

The Extent of Depreciation of Money since 1950, and the Prospective Trend of the Value of Money

REPORT PREPARED BY THE DEUTSCHE BUNDESBANK
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On 11 March 1965 the President of the Fourth Senate of the Federal Finance Court requested the Deutsche Bundesbank "to furnish detailed information on the extent of the depreciation of money during the period from 1950 up to now and on the probable future trend". This inquiry was prompted by proceedings referred to the Federal Finance Court, in which tax payers sought a decision to the effect that the depreciation of money should be taken into account when finding on their incomes. One of these lawsuits (file No. IV 300/64) has in the meantime been decided by a ruling of 27 July 1967 (Federal Taxation Gazette 1967 III, page 690), another (file No. VI R 179/66) by a ruling of 10 November 1967 ("Der Betrieb" 1968; page 425). The substantiation of the ruling passed by the Fourth Senate cites our report in condensed form. By arrangement with the Federal Finance Court we herewith publish the full text of our report.

I. The problem of measuring changes in the value of money

(1) Justified though the question as to whether the value of money has declined in the course of the past fourteen years may be, it is difficult, indeed almost impossible, to apply any generally recognised yardstick for measuring the decline. When in previous decades there was any reference to a deterioration in the value of money — as for example before World War I — the reduction in the value of the national currency was measured in the first place by the rising price for foreign currencies; in other words, the change in the value of money was read off by comparison with the change in the *external value* of money. No great attention was paid, from the angle of the currency value, to prices on the domestic market; it was considered a matter of course that boom periods should be attended by dearth. Immediately after World War I, the general public became conscious of both aspects: external value and domestic value dropped, both being accordingly regarded as symptoms of inflation. Nowadays, when talking of deterioration in the value of money, people almost exclusively have in mind the *domestic value of the currency* and seek to assess its change from price movements within the country. This no doubt is too one-sided a view. As the national currency serves to buy goods and services within the country as well as foreign currencies for the purchase of goods and services on foreign markets, it is necessary, when assessing the change in the value of money, to have regard for the twofold nature of the currency, *viz.*, its use in domestic and in international payments.

(2) It will be explained below that in the years since 1950, as far as the information available permits

of any judgment in this respect, the external and the internal values of the Deutsche Mark have moved in opposite directions. This already reveals that the question as to the change in the value of money can be answered quite differently depending on the *purpose* for which the national currency changes hands. Actually, this factor also plays an important part when it is a matter of appraising the change in the domestic value of money alone. It is generally assumed that the internal value of money can be measured by the change in prices for the same goods and services, meaning of course the average change in all prices rather than that in individual prices. Now, it is practically impossible to ascertain all prices, and moreover in many cases the reply would be very unsatisfactory if the question as to the change in the value of money, raised by an individual or a certain social group, were answered by reference to the average change in all prices for goods and services at all stages of the productive and distributive process. Conceivably many or even most prices which would be included in such calculation might be quite insignificant for the individual case. It is necessary, therefore, to pose the question as to the change in the internal value of money in such a way as to indicate the precise purpose the money is principally to serve. Once this is clear, it must as a rule be decided which prices shall be considered to be "representative" when answering this question. By the great variety of individual price indices existing in the Federal Republic of Germany it is sought to take account of these differing aspects.

(3) When it is claimed that the internal value of money can be determined from the prices (irrespective of the method by which they are ascertained) of

