies and means of work - examples are data processing plants, CNC-controlled machine-tools and processing machines and robot technology. The efficiency of top performances in science and technology for the national economic effectiveness, the satisfaction of demands and exports is determined, above all, by the pace of expansion that, in itself, is a unity of qualitative and quantitative criteria.

In the economic strategy of the 10th SED Congress, the larger scope in terms of national economic application and the speedier pace of applying the new technology occupy an important position. It is said in the Directives, for example, that the number of top products is to be increased further. They are to be used very comprehensively and without loss of time[1]. The task is to improve the quality of products in our national economy and to increase the commodity production of top products with the quality mark "Q" to about 100 thousand million mark up to 1985.[2]
From 1981 to 1985, the production of products with the quality mark "Q" is to be increased three to four times more speedily than the overall industrial commodity production.

The changed relations between qualitative and quantitative processes refer not only to the factors and sources of the economic growth but also to its results. With the further expansion of the intensively extended reproduction, the improvement of the quality of production results increasingly becomes the fundament and decisive content of the economic growth. There exists a direct linkage between the intensification of the reproduction process and the share of qualitative improvements in the economic growth.

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1) In:"Directives issued by the 10th SED Congress for the Five Year Plan for the GDR's national economic development 1981 - 1985," p. 18

2) ibid., p. 19

Also in the future, the growth will be based on the unity of quantitative and qualitative developments of production results and the unity of quantity and quality. In this dialectic unity, however, emphasis is shifted gradually to the qualitative production results. There is a tendency for an increase of their share in the production growth. In the 1980s compared with the 1970s, an essentially larger part of the economic growth will depend on improvements in the quality.

Proceeding from the tasks contained in the Directives for the Five Year Plan 1981 to 1985 and the target to achieve a higher degree of upgrading raw materials, qualitatively better production results, an improved production structure and the possible development of the raw material and energy bases, the bigger parts of production increases in chemical industry, metallurgy, mechanical engineering and electrical engineering electronics have to be achieved by increases of use- values. The report of the SED Central Committee to the 10th Congress says with regard to the tasks of chemical industry and metallurgy that the path of qualitative progress must become the major avenue of the overall raw materials economy in the GDR. The production of refined rolled steel, for example, is to be increased from about 4.3 million tons in 1980 to about 7.4 million tons in 1985 (170 per cent) - thus achieving a share of 80 per cent in the overall production of rolled steel whereas the production of rolled steel is to be increased only slightly[1)].

The further upgrading of production increasingly becomes an indispensable prerequisite and decisive feature of the economic growth in the 1980s. It is the most important method for producing a bigger national economic finished product per

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1) See Report of the Central Committee of the Socialist Unity Party of Germany to the 10th SED Congress, ibid., p.64

units of raw material and energy for satisfying the demands of consumption and productive demands as well as export demands. It is inconceivable to achieve an annual increase of five per cent in the dynamic economic growth of the future without achieving decisive progress in the upgrading of products. At the same time, this is the major factor in using the intellectual and creative potential of living labour for an increased national economic efficiency and higher performances more strongly.

What matters is an upgrading on the basis of intensified qualifications and technologies, that contributes to increasing the national economic efficiency to the maximum. The following processes and relations have to be mastered when the efficiency potentials of further upgrading are to be fully used and made effective for the economic growth:

- It is not enough to add new or additional stages of processing between raw materials and finished products; the efficiency effects are only achieved when each new stage of processing ensures an increase in the use-value that is in line with the international top level; the task is to realize the unity of upgrading and qualitative progress.
- Conditions have to be created for ensuring that the higher degree of upgrading reflected in an increased use-value per raw material unit increases far more speedily than the necessary expenditure of living labour, energy and fixed assets; higher upgrading has to be linked with the use of efficient technologies and an up-to-date and efficient organisation of production.
- Higher upgrading cannot be based on the greater utilization of living labour and fixed assets exclusively; it has to be

based on the greater use and more comprehensive application of qualified labour in research and development, construction, technology and direct production.

