Some Reasons for the Rapid Economic Growth of the German Federal Republic

It is obviously not possible in a short article to make an exhaustive analysis of all the reasons which have combined to give rise to the rapid economic growth of the Federal Republic since the middle of 1948. Constant reference has been made to many of these factors, and there is therefore no need to describe, for example, the currency reform, United States aid, the rejection of a controlled economy, the recasting of the fiscal system, the toleration by the State of self-financing by the economy, the influx of refugees, extensive social legislation and so on. But other facts and developments have played a considerable part in the increase in production in the Federal Republic, and these are not so widely known. These factors have been not only important but possibly decisive for the rapid economic recovery of the Federal Republic, and to some extent still are. It is therefore worth dealing with them in detail.

The Economy did not start from Scratch

Anyone travelling through the war-devastated area of what is now the Federal Republic after the Second World War must have had the impression that the collapse of German industrial production was the result of the almost complete destruction of capacity. This widespread view seemed to be borne out by the extent of the damage in the residential districts. Yet it was erroneous. Appearances were deceptive, and even in Germany it took some years until it was realized more and more that the post-war paralysis of economic life was due less to the (admittedly considerable) destruction or to the subsequent dismantling than to a combination of a whole series of reasons which were responsible for the capacity still available being, initially at least, very ineffectively utilized.

The productivity of labour was diminished above all by poor nutrition and the inadequate supply of other goods, but conditions in the rest of Europe were not much better in 1945-46. Recovery was hampered particularly by the innumerable cases of partial damage which paralysed the flow of raw materials to almost all firms and factories and the ill-effects of this difficulty were all the more persistent because, as was later obvious, they could have been quickly eliminated had there been a sound currency.

Capacity Available after the War

Careful calculations by the Institute (1) have shown that the fixed assets of industry in what is now the Federal Republic (less the Saar and West Berlin) were despite all the destruction up to the end of the Second World War all in all higher in value than they had been six years before, at the outbreak of war. *Investments in Germany during the war years had been so high that they exceeded the serious war damage and the replacement value of the plant discarded during the war for reasons of obsolescence.* And even three years later — at the time of the currency reform — the fixed assets of West German industry had a current value of 56,000 million DM (Deutsche Mark) (at 1950 prices) which was still about the same as the average for 1939.

There would not have been economic growth to the extent that actually took place after 1948 without the surviving plant and highly qualified labour, and without a good deal of luck. What was in fact achieved is in any case not a miracle, but capable of rational explanation.

The data in Table 1 give the results of the Institute's estimate of industrial assets for the years from 1936 to 1948. The capacity-creating investments during this period would have been sufficient — despite the very low investments in the years from 1945 to 1948, which were lower than the retirements — to raise industrial capacity in the Federal Republic territory 47 per cent above the volume at the beginning of 1936. This would have corresponded to a yearly

(1) Cf. in particular: R. KRENGEL, *Anlagevermoegen, Produktion und Beschaeftigung der Industrie im Gebiet der Bundesrepublik von 1924 bis 1956*, Special issues of the Institute, new series, No. 42, and *Vierteljahrshefte zur Wirtschaftsforschung*, Nos. 1/59, 1/60, 1/61, 1/62.

rate of growth of 3.2 per cent. The heavy losses during the last years of the war, the current value of which may be put at 13,800 million DM, or 28 per cent of the capacity at the beginning of 1936, and the subsequent dismantling (current value 2,800 million DM, or 5.7 per cent of the capacity at the beginning of 1936), however, led to a fall in the actual rate of growth from 1936 to 1948 to as little as 1 per cent a year.

TABLE 1

DATA ON THE DEVELOPMENT OF GROSS FIXED ASSETS IN INDUSTRY IN THE TERRITORY WHICH IS NOW THE FEDERAL REPUBLIC OF GERMANY FROM 1936 TO 1948

New values in '000's of millions of DM at 1950 prices [1]

Year	Initial level	Capacity-creating [2] investments	War damage	Dismantling	Final level	Average level
1936	49.37	+ 0.85	—	—	50.22	49.80
1937	50.22	+ 1.60	—	—	51.82	51.02
1938	51.82	+ 2.46	—	—	54.28	53.05
1939	54.28	+ 3.17	—	—	57.45	55.86
1940	57.45	+ 3.44	—	—	60.89	59.17
1941	60.89	+ 3.97	—	—	64.86	62.88
1942	64.86	+ 4.31	—	—	69.17	67.02
1943	69.17	+ 3.43	− 1.40	—	71.20	70.18
1944	71.20	+ 1.25	− 7.15	—	65.30	68.25
1945	65.30	− 0.49	− 5.24	− 0.95	58.62	60.63
1946	58.62	− 0.43	—	− 1.14	57.05	57.83
1947	57.05	− 0.19	—	− 0.50	56.36	56.70
1948 [3]	56.36	− 0.24	—	− 0.21	55.91	56.14

[1] Source: R. KRENGEL, *Anlagevermoegen, Produktion und Beschaeftigung der Industrie im Gebiet der Bundesrepublik von 1924 bis 1956*, Special issues of the Institute, new series, No. 42.

[2] Gross investment in plant, less scrapping.

[3] First half-year only.

The capital account, moreover, shows that as early as the end of 1943 a provisional peak of industrial capacity had been reached in what is now the territory of the Federal Republic. The current gross asset value at that time was more than 71,000 million DM which was only equalled and exceeded in the first months of 1953, that is nearly ten years later. Thus, although the surviving capacity of West German industry at the beginning of the currency reform was greater than in 1939, the industrial development of the Federal

Republic was nevertheless greatly retarded by the war. If a model for the rate of growth for the years 1944 to 1948 is constructed which corresponds to the development from 1936 to 1944, the capacity which should have been created by mid-1948 can be estimated at almost 85,000 million DM, that is, roughly 50 per cent more than was actually available at that time. Even if it is assumed that, but for the war, development up to 1943 would have been slower, there would nevertheless be a substantial actual deficit as compared with the theoretical asset of 1948.

Investments (2)

Investment by industry in the territory of the German Federal Republic can be followed from 1924 on. On an average, about 4,200 million DM (at 1950 prices) were invested every year from 1924 to 1960 in the Federal Republic, reflecting the general increase in investment. Thus, the yearly expenditure from 1956 to 1960 was 10,000 million DM, or more than five times what it had been from 1924 to 1929. The expansion was at an average annual rate of 5.5 per cent, and was much higher than the increase in fixed assets between 1924 and 1960, which can be put at 2.7 per cent annually. The increase in investment was specially marked in the last years owing to a decisive extent, of course, to the break caused by the war. If it is possible to speak of an economic miracle in the Federal Republic, it is certainly not, as most often happens, in referring to the rapid rise in production during the first years following the currency reform but only because investment grew constantly and not merely temporarily. However, to be precise, this process has for some years past not been an entirely continuous one but has been effected by leaps and bounds.

After the currency reform, the investment structure gradually evolved from abnormal to normal distribution. The unusually high share of consumer goods industries in the volume of industrial investment (which was almost 36 per cent in 1948-49) was caused by the fact that, since 1936, these industries had been increasingly neglected in Germany, whereas producer goods industries had been given preference as regards investment funds before and during the war.

(2) Cf. also Tables 6 and 7 of the statistical appendix.

It is also because of this fact, which was not substantially modified by war damage (this effected all types of capacity fairly equally), that the recovery of industrial production after 1948 was particularly rapid. In those branches with a high specific capital requirement (producer goods) capacity available after 1948 was, generally speaking, for some years so abundant that initially it could make do with small investments for the elimination of bottlenecks caused by the war. These years, however, were precisely the period needed to demonstrate the absurdity of the Morgenthau Plan and the Potsdam plans for the limitation of steel production and to ensure the lifting of all the restrictions by the victorious powers on investment.

TABLE 2

GROSS INVESTMENTS IN FIXED ASSETS BY INDUSTRY IN THE TERRITORY OF THE GERMAN FEDERAL REPUBLIC FROM 1924 TO 1960

Annual average		In '000's of millions of DM at 1950 prices	Average 1924-1960=100
1924	– 1929	1.86	45
1930	– 1934	0.89	21
1935	– 1939	3.16	76
1940	– 1948/1st half	3.36	81
1948/2nd half	– 1955	5.89	141
1956	– 1960	10.01	240
1924	– 1960	4.17	100

This revision of policy was, as readers will be aware, accelerated by the outbreak of war in Korea which led to a world-wide shortage of raw materials and enabled the Federal Republic, at that time a marginal producer, rapidly to achieve a radical improvement in its balance of payments on current account. For many years, there had been an inversion of investment priorities. First of all producer goods industries had been over stimulated, and after 1945 the country had been under compulsion to neglect them. It was therefore logical that future economic growth should be ensured by a redistribution of resources (law on aid to investment) when the first serious bottlenecks in the case of certain raw materials and semi-finished goods made themselves felt in the Federal Republic in

1952-53. Since then, the investment structure has remained much more balanced, and the share of industries close to the consumer, as is evidently usually the case in highly developed countries, has fallen to little more than 20 per cent of the total volume of investment.