goods and services, this in reality applies only to an economy with *free prices* — a factor which is frequently overlooked. Only when prices can move freely is there a guarantee — at all events according to previous experience — that they are more or less “equilibrium prices”, that is to say, prices allowing anybody who can pay the price to acquire the desired commodity (just as conversely this price ensures maximum sales). In an economy with prices fixed by the government, the price movement conveys little or no information regarding the movement in the “value of money”, especially when prices, rents and wages are largely frozen. In such an economic system money can as a rule in the long run exert its functions only in the presence of governmental allocation of goods, dwellings, etc., since when prices are fixed too low demand usually exceeds supply. Where *government-controlled prices* play a part in specific markets only, the same frequently applies to such markets. In such a mixed system of free and government-regulated markets there is of course a tendency for excess demand, such as forms in a regulated market if the administratively determined price is lower than the “equilibrium price” (e. g., excess demand for dwellings whose rents are kept low in disregard of market conditions), to press for compensation on “free” market sections, causing price increases there which otherwise would not come about at that rate. The average of all prices — controlled as well as free ones — may not therefore be very far from the average of those prices which would result if all prices were free. Nevertheless, all attempts to measure the value of money on the basis of the price movement are questionable in such conditions. This becomes particularly problematic if in the course of a period reviewed the extent of governmental price control changes. In the Federal Republic of Germany this has been the case since 1950 especially for pre-currency-reform dwellings and for dwellings in houses built with public assistance, rents for which had at first been controlled but in the meantime were in many cases released while at the same time housing control was lifted for such dwellings. Prices of certain foodstuffs and industrial basic materials have also been released only gradually, and charges for services of public transport and utility enterprises were better geared to the increased level of costs. From the angle of measuring the value of money, price rises resulting from the abolition of price-fixing and rationing measures are not however comparable with a raising of free prices, since it is a matter of prices for goods of the same type but of differing economic quality. A commodity that may be acquired at any time free of governmental

allocation is valued as being of higher quality than one subject to state control, acquisition of which may not be possible at all for many persons. It is only the release of the commodity in question from price control — and hence as a rule also from rationing — that renders economically correct valuation by the market possible.

Conversely, transition from free prices to government-controlled prices of course also reduces the informative value of prices from the angle of measuring the value of money; this is true not only if price rises to be expected are thereby prevented (concealed inflation), but also if prices are thereby enforced which — as in the case of “regulated” agricultural goods — are above those prices which would form without state interference in the market. It is likewise problematic simply to regard price rises of the latter kind as a deterioration of the currency value, since administratively exaggerated prices are frequently accompanied by much lower values for those products of the same type which at given prices accumulate as surplus goods not salable on the market and which in part are sold abroad at much lower prices (pigs, butter, and the like). These low values are not however recorded in any price statistics. In this connection, mention may be made of the fact that the prices for farm produce (and hence in a certain degree also the total cost of living) in the Federal Republic of Germany would be lower if (as is the practice in England, for example) the agricultural subsidies were paid by the government directly to farmers — instead of being paid indirectly, *viz.*, through the prices charged to consumers for farm products — and the products were sold to processing industries and traders at “world market prices”. The taxes payable by the individual citizen, which (*ceteris paribus*) in that case would necessarily be higher and likewise absorb some of his “purchasing power”, would not however be reflected in the index as “rise in the cost of living”.

As in the last analysis influences of this kind are not measurable, measuring the internal value of money by the movement of all prices, including those influenced by the state, therefore means a hardly justifiable simplification especially in a period in which the extent of governmental price interference has greatly changed and to some extent is still changing.

II. The external value of the Deutsche Mark since 1950

(4) In the course of the fourteen years since 1950 the external value of the Deutsche Mark has increased in three respects: For one thing, this applies to the

exchange rate of the Deutsche Mark, expressed in gold or a foreign currency (other than the Dutch guilder). In a system of fixed exchange rates, such as exists in principle for the members of the International Monetary Fund, the exchange rate of any currency of course does not provide much information on the possible changes in the external value of that currency, since in such a monetary system a change in the external value of a currency at first merely results in disequilibrium of the balance of payments, and only if this disequilibrium continues for a considerable length of time may the parity in certain circumstances be altered. For almost an entire decade, from 1951 to 1960, the Federal Republic of Germany has continuously shown balance-of-payments surpluses. The undervaluation of the DM in relation to other currencies which is reflected in this fact was corrected by the upward revaluation of the DM, by 5 per cent, in 1961. This means that the external value of the DM has correspondingly increased.