Taking these requirements into account contributes to using the growth potentials of upgrading more comprehensively, especially through an increased efficiency in the production and the use of more upgraded products. This is also necessary for ensuring that labour used for further processed products is recognized more strongly as socially necessary labour on the international markets thus ensuring a more favourable export profitability.

An important theoretical and practical problem in connection with determining the economic growth is whether the increases in the quality of production results are a component of the economic growth and how far qualitative improvements are reflected in the growth rates of production. It is still a widespread view that qualitative improvements are not part of the growth but work as additional factors in the satisfaction of demands. However, we hold that the direct involvement of qualitative improvements or increased use-values in the growth and in the pace of the economic growth is a fact arising from the view that the economic growth is not only the quantitative increase of production but also an improved satisfaction of demands with regard to certain production results as a unity of quantity and quality. This is the result of the genuine purpose of the economic growth under socialism, that is, the improved satisfaction of demands. The higher evaluation of better use- values is a decisive prerequisite for reflecting the real process of growth under the conditions of intensely extended reproduction. Thus the decisively smaller increase in

natural resources, raw materials and energy resources need not bring about smaller growth rates in production but has to effect changes in the content of the economic growth, in the relations between quantitative and qualitative improvements of production results. This brings about higher demands on the quality of labour as well as the development and actual use of the intellectual and creative potentials inherent in the working people.

As to all these processes of qualitative developments in the results of production, one has to take the fact into account that only an economically realizable improvement of the quality can be seen as part of the economic growth. Improved quality parametres of products that do not show any positive economic or social results are no real improvements in the use-value and thus they cannot be designated as components of the economic growth.

Summarily it can be stated that qualitative improvements play a double role for the economic growth. They are an integral part of the growth of the national income, actually available for the satisfaction of productive demands and consumption, or the national economic finished product and they are expressed in these national economic magnitudes through the price-output-ratio. On the other hand, they highly influence the economic growth in the future reproduction periods through the use of qualitatively improved means of work and subjects of labour.

The decisive reserves for an efficient economic growth in the 1980s are to be found in improving the unity of qualitative and quantitative production results.

The qualitative improvements have to become efficient, above

all, in such means of work, subjects of labour and consumer goods that show a high level of quality or a high international degree of innovation. Based on the existence of respective demands, results of top quality have to become increasingly the major sources of quantitative production developments. The Directives of the Five Year Plan 1981 - 1985 say that an especially high increase is to be achieved in the production of such groups of products and branches that are characterized by a high degree of upgrading and that are of great importance for technological progress and the satisfaction of new demands. The industrial commodity production under the competence of the specialized industries is to be increased by 31 to 33 per cent, the growth rates in the following branches and groups of products are to be above average: finished pharmaceutical products for human and veterinary medicine (by 48 to 50 per cent), chemical plants (by 65 to 70 per cent), granulated potassium fertilizer (by 100 to 150 per cent), electrical engineering and electronics (by 56 to 58 per cent), metal-cutting machine-tools (by 60 to 65 per cent), cold-forming machine-tools 58 to 62 per cent), packing plants (100 to 110 per cent), refrigerators (120 to 150 per cent) and gas stoves (by 40 to 50 per cent).

Great efforts have also to be taken in order to improve the quality of those products characterized by a large volume of production and export and, owing to the long-term developments in the domestic and international demands, by a highly dynamic factor.

When economists from socialist countries discuss about the problems of the economic growth, they attach great attention to the relations between the growth rates and factors requiring the transition to intensely extended

reproduction like the improved balancing of the economic development, the acceleration of innovation processes, improved and stable international competitiveness as well as structural adaptation to the changed conditions in the 1980s.