Retirements

As the main aim of the Institute's calculation of fixed assets is to follow the development of industrial capacity, it has been worked out as a gross estimate. This means that all plant is included in the fixed assets total until, in accordance with its assumed expectation of life, it is eliminated because of obsolescence. The estimate of fixed assets, therefore, provides data on the replacement value of the plant scrapped every year, and also makes it possible to put a figure on the degree of retirements to be expected in future (3).

The extent of the retirements is of interest for a number of reasons. In the long run, it corresponds exactly to investments, but with a time-lag which is equal to the plant's expectation of life. Especially in the Federal Republic, as in all countries whose industrial equipment suffered serious war damage, it must be borne in mind that the war damage reduced capacity every time it was inflicted, but that, as opposed to this, the passage of a number of years increased the effect on capacity of current investments, since the scrapping of old plant as a result of war damage was at one blow effectively and permanently diminished.

War damage had therefore not only negative aspects, such as the immediate loss of capacity, but positive ones as well. Wherever the extent of war damage led to high investments, the inevitable consequence was a considerable modernization of the fixed assets, and this is reflected in the statistics showing the changed age structure (4).

From 1924 to 1936, the reductions of old plant in West German industry were so high that it was almost equal to the new capacity installed. In that period, when the world slump was in full swing,

(3) In principle, the estimate of fixed assets has, methodologically speaking, a great deal in common with population statistics. Normal reductions correspond to the normal "death-rate", and war damage should be regarded as if a plant "dies" prematurely (through accident), and so on.

(4) This applies, of course, to other countries too, especially Japan and the Soviet Union.

the growth of capacity was almost nil. The recovery in investment which started after 1936 was so vigorous that, in the period up to the first half of 1948, gross investments exceeded (normal) retirements by more than twice as much. After the currency reform investment increased still further, to such an extent that as much as 77 per cent of total investments went to increase capacity. Only 23 per cent were allotted to the replacement of old plant.

TABLE 3

CAPACITY-CREATING INVESTMENTS IN WEST GERMAN INDUSTRY FROM 1924 TO 1970

Annual average	Gross fixed asset investments in '000's of millions of DM	Retirements in '000's of millions of DM	Capacity-creating investments	
			in '000's of millions of DM	as a % of gross investment
1924 – 1936	1.45	– 1.40	0.05	3.4
1937 – 1948/1st half	3.40	– 1.55	1.85	54
1948/2nd half – 1960	7.52	– 1.77	5.76	77
1961 – 1970	.	– 2.52	.	.

This is the explanation why, from 1948 to 1960, a more than doubling of the gross investment in the period from 1936 to 1948 was sufficient to triple capacity-creating investments. But for the war damage, the fixed assets in West German industry would possibly have been somewhat larger today than it now is, but it would have been far less up to date and efficient.

This retarded effect of war damage will continue, though with decreasing intensity, to be felt in the years to come. Even if the gross investments from 1951 to 1970 were to remain on an average at the level attained from 1956 to 1960 — which will certainly not be the case — capacity-creating investment would continue to account for about three quarters of gross investments and guarantee a high rate of growth of capacity.

Growth of Capacity since the Currency Reform (5)

The relatively small reductions for obsolescent plant did not act as a brake on investment. On the contrary, given the favourable

(5) Cf. Tables 8 and 9 of the statistical appendix.

ratio of total to capacity-creating investments, an opportunity was created after 1948 more lasting than in the whole history of German industry up to that point, to improve the ratio of marginal investment to production. In other words, it was possible to a large extent to obtain a considerable rise in production at a modest cost by a

TABLE 4

DATA ON THE DEVELOPMENT OF GROSS FIXED ASSETS IN INDUSTRY IN THE FEDERAL REPUBLIC OF GERMANY FROM 1948 TO 1960

New values in '000's of millions of DM at 1950 prices [1]

Year	Initial level	Gross investments in plant	Elimination by scrapping	Final level	Average level
1948[2]	55.91	+ 1.62	–	57.53	56.72
1949	57.52	+ 3.61	– 1.43	59.70	58.61
1950	59.70	+ 4.61	– 1.98	62.33	61.02
1951	62.33	+ 5.27	– 1.64	65.96	64.15
1952	65.96	+ 5.64	– 1.28	70.32	68.14
1953	70.32	+ 6.41	– 1.63	75.10	72.71
1954	75.10	+ 7.55	– 1.26	81.39	78.25
1955	81.39	+ 9.28	– 1.13	89.54	85.47
1956	89.54	+ 9.43	– 2.27	96.70	93.12
1957	96.70	+ 9.38	– 1.82	104.26	100.48
1958	104.26	+ 9.38	– 2.20	111.44	107.85
1959	111.44	+ 9.96	– 2.57	118.83	115.13
1960	118.83	+ 11.92	– 2.88	127.87	123.35

[1] Source: R. KRENGEL, *Anlagevermoegen, Produktion und Beschaeftigung der Industrie im Gebiet der Bundesrepublik von 1924 bis 1956*, Special issues of the Institute, new series, No. 42, and *Produktionskapazitaeten, Kapitalintensitaet und Kapazitaetsausnutzung der westdeutschen Industrie*, Viertelsjahrshefte zur Wirtschaftsforschung, 1962, first number, pp. 50-51.

[2] Second half-year only.

relatively small expenditure on investment. This situation, which was caused by the combination of the circumstances described above, naturally gave a great fillip to investment and made possible a marked increase in the industrial capacity of the Federal Republic, which still continues. This increase was about 7 per cent a year from the middle of 1948 to the end of 1960, and from 1950 to 1960 as high as about 7.3 per cent.

The data in Table 5 show that the increase in fixed assets grew more and more rapid until in 1954-55 it reached a peak of 9.2 per

cent, but in 1958-59, too, a high rate of 6.8 per cent was achieved and rose even higher in 1959-60 (and 1960-61).

If the branches of industry are arranged in order of intensity of the increase in fixed assets effected between 1950 and 1960, the processing of plastics comes out at the top with an annual rate of

TABLE 5

GROWTH FACTORS OF INDUSTRY IN THE TERRITORY OF THE FEDERAL REPUBLIC FROM 1950 TO 1955 IN COMPARISON WITH 1955 TO 1960

Average annual rate of growth as a percentage

Cause \ Effect		Gross fixed assets	Persons employed	Net value of production	Net value of production per person employed	Coefficient of capital	Capital intensity
1. Proportionate increase in labour and capital	(a) 50–55	+ 6.7	+ 6.7	+ 6.7	–	–	–
	(b) 55–60	+ 4.6	+ 4.6	+ 4.6	–	–	–
2. Technical and organizational progress . .	(a) 50–55	–	–	+ 0.3	+ 0.3	– 0.3	–
	(b) 55–60	–	–	+ 2.9	+ 2.9	– 2.9	–
3. Replacement of labour by capital	(a) 50–55	+ 0.3	– 0.15	–	+ 0.15	+ 0.3	+ 0.45
	(b) 55–60	+ 2.9	– 1.5	–	+ 1.5	+ 2.9	+ 4.5
Total of 1-3	(a) 50–55	+ 7.0	+ 6.5	+ 7.0	+ 0.45	–	+ 0.45
	(b) 55–60	+ 7.6	+ 3.0	+ 7.6	+ 4.5	–	+ 4.5
4. Alteration in utilization of capacity . .	(a) 50–55	+ 4.1	–	+ 4.1	+ 4.1	–	+ 4.1
	(b) 55–60	– 1.3	–	– 1.3	– 1.3	–	– 1.3
5. Structural effect . .	(a) 50–55	–	–	+ 0.8	+ 0.8	– 0.8	–
	(b) 55–60	–	–	+ 0.8	+ 0.8	– 0.8	–
6. *Grand total*	(a) 50–55	+ 11.4	+ 6.5	+ 12.3	+ 5.4	– 0.8	+ 4.6
	(b) 55–60	+ 6.1	+ 3.0	+ 7.0	+ 3.9	– 0.8	+ 3.0

growth of 18.9 per cent, and the milling industry at the bottom with a yearly increase of 0.8 per cent.

In these ten years, eight industries increased their capacity at an average rate of over 10 per cent, nine other branches more than doubled their fixed assets, and, of the twenty industries with a rate below the average, 12 showed a rise of over 5 per cent a year, and only three less than that figure.