(5) A further improvement — in terms of quality — in the value of the DM in international transactions, which of course is not reflected in the official exchange rate, may be seen in the fact that foreign exchange control, which in 1950 comprised almost all fields of external transactions, was gradually relaxed and completely abolished in 1958. *Since that time foreign currencies are obtainable against Deutsche Mark without any restriction* and for all purposes. It is of course impossible to express in terms of quantity this advantage for the general public. The great importance frequently attached, during the period of exchange control, to the value of free availability of foreign currency is indicated by the *free rates for bank notes* at which foreign currencies were obtainable abroad against Deutsche Mark. Thus, early in 1950 the Zurich free market rate for DM 100 (notes) was only Swiss francs 73.50. In 1960 however, the year before the revaluation, when exchange control had been lifted, Sfrs. 103.50 was paid in Zurich for DM 100 (notes) and in 1964 — after revaluation — as much as Sfrs. 108.60 (cf. Table 1).

(6) In a third respect, too, the external value of the Deutsche Mark has increased, though only slightly, over the past fourteen years, *viz.*, if it is *measured by the prices of goods imported by the Federal Republic of Germany*. According to the price index for imported goods, calculated by the Federal Statistical Office, in 1964 2 per cent less had to be paid in terms of DM for the same quantity of imports than in 1950. This improvement in the external value of the DM is due to the fact that, in line with the price tendency on the

Table 1: External Value of the DM

| Period | Official exchange rate ¹⁾ | | | | Bank note rate in Zurich ²⁾ | | Index of purchase prices of foreign goods 1950 = 100 ³⁾ |
|---|--------------------------------------|------------|-----------------------------------|------------|--|------------|--|
| | DM 100 = U.S.\$. . | 1950 = 100 | DM 100 = Sfrs . . . ⁴⁾ | 1950 = 100 | DM 100 = Sfrs . . . | 1950 = 100 | |
| 1950 | 23.81 | 100.0 | 104.11 | 100.0 | 80.83 ⁵⁾ | 100.0 | 100.0 |
| 1951 | 23.81 | 100.0 | 104.11 | 100.0 | 84.11 | 104.1 | 127.7 |
| 1952 | 23.81 | 100.0 | 104.11 | 100.0 | 91.73 | 113.5 | 112.0 |
| 1953 | 23.81 | 100.0 | 104.18 | 100.1 | 96.13 | 118.9 | 102.7 |
| 1954 | 23.81 | 100.0 | 104.14 | 100.0 | 100.66 | 124.5 | 102.9 |
| 1955 | 23.75 | 99.7 | 104.17 | 100.1 | 100.90 | 124.8 | 103.2 |
| 1956 | 23.79 | 99.9 | 104.43 | 100.3 | 101.30 | 125.3 | 107.1 |
| 1957 | 23.80 | 100.0 | 104.33 | 100.2 | 101.31 | 125.3 | 105.7 |
| 1958 | 23.86 | 100.2 | 104.41 | 100.3 | 102.06 | 126.3 | 100.1 |
| 1959 | 23.93 | 100.5 | 103.39 | 99.3 | 103.33 | 127.8 | 97.6 |
| 1960 | 23.98 | 100.7 | 103.56 | 99.5 | 103.49 | 128.0 | 98.3 |
| 1961 | 24.86 ⁶⁾ | 104.4 | 107.37 ⁶⁾ | 103.1 | 107.43 ⁶⁾ | 132.9 | 94.6 |
| 1962 | 25.01 | 105.1 | 108.15 | 103.9 | 108.08 | 133.7 | 93.7 |
| 1963 | 25.09 | 105.4 | 108.40 | 104.1 | 108.34 | 134.0 | 95.9 |
| 1964 | 25.16 | 105.7 | 108.65 | 104.4 | 108.62 | 134.4 | 97.9 |
| Percentage change on an annual average ⁷⁾ (+ = improvement in the external value of the DM) | | | | | | | |
| 1950 — 1955 | | — 0.1 | | + 0.0 | | + 4.5 | — 0.6 ⁸⁾ |
| 1955 — 1960 | | + 0.2 | | — 0.1 | | + 0.5 | + 1.0 ⁸⁾ |
| 1960 — 1964 | | + 1.2 | | + 1.2 | | + 1.2 | + 0.1 ⁸⁾ |
| 1950 — 1964 | | + 0.4 | | + 0.3 | | + 2.1 | + 0.2 ⁸⁾ |