The major problem is how and on which basis the economic growth will be achieved. An economic growth based on the extended use of additional raw materials, energy, labour and investments results in excessive demands, disproportions and violations of the balancing of extended reproduction. Under such conditions, expenditures for the production increases are too high. Disturbances occur that negatively influence the efficiency improvements and, last not least, the effectiveness of the economic growth with a view to a better satisfaction of demands and the solution of foreign economic problems. A high economic growth can contribute to the better balancing of extended reproduction if we succeed in essentially reducing the amount of additional resources per unit of production growth and, in addition, in releasing labour, specific raw materials and energy resources in absolute terms. This will also increase the efficiency of the growth for satisfying demands and solving foreign economic problems.

The relations between the pace of the economic growth on the one hand and the dynamics of innovation processes and structural changes on the other are extremely varied and differentiated. A high innovation pace and speedy structural changes do not bring about high growth rates automatically. This is shown by the results of economic developments in West European and North American capitalist countries. Two additional aspects play an important role for the transition to intensification in the socialist countries: The efficiency

potentials of national economic innovation processes are to be used more consistently in connection with the production and application of new technology on the one hand, and on the other, structural changes of production, based on scientific and technological progress and further improvements, are to be actually efficient for improving the export structures, the marketable features of products and the profitability of exports.

The effects of the economic growth on innovation and structural developments cannot be derived from the ratio of increase. Neither practical nor theoretical proof can be established of the assumption that high growth rates must impede scientific - technological and structural progress or low growth rates must have positive effects. This is shown in the capitalist world system when taking the developments in Japan and Great Britain into consideration. In Japan, the growth rate of production, that is extremely high also for capitalist countries, has been and continues to be linked with profound processes of innovation and structural changes. Without these factors, the high rate of economic development in Japan would not have been conceivable. Vice versa, the extremely low growth rates in Great Britain in the 1970s coincided with decreasing innovation and structural adaptation.

The differentiated developments in the combines in the GDR clearly show the positive relationships between growth rates, innovation and structural changes. Combines like Carl Zeiss na, Umformtechnik "Herbert Warnke" Erfurt, Werkzeugmaschinen-kombinat "Fritz Heckert" Karl-Marx-Stadt or the combines "Mikroelektronik" and "Robotron" occupy top positions in the GDR with regard to scientific and technological developments,

the pace of introducing innovations into the production profiles, and also exports; for several years, these combines have also had growth rates in production above average.

What matters is to improve management, planning and economic stimulation in such a manner that scientific and technological progress, improved production structures, increased efficiency and the release of resources become the indispensable resources and major bases of a high growth rate. For this purpose, it is important, above all, that structural changes and the innovation of production are not only realised in a higher national economic output but that they positively influence the long-term economic growth and the better satisfaction of demands through a highly efficient use of new means of production and the favourable development of export efficiency.

We hold that the new tasks arising from the economic development of the GDR can be solved successfully on the basis of results achieved so far in the industrial as well as scientific and technological development of the GDR, its potentials created so far and the real possibilities of expanding and strengthening the socialist economic integration.

Table 1

Gross domestic product and national income (at 1975 prices)

Year	Gross domestic product	National income		
		Total	Per head of the population	Per employee in the productive sectors
	Million marks		Marks	
1950	63,100	27,310	1,485	4,287
1955	109,190	50,610	2,820	7,321
1960	161,190	71,540	4,149	10,542
1965	205,980	84,760	4,980	12,800
1970	278,080	109,470	6,418	16,334
1971	292,200	114,450	6,708	17,049
1972	309,070	120,930	7,096	18,009
1973	328,590	127,650	7,518	19,015
1974	350,910	135,780	8,022	20,142
1975	370,990	142,370	8,449	21,076
1976	389,130	147,520	8,788	21,678
1977	407,460	155,210	9,258	22,658
1978	424,037	160,760	9,594	23,353
1979	439,680	166,900	9,967	24,129
1980 +/	457,730	173,870	10,388	25,082
		1960 = 100		
1950	39	38	36	40
1960	100	100	100	100
1970	173	153	155	155
1971	181	160	162	162
1972	192	169	171	171
1973	204	178	181	180
1974	218	190	193	191
1975	230	199	204	200
1976	241	206	212	206
1977	253	217	223	215
1978	263	225	231	222
1979	272	233	240	228
1980 +/	284	243	250	238
		1970 = 100		
1971	105	105	105	104
1972	111	110	111	110
1973	118	117	117	116
1974	126	124	125	123
1975	133	130	132	129
1976	140	135	137	133
1977	147	142	144	139
1978	152	147	149	143
1979	158	152	155	147
1980 +/	164	158	162	154