The structural changes in the fixed assets in West German industry were thus substantial in the last twelve years. But they

are not at all out of line with what happened in other countries. In fact, similar changes in favour of particular growth industries took place in nearly all Western countries, and Eastern ones as well. It is not so much the structural changes as the trend towards high average growth of capacity all round which distinguishes industrial development in the Federal Republic from the same process in numerous countries of the Western world.

Utilization of Capacity (6)

We have already pointed out that the considerable increase in West German production immediately after the currency reform, or more exactly up to 1955, was due to the growth in capacity rather than to the improvement in the initially very poor utilization of available capacity. The still modest investments in the partial bottlenecks of all branches of industry (caused by war damage) and the plentiful supply of cheap labour made it far easier for production to effect a rapid recovery.

According to the data of the Institute, the utilization of individual industries in the second half of 1948 was only, on an average, half that of the possible peak. However, the figures showed marked variations between one branch and another. Thus, the milling industry showed on over 90 per cent utilization even in 1948, while the margarine industry was only 25 per cent. Mining, again, showed a relatively high level, while for the motorcar industry the figure was very low — 25 per cent.

These huge differences in the use of capacity account in large measure for the poor circulation in the economy at that time, and also for the strong tendency to invest after the currency reform. In addition, the division of the German economy into arbitrarily determined zones, of which each had a different structure from the whole, added to the confusion. The creation of the Federal Republic allowed the structural adjustment to be speeded up more quickly than was possible in the smaller territory of the Soviet-occupied zone. The process was concluded, in the main, in the West as early as 1950, while the approximate normalization (but not maximum exploitation) of capacity (with figures for the different branches of industry which were not far off the average) was only achieved in

(6) Cf. Table 10 of the statistical appendix.

1951. Some industries had even then admittedly only relatively low utilization coefficients, because they were specially quick in raising their capacity because they foresaw favourable market prospects, but all in all industrial growth was better balanced than before.

If we disregard the record utilization exceptionally achieved in 1955 (which was too high to represent an economically practical level), the years 1951 to 1954 and 1956 to 1960 show an average figure of 89 per cent of maximum utilization, which is a very high value. This achievement, moreover, did not vary to any substantial extent in any particular year.

Thus, West German industry achieved a record utilization in these years which had never been maintained so long before. On an average, the total capacity available in the years from 1924 to 1944 was utilized to the extent of 78 per cent. In other words, the level of utilization was far lower. At that time, extremely low levels were recorded, such as 49 per cent (1932, and again in 1948) and high levels of 94 per cent (1939, and again in 1956). Even if the years 1948 to 1950, with their still markedly low utilization, are taken into account, and the value for 1955 is added, the average utilization coefficient of all postwar years since the currency reform is still as much as 84 per cent.

Investment and Capital Intensity (7)

From 1950 to 1960, West German industries invested an annual average of 1,240 DM (at 1950 prices) per employee, that is, 70 per cent more than the average for 1936 to 1938, when the corresponding figure, again at 1950 prices, was 730 DM.

The structural differences between one branch and another are mainly determined by technical considerations from 1952 on. Before that date, as already pointed out, investments in the producer goods sector were lower, and those in the consumer goods industries higher than would normally have been the case for the volume of investment as a whole. In consequence, the decline in investment intensity in the consumer goods field which lasted till 1953 was perfectly normal and provided no indication of sagging business activity.

(7) Cf. Tables 11 and 12 of the statistical appendix.

In considering the individual data, we should not forget that in the Federal Republic the rise in investment intensity to a record level took place simultaneously with a constant expansion in the number of workers employed. In fact, thanks to the influx of refugees from the Soviet Zone, the proportion of investments devoted to securing economies of labour in the years following the currency reform was inconsiderable, and only from 1955 on did it begin to rise.

It is worth emphasizing in this connection that the rise in investment in the Federal Republic was not only tolerated by the Trade Unions for a considerable period but was underpinned by years of restraint in the matter of wage policy. The result was that both labour and capital were able to add substantially to their earnings. This was because, thanks to the increasing investment intensity, capital intensity also showed a gradual tendency to increase more rapidly. Thus a vital prerequisite was created for a durable increase in the productivity of labour and in the workers' standard of living.

The capital intensity of West German industry in the twenties and thirties hardly showed any increase because the investment process was for a long time static. In sympathy, the productivity of labour also remained unchanged. But the postwar period gave rise to developments in these respects, too, with considerable dynamic effects.

This is especially the case in recent years. Up till 1955, it was sufficient for the utilization of plant to become by and large normal for productivity to rise — from a relatively low level, it is true. Thereafter, it was above all organizational and technical progress which contributed to the further increase in the productivity of labour. As the data of the capital account show, capital intensity increased correspondingly from an average of 12,770 DM per employed person in 1950 to only 13,050 DM in 1955. In the following years, there was a rapid increase, and in 1960 the average figure was 16,230 DM. The average annual expansion from 1955 to 1960 was 4.5 per cent, or ten times as much as it had been from 1950 to 1955.

Productivity of Capital (8)

But it is not only labour whose productivity in West German industry has risen sharply in recent years. This is, in any case, a well-known occurrence, which need not be further analysed at this

(8) Cf. Table 13 of the statistical appendix.

point. The productivity of capital, too, has developed for years in such a way as to encourage the growth of industry and even of the economy as a whole.

On an average, the productivity of capital in the economy of the Federal Republic, measured by the net value of production (gross national product) per unit of capital available, rose from 1950 to 1960 by over 28 per cent, of which 26.3 per cent was from 1950 to 1955 alone. For industry, the average increase in the productivity of capital during this latter period was 27.6 per cent. Thereafter, it declined slightly up to 1960, by 2.9 per cent. Thus, the development in industry was somewhat different from that in the economy as a whole. The differences are due to the fact that the utilization of funds in industry from 1955 to 1960 fell more steeply than in the economy as a whole.

If oscillations in the utilization of fixed assets are eliminated, we have for both periods, not only for industry but also for the whole economy, a structural effect which has raised the productivity of capital. This effect is the result of a different rate of increase in production, both in industry and in the economy of the Federal Republic as a whole between those branches with a productivity of capital below the average and those where the figure was above the average. The production of the former rose more slowly and that of the latter more rapidly than either industry as a whole or the economy.

These structural effects enabled West German industry both before 1955 and after to increase production every year almost 1 per cent more quickly than the employment of capital. From the currency reform till 1960, this structural growth of the productivity of capital in industry can be put at 10.5 per cent on an average. This corresponds for 1960 to a turnover of 27,000 million DM, which was achieved without any corresponding increase in investment. In other words, it was a kind of bonus.

The investment process in the postwar period has thus received substantial support from structural factors in its effect on growth, and it is possible that this will continue.

The Factors Determining Growth — an Attempted Appraisal

As the purpose of this investigation is to discuss certain important factors in the growth of the West German economy which are not

so widely known as, for example, the influx of refugees from the Soviet Zone, we cannot go into the increase in employment in industry and in other sectors. However, the importance of this consideration for the economic growth for the Federal Republic will be clear from the following attempt at quantitative appraisal.

This attempt links up with an investigation published some years ago by the Institute (9). It aims at quantifying the causes of industrial growth in the Federal Republic on specific assumptions and at assessing the importance of the different causes of the development of the factors of production and also of production itself.

The calculation makes the following assumptions, which are both plausible and confirmed by observation covering a number of years:

(a) Technical progress is defined as the quantitative (or qualitative) increase in the net value of production — expenditure of labour and capital remaining unchanged.

(b) No technical progress in the production process without replacement of labour by capital, and vice versa.

(c) In a homogeneous single case, if there is no change in the utilization, the capital-output ratio remains constant.

The results of the calculation are given in Table 5. This table again summarizes the essential results of our investigation. It shows that, in the first half of the decade under consideration, completely different forces and processes were responsible for economic growth in the Federal Republic than in the second half. From 1950 to 1955, the proportionate increase in the labour force and in the capital required for their employment, as well as the increase in the utilization of capital, was of decisive importance for the increase in production, with shares of 56 and 34 per cent respectively of total growth.

From 1955 to 1960, on the contrary, the decline in the utilization of capacity acted rather as a brake, and the increase in employment also slackened. However, technical and organizational progress in production made up for this. More than 40 per cent of the growth in production in this period is due to that progress, while

(9) F. Grubnig, "Substitution und technischer Fortschritt im gesamtwirtschaftlichen Wachstumsprozess", and R. Krengel, "Wachstumskomponenten der westdeutschen Industrie", both in *Konjunkturpolitik*, 5th year, Berlin, 1959, p. 1 *et seq.*

its contribution to the increase in production up to 1955 was less than 3 per cent of total growth.

The same considerations apply to the rise in the productivity of labour. The main factor acting in this sense was, up till 1955, the improvement in utilization (which accounted for 77 per cent of the total rise), while after 1955 this rôle was taken over by technical progress (which was then responsible for 74 per cent).