¹⁾ Since 1953 calculated from the official foreign exchange mean rates quoted on the Frankfurt Bourse (previously from the Bank deutscher Länder's foreign exchange conversion rates). — ²⁾ For DM bank notes in unofficial dealings. — ³⁾ 1950 to 1957 index on original basis 1950 = 100, 1958 to 1964 re-calculated from original basis 1958 = 100. — ⁴⁾ Until 24 December 1958 rates for Swiss francs as laid down by agreement. — ⁵⁾ Lowest rate in 1950 = 73.50 (2 January). Highest rate in 1950 = 85.00 (12 April). — ⁶⁾ Revaluation of the DM by 5 per cent with effect from 6 March 1961. — ⁷⁾ Calculated as geometric mean. — ⁸⁾ Calculated from the reciprocal value of price changes.

principal world markets, in 1964 the prices of imported goods (calculated in U.S. dollars) were only slightly higher (by 3 per cent) than in 1950 while as a result of the DM revaluation foreign currencies were purchased 5 per cent cheaper than at that time. Even if the Deutsche Mark had not been revaluated, however, in 1964 it would have been possible to buy almost the same quantity of imports for one Deutsche Mark as fourteen years before.

(7) As regards the statement that the external value of the Deutsche Mark has increased and consolidated over the past one-and-a-half decades, it may of course be argued that the *foreign currencies*, by which the value of the Deutsche Mark is here being measured, themselves have lost some of their internal value during the same time. In point of fact, domestic prices have risen in almost all countries over this period. This is however of major direct importance for the use of the Deutsche Mark in external payments only in one field, *viz.*, travel abroad. Otherwise, as regards the

external value of the currency, only the movement in prices of imported goods is of importance; as shown by the above-mentioned price index for goods imported into the Federal Republic of Germany, prices for such goods have risen by no more than 3 per cent altogether during the past fourteen years.

III. Changes in the internal value of the Deutsche Mark since 1950

(8) It has already been pointed out (see items 2 and 3) that measuring the internal value of money by the movement of prices within the country in reality represents a simplification which is open to argument in many respects. *Measuring of the price movement* itself raises hardly lesser problems. In its publications the Federal Statistical Office, which establishes the indices current in the Federal Republic of Germany, has of its own accord emphasised these difficulties.

"When examining changes in the value of money, the first question is to the effect what price changes shall in fact serve as a yardstick for measuring 'the' value of money in an economic system. Prices in the wider sense of the term arise on the turnover of goods and services including material assets, on sales of financial paper (security prices, foreign exchange rates, and the like) and on the use of factor performances, *i. e.* performances of labour, capital and entrepreneurs (wage rates, interest rates and the price component in profits). Should the amount of money by means of which this total turnover is effected in an economic system within a specified period, and the prices achieved thereby, be taken as basis when examining 'the' value of money? ... In general, interest is directed rather to more narrowly defined price indices which measure the movement in the purchasing power of a specified amount of money in the hands of a specified group of holders or purchasers for a specified purpose. Among the most important in this connection are those price indices which permit to assess the purchasing power of 'the' incomes or of the incomes of specified groups of the population. Observation is in most cases limited to the purchases of goods for private consumption"¹⁾.

The question as to whether the movement in prices of goods for private consumption shall in the first place be taken as a yardstick when tackling the problem of measuring the value of money will be discussed in greater detail further below. At this point it should be noted that all originally ascertained price indices are limited to a clearly defined group of goods on a specified stage of the economic circulation process.