Source: Statistical Pocket Book of the German Democratic Republic 1980, published by the Central Statistical Board,

Table 2

National income and net product by branches (at 1975 prices)

Industry	1965	1970	1975	1978	1979	1980[x]
			Million marks			
Industry[1]	48,369	64,536	85,492	98,921	103,611	109,360
Construction	5,956	8,511	10,705	12,036	11,956	12,125
Agriculture and forestry	13,628	14,462	16,002	15,351	16,163	16,120
Transport, posts and telecommunications	4,485	5,611	7,266	8,142	8,252	8,510
Domestic trade	12,282	15,978	21,158	23,826	24,401	25,017
Other productive branches	2,390	3,072	4,087	5,028	5,157	5,430
Net product of all branches	87,110	112,170	144,710	163,304	169,540	176,562
Adjustments	2,350	2,700	2,340	2,544	2,640	2,692
National income	84,760	109,470	142,370	160,760	166,900	173,870
			As a percentage			
Industry[1]	55.5	57.5	59.1	60.6	61.0	61.9
Construction	6.8	7.6	7.4	7.4	7.1	6.9
Agriculture and forestry	15.6	12.9	11.1	9.4	9.5	9.1
Transport, posts and telecommunications	5.1	5.0	5.0	5.0	4.9	4.8
Domestic trade	14.1	14.2	14.6	14.6	14.4	14.2
Other productive branches	2.7	2.7	2.8	3.1	3.1	3.1
Net product of all industries	100	100	100	100	100	100

1) Including productive crafts, but excluding building crafts.

x provisional dates

Table 3

Industrial gross production by industrial branches

No.	Industfial Branches	1965	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
		(1960 = 100)											
1	Energy and fuel	124	146	148	149	155	159	167	177	183	193	202	210
2	Chemical industry	146	212	225	243	264	290	315	337	353	371	386	399
3	Metallurgy	122	165	178	190	203	219	230	243	253	262	267	279
4	Building materials	139	186	198	204	218	243	260	274	285	296	293	291
5	Machines and vehicles	143	201	211	222	236	251	266	283	299	315	334	358
6	Electronics, electrical equipment	157	248	272	298	328	358	386	422	454	490	537	584
7	Light industry (excluding the textile industry)	123	165	173	181	194	208	219	233	242	252	262	269
8	Textile industry	113	140	146	154	161	172	181	191	198	206	211	219
9	Food industry	118	147	156	165	174	183	192	198	204	209	215	220
10	Total	133	182	192	203	217	233	247	262	274	287	300	314

Table 4

Industrial production by branches, 1980

Branch	Gross industrial production (millions of marks) constant prices (1975)	Percentage share in the gross industrial production	Growth of labour productivity per worker (1960 = 100)
Energy and fuel	22 266.9	8.3	210
Chemical industry	37 082.2	13.8	347
Metallurgy	18 038.0	6.7	246
Building materials	4 927.8	1.8	277
Water supply	2 067.2	0.8	...
Machines and vehicles	66 511.0	24.7	290
Electronics, electrical equipment	30 066.8	11.2	395
Light industry (excluding the textile industry)	27 033.0	10.1	293
Textile industry	14 634.8	5.4	329
Food industry	46 323.6	17.2	186
Total	268 951.3	100	289