All in all, however, it turns out that the rate of growth since 1955 has slowed down substantially as compared with the rate during the years immediately before that date. However, the causes of the (admittedly slower) growth in production in recent years are having a more lasting effect than the largely ephemeral and non-recurring causes of the (greater) increase in production form 1948 to 1955. There is no doubt that an increase in production based on the greater utilization of technical and organizational progress can be maintained for a longer period and more successfully than a growth which is mainly dependent on the expansion of employment, since the latter process comes to a stop when the plentiful but temporary supplies of labour dry up.

In both the periods under consideration, West German industry has pursued an entirely rational policy. First of all, it put to work the abundant supplies of labour at low wage-rates, and confined itself, to start with, to investments with a great effect on capacity (elimination of war damage and so on). When plant was fully utilized (and the increase in workers employed tapered off), rationalization investments suddenly came to the fore, which was all the more understandable since for many years technical progress had been applied to production by German industry, but had rather been accepted, when it came to planning, as a welcome accessory of the investment process than consciously aimed at.

Future Developments

Since the flow of refugees from the East has almost dried up since 13 August 1961 and since there is a limit to which foreign labour (now about 700,000) can be employed, it must be assumed that future increases in production in the Federal Republic can only be achieved by technical progress and substitution, that is to say, by increasing the capital intensity of labour. Then as now, the

structural effect which is caused by the above-average growth of particularly productive branches will play a not inconsiderable rôle.

The scope for increase in capital intensity is shown by the fact that the present average capital provision per person employed in West European industrial countries is not even half as much as in the United States. The rate at which this lag in the Federal Republic and other industrial countries of Western Europe can be made good depends, on the whole, on the future of the European Economic Community and of competition between the Western and Eastern economic systems.

If developments are peaceful and satisfactory, a rate of growth in industrial production can be achieved which can be stabilized at the level of 7 per cent a year reached from 1955 to 1960.

Berlin-Dahlem ROLF KRENGEL

REAL GROSS INVESTMENT IN FIXED ASSETS IN INDUSTRY IN THE TERRITORY OF THE FEDERAL REPUBLIC OF GERMANY BY MAIN BRANCHES

in millions of DM at 1950 prices — TABLE 6

Type of industry	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Mining	*640*	*725*	*1,000*	*1,288*	*1,388*	*1,372*	*1,226*	*1,307*	*1,321*	*1,240*	*1,191*
Coal mining	480	515	774	1,046	1,107	1,067	912	1,004	1,020	926	888
Coal	380	416	624	780	811	758	679	765	748	678	684
Lignite	100	99	150	266	296	309	233	239	272	248	254
Iron ore mining	15	17	24	16	25	28	31	30	29	36	28
Potash and rocksalt mining	50	81	75	73	74	80	78	75	73	78	71
Extraction of oil	85	99	115	137	165	177	186	179	184	190	190
Other mining	10	13	12	16	17	20	19	19	15	15	14
Metal ore mining	.	.	.	.	.	.	.	.	.	.	.
Other mining [1]	.	.	.	.	.	.	.	.	.	.	.
Processing industry [2]	*3,970*	*4,543*	*4,640*	*5,117*	*6,168*	*7,906*	*8,205*	*8,069*	*8,059*	*8,715*	*10,732*
Raw mat. and prod. of raw mat. ind.	*1,345*	*1,741*	*2,002*	*2,259*	*2,893*	*3,756*	*3,563*	*3,628*	*3,644*	*3,742*	*4,429*
Stones and earths	190	206	225	254	297	369	373	352	324	474	616
Iron and steel	380	515	752	961	1,236	1,645	1,296	1,364	1,207	1,137	1,238
Iron working	250	343	554	727	933	1,260	939	1,064	935	853	919
Iron, steel and cast iron foundries	75	99	91	81	107	144	147	128	118	131	149
Wiredrawing and cold rolling mills	55	73	107	153	194	241	210	172	154	153	170
Non-ferrous metals	50	73	95	109	107	153	209	161	166	165	223
Foundries and recasting foundries	.	.	.	.	.	.	.	.	.	.	.
Semi-finished metals	.	.	.	.	.	.	.	.	.	.	.
Metal foundries	.	.	.	.	.	.	.	.	.	.	.
Chemicals [3]	400	582	562	500	825	1,124	1,164	1,140	1,215	1,262	1,662
Mineral oil processing [4]	60	73	79	145	115	136	179	262	390	328	226
Rubber and asbestos processing	50	43	48	65	70	72	70	67	85	106	142
Sawmills and woodprocessing	95	86	67	44	54	68	70	82	62	80	88
Cellulose and paper production	120	163	174	181	189	189	202	200	195	190	234
Engineering industries	*1,090*	*1,347*	*1,961*	*1,502*	*1,722*	*2,404*	*2,673*	*2,393*	*2,398*	*2,790*	*3,687*
Steel goods (including railway carriages)	45	51	63	81	74	84	109	119	95	79	94
Machine industry	435	524	530	492	585	783	860	746	694	743	1,048
Vehicles	190	248	261	331	387	607	623	522	570	872	1,187
Automobiles	125	154	150	210	247	479	511	425	482	778	1,082
Other vehicles	65	94	111	121	140	128	112	97	88	94	105
Shipbuilding	25	34	44	65	58	80	74	93	121	94	59
Aeroplane industry	.	.	.	.	.	.	4	7	15	36	49
Electrotechnical industry	235	288	233	302	346	503	604	496	541	577	723
Precision engineering and optics [5]	30	43	44	49	54	84	105	104	84	94	108
Other engineering industries	130	159	166	182	218	263	294	306	278	295	419
Consumer goods industries [2]	*885*	*880*	*728*	*791*	*931*	*1,074*	*1,217*	*1,249*	*1,215*	*1,324*	*1,640*
Ceramics	33	33	36	40	62	68	66	67	59	65	70
Glass	33	43	36	40	49	56	54	61	66	80	98
Timber processing industry	125	95	75	73	99	104	116	120	113	134	165
Musical instruments and toys [6]	7	10	8	11	12	15	16	16	18	18	18
Paper and pulp processing	35	34	39	44	54	68	81	87	103	112	130
Printing and reproduction	80	69	79	105	128	144	144	138	147	188	221
Synthetic materials processing	20	17	20	24	33	48	62	67	62	108	126
Leather	65	51	44	48	50	64	64	71	67	61	73
Leather production	20	15	14	13	15	17	13	16	17	19	26
Leather processing	8	6	5	7	10	13	12	13	11	7	8
Footwear	37	30	25	28	33	34	39	42	39	35	39
Textiles	420	439	332	344	362	426	504	525	492	471	630
Clothing	67	69	59	62	74	81	110	97	88	87	109
Foodstuffs and luxuries	*650*	*575*	*549*	*565*	*622*	*672*	*752*	*799*	*802*	*859*	*976*
Milling	55	39	24	16	12	20	31	22	29	29	25
Oil milling and margarine	20	21	12	12	21	20	23	22	26	22	25
Sugar	60	43	51	40	58	44	54	75	56	64	71
Brewing and malting	120	116	138	137	165	192	217	243	234	282	329
Other foodstuffs and luxuries	395	356	324	360	366	396	427	437	457	462	526
Tobacco processing	.	.	.	.	.	.	.	.	.	.	.
Balance of foodstuffs and luxuries	.	.	.	.	.	.	.	.	.	.	.
Total for industry [2]	*4,610*	*5,268*	*5,640*	*6,405*	*7,556*	*9,278*	*9,491*	*9,376*	*9,380*	*9,955*	*11,923*

[1] Fluor-spar, heavy spar, graphite and other mining, and peat industry. [2] Excluding laundries and dry-cleaning. [3] Including coal-processing industry and chemical fibres. [4] Including lignite and peat-tar distillation, shale extraction and processing. [5] Including watches. [6] Including jewellery and sports articles.