(9) In principle all original price indices in the Federal Republic of Germany are established by ascertaining the movement in prices of the *same* goods and services and including these prices in the computation of the index with the "weight" attached to these goods and services — measured by the extent of production or consumption — in the *basis year* of the computation. If the composition of the range of goods

¹⁾ Translated from: "Die Arbeiten des Statistischen Bundesamtes", 1962/63, p. 51.

changes because in the course of time certain goods gain in importance or come to the market for the first time while the importance of other goods declines, this cannot be taken into account when computing the index until the basis of computation is altered. Transitions to a more recent basis are only practicable at intervals of several years, however. There is a tendency in the direction of shortening to four years this time-lag, which formerly had in most cases been eight years for the more significant price indices; one of the indices, that for retail prices, is still being computed on the basis of the 1950 pattern of goods and prices. For reasons which will be explained in detail below with regard to the cost-of-living index, indices with a constant weighting pattern tend the more to exaggerate price rises the longer the weighting pattern is maintained, although the extent of this purely statistical influence on the course of the indices cannot be stated accurately.

(10) All significant price indices for Germany show a *rising tendency* for the years 1950 to 1964 (cf. Table 2). The extent of the increase greatly differed for the individual indices, however; in addition, the trend was subject to appreciable fluctuations over that period. On the average of these fourteen years, the retail price index rose least, by 1.6 per cent per year²⁾. The index of industrial producers' prices mounted only slightly more, *viz.*, by 1.7 per cent per year. During the same period the cost-of-living index went up by 2.1 per cent annually, the index of producers' prices of agricultural produce by 2.6 per cent, and the price index for housebuilding by 5.2 per cent. A striking feature is the deviation of the retail price index from the cost-of-living index. The difference is due to the fact that the latter index also contains the prices of goods and services not supplied to the consumer by retail trade. This applies, *i. a.*, to sales by butchers and bakers, whose businesses are statistically not counted among retail traders but among craftsmen; to services, housing accommodation, the supply of gas and electric current, *etc.* In principle the retail price index thus only covers one section of consumer prices; for this reason it is not discussed here. Nor are the other price indices covering still narrower sections, which the Federal Statistical Office currently computes, dealt with in this report. A complete list of the official price indices, numbering 25, is given in Appendix 1.

(11) As indicated, the *movement in prices* was by no means steady during the past fifteen years. As Table 2

²⁾ All average growth rates were calculated as "geometrical mean".

Table 2: Movement of Domestic Prices
1950 = 100

| Period | Cost-of living index (consumers in medium income group) | Index of retail prices | Index of producers' prices of industrial products in home-market sales | Index of producers' prices of agricultural produce ¹⁾ 1950/51 = 100 | Price index for house-building |
|--|---|------------------------|--|--|--------------------------------|
| 1949 | 106.7 | 111 | 102.8 | 107.6 | 104.7 |
| 1950 | 100.0 | 100 | 100.0 | 100.0 | 100.0 |
| 1951 | 107.8 | 109 | 118.7 | 115.6 | 115.6 |
| 1952 | 110.0 | 109 | 121.4 | 113.4 | 123.3 |
| 1953 | 108.1 | 104 | 118.3 | 111.8 | 119.1 |
| 1954 | 108.2 | 104 | 116.4 | 116.2 | 119.7 |
| 1955 | 110.0 | 105 | 118.4 | 122.8 | 126.2 |
| 1956 | 112.9 | 106 | 120.2 | 127.6 | 129.6 |
| 1957 | 115.2 | 109 | 122.3 | 129.2 | 134.2 |
| 1958 | 117.7 | 111 | 121.8 | 130.2 | 138.3 |
| 1959 | 118.8 | 112 | 120.9 | 133.5 | 145.6 |
| 1960 | 120.5 | 113 | 122.3 | 127.3 | 156.6 |
| 1961 | 123.2 | 115 | 123.9 | 132.5 | 168.5 |
| 1962 | 126.9 | 119 | 125.3 | 134.7 | 183.1 |
| 1963 | 130.7 | 122 | 125.9 | 138.3 | 194.0 |
| 1964 | 133.8 | 124 | 127.3 | 143.0 ²⁾ | 204.4 |
| Percentage change on an annual average ³⁾ | | | | | |
| 1950 — 1955 | + 1.9 | + 1.0 | + 3.4 | + 4.2 | + 4.8 |
| 1955 — 1960 | + 1.8 | + 1.5 | + 0.7 | + 0.7 | + 4.4 |
| 1960 — 1964 | + 2.7 | + 2.4 | + 1.0 | + 3.0 | + 6.9 |
| 1950 — 1964 | + 2.1 | + 1.6 | + 1.7 | + 2.6 | + 5.2 |
| 1953 — 1964 | + 2.0 | + 1.6 | + 0.7 | + 2.3 | + 5.0 |

¹⁾ Annual figures relate to farm years; e. g., the figure for 1949 means the average of the monthly figures for July 1949 to June 1950. — ²⁾ Simple arithmetical mean from the monthly figures for July 1964 to May 1965. — ³⁾ Calculated as geometric mean.

shows in detail, price indices registered the greatest rise in 1951. In that year prices in the Federal Republic of Germany soared, chiefly as a result of the spate of purchases within the country and on world markets connected with the Korean War. Moreover, a considerable part was played in that year and in the immediately following years by the lifting of governmental price control for foodstuffs (bread and bakery products, etc.) and the — at least partial — adjustment of official rates charged in transport and public utilities to the price and cost level of the years following the monetary reform. For these reasons prices in 1951 were much higher than in 1950. Since in 1949, too, they had considerably exceeded the 1950 level, the price level for 1950 represents an extremely low figure in the movement of prices after World War II. If the analysis of the longer-term price trend in the post-war period were begun somewhat later, e. g. in 1953 — when on the one hand official price control was already extensively reduced while on the other hand the partly exaggerated price level during the Korean crisis had ebbed away somewhat — lower rates of increase would result, on an annual average, for most

price indices. For the years 1953 to 1964 these rates amount to 0.7 per cent for producers' prices of industrial products, 2.0 per cent for the cost-of-living index, 2.3 per cent for producers' prices of farm produce, and 5.0 per cent for the price index for house-building.

(12) The differences in the rates of increase for the individual indices discussed above indicate how much depends, in assessing the change in the value of money, on selecting that price index which comes closest to the use of the sums whose "purchasing power" is to be judged. Because of these great differences the question arises again and again whether it might not be possible to establish a *comprehensive index* representing the overall price movement. It has already been mentioned that no original index of this kind exists; however, computation of the national product permits an index to be derived which reflects the price movement for all products and services consumed or invested within the country¹⁾. For the years 1950 to 1964 this "price index for all goods and services used within the country" shows an average annual increase of 2.8 per cent, and for the years 1953 to 1964 one of 2.4 per cent (cf. Appendix 2, column 2). Quite apart from the fact that this derived index is to some extent based on estimates, and therefore less exact than the original indices, its suitability for measuring the value of money is quite problematic for other reasons as well. For one thing, in line with the principle of computing the national product, this index comprises not only a subindex for private consumption and one each for building and equipment investments, but also a "price index for consumption of government performances" (government consumption). As there are no prices for government performances, this price index must be established on the basis of such prices as the government on its part has to pay when purchasing the goods and services required for providing government performances (internal and external security, legal protection, education, etc.). In addition to the prices for administrative expenditure on material, this covers in particular wages and salaries for the persons in the public service. As a result of the inclusion of a pure income element — which is bound to increase at a greater rate than prices of goods — the price index for government consumption shows a much more marked rise (4.3 per cent per year computed from 1950 onwards) than the indices for most

¹⁾ This index is a subindex of the "price index of the national product", measuring the increase or decrease in the price of the overall domestic product. Cf. H. Bartels, "Preisindizes in der Sozialproduktberechnung, *Wirtschaft und Statistik*", No. 1, 1963, page 15.

other applications of the national product¹). It is self-evident, however, that such a hypothetical price increase ought not to be included in any assessment of changes in the value of money as it does not — at least not directly — affect private individuals.