REAL GROSS INVESTMENT IN FIXED ASSETS PER PERSON EMPLOYED IN INDUSTRY IN THE TERRITORY OF THE FEDERAL REPUBLIC BY MAIN BRANCHES

in DM at 1950 prices — TABLE 7

Type of industry	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Mining	*1,100*	*1,201*	*1,600*	*2,003*	*2,163*	*2,131*	*1,878*	*1,957*	*2,012*	*2,024*	*2,125*
Coal mining	929	972	1,414	1,855	1,964	1,894	1,596	1,714	1,762	1,717	1,810
Coal	.	.	.	.	.	.	.	1,423	1,405	1,374	1,419
Lignite	.	.	.	.	.	.	.	5,171	5,847	5,393	5,803
Iron ore mining	816	848	1,073	688	1,206	1,307	1,371	1,244	1,225	1,663	1,390
Potash and rocksalt mining	2,966	4,293	3,725	3,525	3,337	3,360	3,259	3,133	3,089	3,195	3,158
Extraction of oil	8,019	9,340	10,849	11,206	12,719	12,995	13,201	11,808	14,145	14,230	14,903
Other mining	509	545	485	698	771	932	907	912	872	982	960
Metal ore mining	.	.	.	.	.	.	.	.	.	.	.
Other mining [1]	.	.	.	.	.	.	.	.	.	.	.
Processing industry [2]	*946*	*964*	*952*	*1,006*	*1,143*	*1,339*	*1,300*	*1,231*	*1,218*	*1,303*	*1,524*
Raw mat. and prod. of raw mat. ind.	*1,250*	*1,461*	*1,625*	*1,810*	*2,204*	*2,641*	*2,382*	*2,358*	*2,367*	*2,393*	*2,702*
Stones and earths	977	961	1,022	1,123	1,272	1,488	1,451	1,386	1,345	1,914	2,457
Iron and steel	1,213	1,441	1,956	2,481	3,068	3,678	2,702	2,715	2,430	2,312	2,374
Iron working	1,348	1,649	2,502	3,163	4,044	5,015	3,437	3,620	3,141	2,878	2,935
Iron, steel and cast iron foundries	835	947	804	743	911	1,081	1,040	908	908	1,033	1,100
Wiredrawing and cold rolling mills	1,449	1,630	2,149	3,153	3,576	3,841	3,223	2,551	2,227	2,236	2,337
Non-ferrous metals	780	943	1,219	1,384	1,236	1,659	2,239	1,704	1,720	1,632	2,067
Foundries and recasting foundries	.	.	.	.	.	.	.	.	.	.	.
Semi-finished metals	.	.	.	.	.	.	.	.	.	.	.
Metal foundries	.	.	.	.	.	.	.	.	.	.	.
Chemicals [3]	1,403	1,883	1,797	1,581	2,443	3,092	3,003	2,812	2,899	2,926	3,639
Mineral oil processing [4]	3,947	4,407	4,297	6,881	5,139	5,999	7,583	10,520	13,984	10,887	7,327
Rubber and asbestos processing	886	714	783	953	934	845	790	735	901	1,067	1,313
Sawmills and woodprocessing	1,066	929	733	524	640	766	793	948	756	991	1,074
Cellulose and paper production	2,045	2,537	2,649	2,744	2,683	2,529	2,605	2,513	2,384	2,321	2,872
Engineering industries	*744*	*802*	*766*	*805*	*853*	*1,044*	*1,060*	*903*	*881*	*999*	*1,228*
Steel goods (including railway carriages)	361	396	485	583	505	521	621	641	516	433	505
Machine industry	941	984	895	812	912	1,079	1,079	898	820	865	1,131
Vehicles	985	1,137	1,237	1,493	1,633	2,193	2,050	1,650	1,760	2,500	3,063
Automobiles	.	.	.	.	.	.	.	.	.	.	.
Other vehicles	.	.	.	.	.	.	.	.	.	.	.
Shipbuilding	556	651	650	844	692	862	722	832	1,096	927	603
Aeroplane industry	—	.	.	.	.	.	.	.	.	.	.
Electrotechnical industry	889	913	1,082	859	859	1,046	1,125	858	871	882	999
Precision engineering and optics [5]	373	442	414	442	456	636	749	737	601	672	729
Other engineering industries	441	475	484	506	560	608	631	632	570	596	808
Consumer goods industries [2]	*672*	*594*	*489*	*499*	*561*	*610*	*658*	*655*	*644*	*710*	*852*
Ceramics	618	825	541	587	816	801	759	780	692	782	843
Glass	756	802	645	667	745	768	697	767	803	939	1,113
Timber processing industry	759	524	419	398	496	497	531	540	510	620	760
Musical instruments and toys [6]	248	285	201	243	230	261	261	268	305	316	317
Paper and pulp processing	643	548	603	627	708	815	888	908	1,093	1,172	1,207
Printing and reproduction	778	607	671	832	966	1,027	968	874	873	1,089	1,283
Synthetic materials processing	936	690	771	788	951	1,148	1,331	1,245	1,010	1,487	1,529
Leather	473	343	291	299	355	370	356	381	366	349	413
Leather production	572	420	402	366	427	461	350	424	454	570	791
Leather processing	353	227	174	221	292	352	299	309	276	181	205
Footwear	464	347	285	300	352	343	380	395	368	339	372
Textiles	792	748	584	574	594	681	786	810	795	792	1,028
Clothing	372	324	268	258	294	297	367	306	280	278	332
Foodstuffs and luxuries	*1,924*	*1,611*	*1,461*	*1,452*	*1,543*	*1,595*	*1,703*	*1,744*	*1,718*	*1,839*	*2,063*
Milling	3,184	2,407	1,541	1,088	827	1,329	2,012	1,411	1,890	1,884	1,716
Oil milling and margarine	1,499	1,523	868	833	1,469	1,370	1,488	1,394	1,648	1,346	1,528
Sugar	3,665	2,530	3,201	2,479	3,466	2,594	3,245	4,244	3,225	3,837	4,238
Brewing and malting	2,988	2,606	2,783	2,610	3,009	3,328	3,505	3,664	3,352	3,946	4,395
Other foodstuffs and luxuries	1,576	1,341	1,153	1,236	1,209	1,250	1,286	1,275	1,312	1,331	1,500
Tobacco processing	.	.	.	.	.	.	.	.	.	.	.
Balance of foodstuffs and luxuries	.	.	.	.	.	.	.	.	.	.	.
Total for industry [2]	*965*	*991*	*1,026*	*1,118*	*1,251*	*1,416*	*1,354*	*1,298*	*1,290*	*1,364*	*1,569*

1 Fluor-spar, heavy spar, graphite and other mining, and peat industry. 2 Excluding laundries and dry-cleaning. 3 Including coal-processing industry and chemical fibres. 4 Including lignite and peat-tar distillation, shale extraction and processing. 5 Including watches. 6 Including jewellery and sports articles.

GROSS FIXED ASSETS IN INDUSTRY IN THE TERRITORY OF THE FEDERAL REPUBLIC OF GERMANY BY MAIN BRANCHES

in millions of DM at 1950 prices — TABLE 8

Type of industry	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Mining	*9,662*	*9,891*	*10,358*	*11,103*	*12,113*	*13,265*	*14,073*	*14,668*	*15,290*	*15,817*	*16,447*
Coal mining	8,226	8,341	8,649	9,219	10,014	10,907	11,476	11,860	12,280	12,599	12,987
Coal	6,848	6,949	7,229	7,704	8,312	8,967	9,405	9,744	10,106	10,328	10,567
Lignite	1,378	1,392	1,420	1,515	1,702	1,940	2,071	2,116	2,174	2,271	2,420
Iron ore mining	292	296	306	314	325	345	361	372	382	392	407
Potash and rocksalt mining	551	593	650	705	763	829	884	928	969	1,004	1,047
Extraction of oil	407	474	563	670	807	967	1,126	1,278	1,429	1,588	1,763
Other mining	186	187	190	195	204	217	226	230	230	234	243
Metal ore mining	.	.	.	.	.	.	.	.	.	.	.
Other mining [1]	.	.	.	.	.	.	.	.	.	.	.
Processing industry [3]	*51,255*	*54,255*	*57,781*	*61,606*	*66,133*	*72,202*	*79,050*	*85,815*	*92,560*	*99,317*	*106,905*
Raw mat. and prod. of raw mat. ind.	*22,818*	*23,611*	*25,016*	*26,712*	*28,931*	*32,008*	*35,136*	*38,001*	*40,886*	*43,491*	*45,986*
Stones and earths	1,877	1,992	2,159	2,353	2,591	2,898	3,214	3,499	3,758	4,065	4,493
Iron and steel	9,167	9,360	9,816	10,508	11,471	12,819	14,087	13,140	16,139	16,854	17,334
Iron working	6,932	7,040	7,357	7,876	8,606	9,634	10,584	11,380	12,168	12,712	13,047
Iron, steel and cast iron foundries	1,054	1,113	1,189	1,256	1,336	1,451	1,574	1,681	1,772	1,849	1,917
Wiredrawing and cold rolling mills	1,181	1,207	1,270	1,376	1,529	1,734	1,929	2,079	2,199	2,293	2,370
Non-ferrous metals	841	868	932	1,014	1,107	1,225	1,383	1,535	1,665	1,790	1,933
Foundries and recasting foundries	.	.	.	.	.	.	.	.	.	.	.
Semi-finished metals	.	.	.	.	.	.	.	.	.	.	.
Metal foundries	.	.	.	.	.	.	.	.	.	.	.
Chemicals [3]	7,362	7,623	8,060	8,466	9,026	9,929	10,919	11,860	12,822	13,726	14,680
Mineral oil processing [4]	415	469	537	643	766	888	1,037	1,246	1,560	1,903	2,154
Rubber and asbestos processing	526	532	585	630	688	752	809	859	916	988	1,085
Sawmills and woodprocessing	853	895	945	975	1,003	1,050	1,088	1,122	1,151	1,183	1,233
Cellulose and paper production	1,777	1,852	1,982	2,123	2,279	2,447	2,599	2,740	2,875	2,982	3,074
Engineering industries	*12,682*	*13,580*	*14,621*	*15,723*	*16,990*	*18,794*	*21,108*	*23,453*	*25,710*	*28,180*	*31,250*
Steel goods (including railway carriages)	752	777	812	860	912	973	1,053	1,153	1,251	1,329	1,405
Machine industry	3,706	4,102	4,547	4,971	5,419	6,034	6,796	7,550	8,233	8,918	9,765
Vehicles	2,075	2,238	2,438	2,677	2,975	3,428	4,003	4,542	5,064	5,764	6,766
Automobiles	1,108	1,217	1,339	1,487	1,682	2,021	2,495	2,944	3,384	4,003	4,920
Other vehicles	967	1,021	1,099	1,190	1,293	1,407	1,508	1,598	1,680	1,761	1,846
Shipbuilding	599	618	646	689	739	799	869	946	1,047	1,149	1,218
Aeroplane industry	—	.	.	.	.	2	8	19	144	86	
Electrotechnical industry	2,317	2,523	2,739	2,959	3,223	3,602	4,116	4,633	3,128	5,665	6,286
Precision engineering and optics [5]	396	423	459	497	540	602	691	791	881	967	1,063
Other engineering industries	2,837	2,899	2,980	3,070	3,182	3,356	3,578	3,830	4,087	4,344	4,661
Consumer goods industries [2]	*9,509*	*10,228*	*10,869*	*11,465*	*12,155*	*12,977*	*13,878*	*14,853*	*15,823*	*16,826*	*18,033*
Ceramics	443	478	515	545	587	643	698	753	804	853	908
Glass	633	679	706	732	764	803	840	879	924	977	1,046
Timber processing industry	971	1,066	1,136	1,193	1,266	1,351	1,439	1,533	1,627	1,725	1,849
Musical instruments and toys [6]	88	95	102	110	120	132	144	158	172	188	203
Paper and pulp processing	432	459	488	521	562	615	679	751	833	928	1,036
Printing and reproduction	912	970	1,028	1,105	1,204	1,322	1,441	1,556	1,673	1,813	1,991
Synthetic materials processing	108	125	143	164	191	231	284	347	411	494	608
Leather	743	788	822	855	895	942	987	1,035	1,084	1,126	1,171
Leather production	.	.	.	.	.	.	.	.	.	.	.
Leather processing	.	.	.	.	.	.	.	.	.	.	.
Footwear	.	.	.	.	.	.	.	.	.	.	.
Textiles	4,821	5,168	5,470	5,725	5,991	6,291	6,631	7,012	7,392	7,730	8,140
Clothing	338	400	459	513	575	647	735	829	913	992	1,081
Foodstuffs and luxuries	*6,347*	*6,836*	*7,276*	*7,706*	*8,058*	*8,422*	*8,928*	*9,508*	*10,131*	*10,820*	*11,636*
Milling	712	745	762	767	754	738	742	746	746	753	768
Oil milling and margarine	444	458	469	475	478	485	495	508	523	538	554
Sugar	405	449	488	525	559	591	626	679	732	783	844
Brewing and malting	983	1,082	1,190	1,308	1,421	1,554	1,727	1,926	2,136	2,372	2,662
Other foodstuffs and luxuries	3,803	4,102	4,367	4,631	4,846	5,054	5,338	5,649	5,994	6,374	6,808
Tobacco processing	.	.	.	.	.	.	.	.	.	.	.
Balance of foodstuffs and luxuries	.	.	.	.	.	.	.	.	.	.	.
Total for industry [2]	*61,017*	*64,146*	*68,139*	*72,709*	*78,246*	*85,467*	*93,123*	*100,483*	*107,850*	*115,134*	*123,352*

1 Fluor-spar, heavy spar, graphite and other mining, and peat industry. 2 Excluding laundries and dry-cleaning. 3 Including coal-processing industry and chemical fibres. 4 Including lignite and peat-tar distillation, shale extraction and processing. 5 Including watches. 6 Including jewellery and sports articles.

STRUCTURE OF GROSS FIXED ASSETS IN INDUSTRY IN THE TERRITORY OF THE FEDERAL REPUBLIC OF GERMANY BY MAIN BRANCHES

as a percentage 1950 = 100

TABLE 9

Type of industry	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Mining	*15.84*	*15.42*	*15.20*	*15.27*	*15.48*	*15.52*	*15.11*	*14.60*	*14.18*	*13.73*	*13.33*
Coal mining	13.48	13.00	12.69	12.68	12.80	12.76	12.32	11.81	11.39	10.94	10.52
Coal	11.22	10.83	10.61	10.60	10.62	10.49	10.10	9.70	9.37	8.97	8.56
Lignite	2.26	2.17	2.08	2.08	2.18	2.27	2.22	2.11	2.02	1.97	1.96
Iron ore mining	0.48	0.46	0.45	0.43	0.42	0.40	0.39	0.37	0.35	0.34	0.33
Potash and rocksalt mining	0.90	0.93	0.95	0.97	0.97	0.97	0.95	0.92	0.90	0.87	0.85
Extraction of oil	0.67	0.74	0.83	0.92	1.03	1.13	1.21	1.27	1.33	1.38	1.43
Other mining	0.31	0.29	0.28	0.27	0.26	0.26	0.24	0.23	0.21	0.20	0.20
Metal ore mining	.	.	.	.	.	.	.	.	.	.	.
Other mining 1	.	.	.	.	.	.	.	.	.	.	.
Processing industry 2	*84.16*	*84.58*	*84.80*	*84.73*	*84.52*	*84.48*	*84.89*	*85.40*	*85.82*	*86.27*	*86.67*
Raw mat. and prod. of raw mat. ind.	*37.40*	*36.81*	*36.71*	*36.74*	*36.98*	*37.45*	*37.73*	*37.82*	*37.91*	*37.77*	*37.28*
Stones and earths	3.08	3.11	3.16	3.24	3.31	3.39	3.45	3.48	3.48	3.53	3.64
Iron and steel	15.02	14.59	14.40	14.45	14.66	15.00	15.13	15.07	14.96	14.64	14.05
Iron working	11.36	10.97	10.80	10.83	11.00	11.27	11.37	11.33	11.28	11.04	10.58
Iron, steel and cast iron foundries	1.73	1.74	1.74	1.73	1.71	1.70	1.69	1.67	1.64	1.61	1.55
Wiredrawing and cold rolling mills	1.93	1.88	1.86	1.89	1.95	2.03	2.07	2.07	2.04	1.99	1.92
Non-ferrous metals	1.38	1.35	1.37	1.39	1.42	1.43	1.48	1.53	1.54	1.55	1.57
Foundries and recasting foundries	.	.	.	.	.	.	.	.	.	.	.
Semi-finished metals	.	.	.	.	.	.	.	.	.	.	.
Metal foundries	.	.	.	.	.	.	.	.	.	.	.
Chemicals 3	12.07	11.88	11.83	11.64	11.54	11.62	11.73	11.80	11.89	11.92	11.90
Mineral oil processing 4	0.68	0.73	0.79	0.88	0.98	1.04	1.11	1.24	1.45	1.65	1.75
Rubber and asbestos processing	0.86	0.86	0.86	0.87	0.88	0.88	0.87	0.85	0.85	0.86	0.88
Sawmills and woodprocessing	1.40	1.40	1.39	1.34	1.28	1.23	1.17	1.12	1.07	1.03	1.00
Cellulose and paper production	2.91	2.89	2.91	2.92	2.91	2.86	2.79	2.73	2.67	2.59	2.49
Engineering industries	*20.78*	*21.17*	*21.46*	*21.62*	*21.71*	*21.99*	*22.67*	*23.34*	*23.84*	*24.48*	*25.34*
Steel goods (including railway carriages)	1.23	1.21	1.19	1.18	1.16	1.14	1.13	1.15	1.16	1.15	1.14
Machine industry	6.07	6.40	6.67	6.84	6.93	7.06	7.31	7.51	7.63	7.75	7.92
Vehicles	3.40	3.49	3.58	3.68	3.80	4.01	4.30	4.52	4.70	5.01	5.49
Automobiles	1.82	1.90	1.97	2.05	2.15	2.36	2.68	2.93	3.14	3.48	3.99
Other vehicles	1.58	1.59	1.61	1.64	1.65	1.65	1.62	1.59	1.56	1.53	1.50
Shipbuilding	0.98	0.96	0.95	0.95	0.94	0.94	0.93	0.94	0.97	1.00	0.99
Aeroplane industry	—	.	.	.	.	.	.	0.01	0.02	0.04	0.07
Electrotechnical industry	3.80	3.93	4.02	4.07	4.12	4.21	4.42	4.61	4.75	4.92	5.09
Precision engineering and optics 5	0.65	0.66	0.68	0.68	0.69	0.70	0.74	0.79	0.82	0.84	0.86
Other engineering industries	4.65	4.52	4.37	4.22	4.07	3.93	3.84	3.81	3.79	3.77	3.78
Consumer goods industries 2	*15.58*	*15.94*	*15.95*	*15.77*	*15.53*	*15.18*	*14.90*	*14.78*	*14.68*	*14.62*	*14.62*
Ceramics	0.73	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.74	0.74	0.74
Glass	1.07	1.06	1.04	1.01	0.98	0.94	0.90	0.87	0.86	0.85	0.85
Timber processing industry	1.59	1.66	1.67	1.64	1.62	1.58	1.55	1.52	1.51	1.50	1.50
Musical instruments and toys 6	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.16	0.16	0.16	0.16
Paper and pulp processing	0.71	0.71	0.71	0.72	0.72	0.72	0.73	0.75	0.77	0.81	0.84
Printing and reproduction	1.49	1.51	1.51	1.52	1.54	1.55	1.55	1.55	1.55	1.57	1.61
Synthetic materials processing	0.18	0.19	0.21	0.22	0.24	0.27	0.30	0.34	0.38	0.43	0.49
Leather	1.22	1.23	1.21	1.19	1.14	1.10	1.06	1.03	1.01	0.98	0.95
Leather production	.	.	.	.	.	.	.	.	.	.	.
Leather processing	.	.	.	.	.	.	.	.	.	.	.
Footwear	.	.	.	.	.	.	.	.	.	.	.
Textiles	7.90	8.06	8.03	7.87	7.66	7.36	7.12	6.98	6.85	6.72	6.60
Clothing	0.55	0.62	0.67	0.70	0.73	0.76	0.79	0.83	0.85	0.86	0.88
Foodstuffs and luxuries	*10.40*	*10.66*	*10.68*	*10.60*	*10.30*	*9.86*	*9.59*	*9.46*	*9.39*	*9.40*	*9.43*
Milling	1.17	1.16	1.12	1.06	0.96	0.87	0.80	0.74	0.69	0.65	0.62
Oil milling and margarine	0.73	0.71	0.69	0.65	0.61	0.57	0.53	0.51	0.48	0.47	0.45
Sugar	0.66	0.70	0.72	0.72	0.72	0.69	0.67	0.67	0.68	0.68	0.68
Brewing and malting	1.61	1.69	1.74	1.80	1.82	1.82	1.86	1.92	1.98	2.06	2.16
Other foodstuffs and luxuries	6.23	6.40	6.41	6.37	6.19	5.91	5.73	5.62	5.56	5.54	5.52
Tobacco processing	.	.	.	.	.	.	.	.	.	.	.
Balance of foodstuffs and luxuries	.	.	.	.	.	.	.	.	.	.	.
Total for industry 2	*100.00*	*100.00*	*100.00*	*100.00*	*100.00*	*100.00*	*100.00*	*100.00*	*100.00*	*100.00*	*100.00*