(13) The usefulness of the "price index for all goods and services used within the country" for measuring changes in the value of money is limited also by the fact, however, that the index is to a very great extent determined by the movement in the *prices of capital goods*, including building costs. There is no denying the fact that these prices can be of considerable importance for the individual entrepreneur or party giving a building order. For a saver whose saving serves the sole aim of financing some time the acquisition of a capital goods item (a house or some other such item), such a price index may in fact better meet the subjective conception of the change in the value of money than any other price index. From the overall economic view, however, capital goods in the last analysis are only "pre-products" which turn into consumer goods within a shorter or longer period, according to wear and tear resulting from the production process. For the purpose of measuring the value of money, the price trend for capital goods is of interest, in the last analysis, only inasmuch as it affects the prices of consumer goods entered in the cost-of-living index; these include the "price" for the use of residential buildings (rent). There is, therefore, much to suggest that any general statement on the price movement, if deemed justifiable at all, should be confined to the prices of private consumption. The resulting figures are almost the same, no matter whether the basis taken is the rather more comprehensive price index for private consumption (contained in the computation of the national product) or the cost-of-living index.

(14) The various more comprehensive *producers' price indices*, important though they are for judging the price movement in these special fields, afford still less information for assessing changes in the value of money than do the price indices for capital goods and building work. The indices of producers' prices always represent indices recording the prices at all production stages of a specified branch of economic activity, not merely at the final stage, where the products leave industry or farming. The producers' price index for industrial products comprises both the prices

of raw materials and semi-finished goods and those of finished goods produced from these raw materials and semi-finished goods. Similarly, agricultural producers' prices contain the prices of primary products (*viz.*, feedingstuffs) as well as prices of end-products (foodstuffs of vegetable and animal origin). These price indices thus reflect the average change in the prices of all products and in particular show the change in proceeds per production unit; they also permit assessment of the relation of this change in prices to the change in production costs. Producers' price indices do not, however, permit any conclusion to be drawn as to the extent to which these price changes have caused changes in the purchasing power of ultimate buyers of these products, since these products are chiefly purchased by enterprises which process or resell them. At any rate there can be no question of any change in the *value of money from the viewpoint of enterprises* if the costs of pre-products bought by enterprises alter; such a change occurs only if those prices alter which are an important factor for the appropriation of entrepreneurs' incomes (for consumption or wealth formation), and these in large part likewise are prices of goods for private consumption.

(15) As mentioned above, the index used most frequently for measuring the movement of prices in the field of private consumption is the *cost-of-living index*, although this index is computed only for a specified group of households, *viz.*, for an employed person's four-member household (including two children) with one earner and a specified medium income (1962: consumer expenditure of DM 750 per month). Strictly speaking, this index applies only to this type of household; if beyond that it is considered to be representative of the price movement for all households, even more attention must be paid to the limitations of its informative value than is necessary if consideration is confined to the above-mentioned type of household. The Bundesbank has dealt with this problem in detail some years ago, so that the reader may wish to refer to that article for particulars¹). Although for the past few years this index has in the meantime been put on a basis closer to the present time (1962) and a number of important products have been newly included, in principle the objections raised in the article mentioned still hold good.

From previous (and in part still continued) computations of the Federal Statistical Office it is known

¹) Strictly speaking, not the entire increase in wages and salaries of persons in the public service is entered in the computations, but only that part which exceeds the (hypothetical) growth of approximately 0.4 per cent per annum in productivity of the work performed by officials, employees, and workers.