1 Fluor-spar, heavy spar, graphite and other mining, and peat industry. 2 Excluding laundries and dry-cleaning. 3 Including coal-processing industry and chemical fibres. 4 Including lignite and peat-tar distillation, shale extraction and processing. 5 Including watches. 6 Including jewellery and sports articles.

GROSS FIXED ASSETS UTILIZED IN INDUSTRY IN THE TERRITORY OF THE FEDERAL REPUBLIC OF GERMANY BY MAIN BRANCHES

in millions of DM at 1950 prices

TABLE 10

Type of industry	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Mining	*8,657*	*9,638*	*10,280*	*10,533*	*10,982*	*11,679*	*12,213*	*12,469*	*12,478*	*12,227*	*12,605*
Coal mining	7,493	8,251	8,649	8,762	8,957	9,388	9,779	9,861	9,765	9,270	9,419
Coal	.	.	.	.	.	.	.	.	.	.	.
Lignite	.	.	.	.	.	.	.	.	.	.	.
Iron ore mining	219	260	306	291	266	317	338	361	355	357	374
Potash and rocksalt mining	461	545	619	637	763	804	792	808	817	869	936
Extraction of oil	334	409	522	648	794	967	1,103	1,231	1,361	1,565	1,703
Other mining	150	173	184	195	202	203	201	208	180	166	173
Metal ore mining	.	.	.	.	.	.	.	.	.	.	.
Other mining 1	.	.	.	.	.	.	.	.	.	.	.
Processing industry 2	*38,807*	*46,087*	*49,219*	*53,158*	*59,935*	*69,757*	*75,165*	*78,853*	*80,410*	*87,336*	*98,604*
Raw mat. and prod. of raw mat. ind.	*17,350*	*20,359*	*21,737*	*22,688*	*25,771*	*30,256*	*32,549*	*34,115*	*34,221*	*38,280*	*44,071*
Stones and earths	1,728	1,965	2,120	2,353	2,544	2,892	3,045	3,041	3,098	3,513	3,751
Iron and steel	7,125	8,391	9,762	9,002	10,199	12,707	13,721	14,067	13,101	14,398	16,962
Iron working	5,370	6,283	7,357	6,762	7,587	9,522	10,375	10,761	9,840	10,950	13,008
Iron, steel and cast iron foundries	860	1,102	1,165	1,040	1,201	1,451	1,483	1,421	1,318	1,401	1,603
Wiredrawing and cold rolling mills	895	1,006	1,240	1,200	1,411	1,734	1,863	1,885	1,943	2,047	2,351
Non-ferrous metals	665	810	765	869	1,086	1,225	1,244	1,289	1,329	1,444	1,695
Foundries and recasting foundries	.	.	.	.	.	.	.	.	.	.	.
Semi-finished metals	.	.	.	.	.	.	.	.	.	.	.
Metal foundries	.	.	.	.	.	.	.	.	.	.	.
Chemicals 3	4,758	5,644	5,665	6,664	7,512	8,495	9,338	10,408	11,162	12,747	14,678
Mineral oil processing 4	337	460	520	606	763	888	961	975	1,186	1,504	1,840
Rubber and asbestos processing	383	424	467	535	625	752	745	769	797	922	1,052
Sawmills and woodprocessing	816	895	808	776	853	935	987	925	885	921	1,019
Cellulose and paper production	1,538	1,770	1,630	1,883	2,189	2,362	2,508	2,641	2,663	2,831	3,074
Engineering industries	*8,446*	*11,023*	*12,354*	*12,948*	*15,253*	*18,745*	*20,310*	*20,976*	*22,276*	*24,058*	*27,890*
Steel goods (including railway carriages)	577	633	690	799	833	944	1,053	1,071	1,060	995	1,109
Machine industry	2,875	3,835	4,458	4,398	4,915	6,034	6,580	6,761	6,821	7,072	8,092
Vehicles	1,277	1,635	1,946	2,043	2,617	3,428	3,650	3,778	4,422	5,149	6,278
Automobiles	674	843	963	1,103	1,528	2,021	2,340	2,555	3,204	3,769	4,591
Other vehicles	603	792	983	940	1,089	1,407	1,310	1,223	1,218	1,380	1,687
Shipbuilding	220	288	409	533	672	799	831	861	865	782	759
Aeroplane industry	—	.	.	.	.	.	2	8	19	40	57
Electrotechnical industry	1,462	2,008	2,128	2,335	2,901	3,602	3,972	4,231	4,847	5,351	6,198
Precision engineering and optics 5	271	354	405	451	517	602	644	651	641	695	782
Other engineering industries	1,764	2,270	2,318	2,389	2,798	3,336	3,578	3,615	3,601	3,974	4,615
Consumer goods industries 2	*8,045*	*9,096*	*9,081*	*10,529*	*11,526*	*12,659*	*13,645*	*14,292*	*14,147*	*14,953*	*16,218*
Ceramics	342	434	438	459	560	643	668	673	676	694	743
Glass	416	520	495	535	618	701	793	793	865	932	1,046
Timber processing industry	861	1,002	934	1,071	1,216	1,302	1,439	1,493	1,552	1,659	1,810
Musical instruments and toys 6	51	69	73	91	113	128	144	137	138	143	158
Paper and pulp processing	386	499	436	493	551	609	679	717	720	785	884
Printing and reproduction	829	868	930	1,094	1,204	1,288	1,371	1,479	1,619	1,703	1,860
Synthetic materials processing	65	93	107	136	164	211	242	307	377	490	608
Leather	628	644	706	761	794	901	951	1,035	1,003	1,055	1,089
Leather production	.	.	.	.	.	.	.	.	.	.	.
Leather processing	.	.	.	.	.	.	.	.	.	.	.
Footwear	.	.	.	.	.	.	.	.	.	.	.
Textiles	4,139	4,665	4,532	5,381	5,770	6,229	6,631	6,875	6,453	6,702	7,170
Clothing	328	392	430	508	536	647	727	783	744	790	848
Foodstuffs and luxuries	*4,966*	*5,609*	*6,047*	*6,993*	*7,985*	*8,097*	*8,661*	*9,470*	*9,766*	*10,045*	*10,425*
Milling	572	601	616	597	631	679	702	746	719	725	733
Oil milling and margarine	254	314	393	448	466	477	495	484	464	454	450
Sugar	378	377	342	525	455	501	455	665	591	552	628
Brewing and malting	685	905	1,032	1,298	1,358	1,534	1,672	1,926	2,027	2,195	2,320
Other foodstuffs and luxuries	3,077	3,412	3,664	4,125	4,475	4,906	5,337	5,649	5,965	6,119	6,294
Tobacco processing	.	.	.	.	.	.	.	.	.	.	.
Balance of foodstuffs and luxuries	.	.	.	.	.	.	.	.	.	.	.
Total for industry 2	*47,464*	*55,725*	*59,499*	*63,691*	*70,917*	*81,436*	*87,378*	*91,322*	*92,888*	*99,563*	*111,209*

1 Fluor-spar, heavy spar, graphite and other mining, and peat industry. 2 Excluding laundries and dry-cleaning. 3 Including coal-processing industry and chemical fibres. 4 Including lignite and peat-tar distillation, shale extraction and processing. 5 Including watches. 6 Including jewellery and sports articles.

NET VALUE OF PRODUCTION PER UNIT OF GROSS STOCK OF PLANT IN INDUSTRY IN THE TERRITORY OF THE FEDERAL REPUBLIC

in DM per 1,000 DM of fixed assets at 1950 prices

TABLE 13

Type of industry	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Mining	*389*	*423*	*431*	*413*	*393*	*381*	*375*	*367*	*352*	*333*	*330*
Coal mining	387	420	425	405	380	366	362	353	338	313	308
Coal	.	.	.	.	.	.	.	.	.	.	.
Lignite	.	.	.	.	.	.	.	.	.	.	.
Iron ore mining	356	416	474	439	388	435	443	460	440	431	435
Potash and rocksalt mining	372	408	423	401	444	431	398	387	375	384	397
Extraction of oil	327	344	369	385	392	398	390	383	379	392	385
Other mining	704	807	842	872	863	816	774	787	683	620	621
Metal ore mining	.	.	.	.	.	.	.	.	.	.	.
Other mining [1]	.	.	.	.	.	.	.	.	.	.	.
Processing industry [2]	*811*	*914*	*913*	*948*	*993*	*1,053*	*1,038*	*1,009*	*967*	*973*	*1,013*
Raw mat. and prod. of raw mat. ind.	*505*	*573*	*565*	*571*	*599*	*627*	*612*	*596*	*567*	*600*	*650*
Stones and earths	844	904	900	917	900	915	868	797	756	792	765
Iron and steel	313	365	400	344	358	398	389	368	322	338	386
Iron working	273	315	353	303	311	349	346	334	285	304	352
Iron, steel and cast iron foundries	591	717	710	600	651	724	682	612	539	549	606
Wiredrawing and cold rolling mills	301	331	387	346	366	397	383	360	351	354	394
Non-ferrous metals	759	895	788	822	941	959	863	805	766	774	841
Foundries and recasting foundries	.	.	.	.	.	.	.	.	.	.	.
Semi-finished metals	.	.	.	.	.	.	.	.	.	.	.
Metal foundries	.	.	.	.	.	.	.	.	.	.	.
Chemicals [3]	564	646	613	687	726	746	746	766	759	810	872
Mineral oil processing [4]	655	791	780	760	803	806	747	631	613	637	689
Rubber and asbestos processing	1,068	1,129	1,173	1,246	1,333	1,468	1,351	1,314	1,277	1,369	1,424
Sawmills and woodprocessing	863	902	771	718	767	803	818	743	693	702	745
Cellulose and paper production	396	437	376	406	440	442	442	441	424	435	458
Engineering industries	*892*	*1,086*	*1,127*	*1,103*	*1,207*	*1,342*	*1,300*	*1,213*	*1,183*	*1,171*	*1,227*
Steel goods (including railway carriages)	1,125	1,194	1,246	1,363	1,339	1,422	1,466	1,363	1,242	1,098	1,157
Machine industry	984	1,186	1,244	1,123	1,151	1,269	1,228	1,136	1,031	1,006	1,051
Vehicles	817	965	1,045	1,019	1,196	1,363	1,270	1,175	1,258	1,290	1,340
Automobiles	972	1,107	1,149	1,186	1,452	1,598	1,499	1,387	1,513	1,503	1,491
Other vehicles	639	795	917	810	864	1,026	891	785	743	804	937
Shipbuilding	366	464	630	771	905	996	953	907	823	678	621
Aeroplane industry	—	.	.	.	.	.	.	.	.	.	.
Electrotechnical industry	945	1,792	1,164	1,182	1,348	1,498	1,445	1,368	1,415	1,414	1,476
Precision engineering and optics [5]	1,328	1,624	1,715	1,763	1,857	1,942	1,810	1,599	1,413	1,396	1,428
Other engineering industries	772	973	966	966	1,092	1,235	1,242	1,172	1,094	1,136	1,230
Consumer goods industries [2]	*1,127*	*1,189*	*1,133*	*1,249*	*1,287*	*1,339*	*1,356*	*1,335*	*1,299*	*1,239*	*1,257*
Ceramics	786	925	866	859	971	1,019	974	911	857	829	836
Glass	513	617	565	589	652	704	761	727	754	769	806
Timber processing industry	1,028	1,090	953	1,039	1,113	1,117	1,159	1,129	1,106	1,115	1,135
Musical instruments and toys [6]	2,295	2,863	2,843	3,264	3,717	3,841	3,951	3,418	3,174	3,011	3,074
Paper and pulp processing	1,220	1,218	1,221	1,294	1,340	1,353	1,367	1,305	1,181	1,156	1,166
Printing and reproduction	1,054	1,037	1,049	1,148	1,159	1,129	1,103	1,102	1,122	1,089	1,083
Synthetic materials processing	1,528	1,888	1,895	2,098	2,173	2,316	2,158	2,242	2,326	2,516	2,536
Leather	1,365	1,320	1,388	1,437	1,434	1,545	1,557	1,615	1,494	1,513	1,503
Leather production	.	.	.	.	.	.	.	.	.	.	.
Leather processing	.	.	.	.	.	.	.	.	.	.	.
Footwear	.	.	.	.	.	.	.	.	.	.	.
Textiles	1,034	1,087	998	1,132	1,160	1,193	1,204	1,181	1,052	1,044	1,061
Clothing	3,485	3,523	3,370	3,556	3,351	3,594	3,556	3,394	2,927	2,861	2,818
Foodstuffs and luxuries	*1,274*	*1,336*	*1,352*	*1,490*	*1,507*	*1,584*	*1,602*	*1,646*	*1,602*	*1,542*	*1,490*
Milling	383	385	386	372	399	439	451	477	460	459	436
Oil milling and margarine	700	838	1,026	1,156	1,195	1,204	1,224	1,165	1,086	1,033	995
Sugar	1,654	1,490	1,242	1,773	1,444	1,504	1,288	1,736	1,432	1,250	1,320
Brewing and malting	1,014	1,217	1,262	1,444	1,391	1,438	1,409	1,456	1,382	1,347	1,269
Other foodstuffs and luxuries	1,535	1,578	1,592	1,690	1,752	1,842	1,897	1,897	1,888	1,821	1,754
Tobacco processing	.	.	.	.	.	.	.	.	.	.	.
Balance of foodstuffs and luxuries	.	.	.	.	.	.	.	.	.	.	.
Total for industry [2]	*744*	*838*	*840*	*866*	*900*	*949*	*938*	*915*	*879*	*885*	*922*

1 Fluor-spar, heavy spar, graphite and other mining, and peat industry. 2 Excluding laundries and dry-cleaning. 3 Including coal-processing industry and chemical fibres. 4 Including lignite and peat-tar distillation, shale extraction and processing. 5 Including watches. 6 Including jewellery and sports articles.