¹) "Consumer Prices since the Currency Reform", Monthly Report of the Deutsche Bundesbank, Vol. 15, No. 12, December 1963, page 18 et seq.

that prices for households with a higher income did not rise quite so steeply on an average as prices for employed persons' households in the "medium" category. Comparable calculations are only available for the years 1950 to 1960, however. During this period the index for the "medium" consumer group rose by 23 per cent, whereas that for the "upper" group of consumers went up by 21 per cent only. Thus, the annual price increase during this period was smaller by 0.2 per cent for consumers in the "upper" income group than for those in the "medium" income group usually taken as basis for assessing the cost of living. On the other hand, the price index calculated for households with lower income has in the past always risen at a somewhat greater rate than that for the "medium-category" employed persons' households. From 1950 to 1964 it increased by altogether 40 per cent, compared with a 34 per cent rise in the index for the "medium-category" employed persons' households. Converted to annual averages the rise in the price index for "pensioners' households" amounted to 2.4 per cent in contrast to the above-mentioned 2.1 per cent for "medium-category" employed persons' households¹⁾ (cf. Table 3).

More detailed studies concerning the composition of households in the Federal Republic of Germany according to the number of family members and their total income indicate that most households are not attributable either to the "lower" or to the "medium" consumer group. The majority of employed persons' households either have fewer members than the "index family" in the "medium" consumer group, or else the family, although numbering four or more persons, frequently has more than one earning member, meaning that the income of the household is larger. At all events, in most employed persons' households the disposable per capita income is higher than for the "medium-category" employed persons' households²⁾. This means, however, that for the bulk of households the price movement for the above-mentioned "higher-income" consumer group is more typical, where prices have risen somewhat less, at least until 1960. The less marked price rise is due principally to the fact that in the case of an "upper" consumption pattern goods recording more than proportionate price

¹⁾ No account has been taken of the fact that the index for the "lower-category" consumer group has been changed to a typical pensioner's household (with two persons) only in the course of this period (in 1957); up to that year it was an index for a "lower-category" consumer group (four-member employed persons' households or pensioners' households with low incomes).

²⁾ Cf. our article on consumer prices since the currency reform, *loc. cit.*, page 19.

Table 3: Cost-of-Living Index
for Different Consumer Groups

1950 = 100

| Period | Linked-up indices | | Indices on original basis 1950 | |
|--|---|--|--|---|
| | Consumers in lower income group ¹⁾ | Consumers in medium income group ²⁾ | Consumers in medium income group ³⁾ | Consumers in upper income group ⁴⁾ |
| 1950 | 100 | 100 | 100 | 100 |
| 1951 | 108 | 107.8 | 107.8 | 108 |
| 1952 | 111 | 110.0 | 110.0 | 110 |
| 1953 | 110 | 108.1 | 108.1 | 107 |
| 1954 | 111 | 108.2 | 108.2 | 107 |
| 1955 | 113 | 110.0 | 110.0 | 109 |
| 1956 | 116 | 112.9 | 112.9 | 111 |
| 1957 | 119 | 115.2 | 115.5 | 114 |
| 1958 | 121 | 117.7 | 119.0 | 117 |
| 1959 | 123 | 118.8 | 120.7 | 119 |
| 1960 | 124 | 120.5 | 123.0 | 121 |
| 1961 | 128 | 123.2 | . | . |
| 1962 | 132 | 126.9 | . | . |
| 1963 | 137 | 130.7 | . | . |
| 1964 | 140 | 133.8 | . | . |
| Percentage change on an annual average ⁵⁾ | | | | |
| 1950 — 1955 | + 2.5 | + 1.9 | + 1.9 | + 1.7 |
| 1955 — 1960 | + 2.0 | + 1.8 | + 2.3 | + 2.1 |
| 1960 — 1964 | + 3.1 | + 2.7 | . | . |
| 1950 — 1964 | + 2.4 | + 2.1 | . | . |
| 1950 — 1960 | . | . | + 2.1 | + 1.9 |

¹⁾ Two-member households of persons receiving social insurance pensions or relief payments with DM 310.— cost of living per month based on the consumer habits of 1962, between 1957 and 1960 with DM 260.— cost of living per month based on the consumer habits of 1958; for the preceding period four-member pensioners' or employed persons' households with DM 175.— cost of living per month based on the consumer habits of 1950. Although the linking-up of the index for the period 1950 to 1956 with that for the years 1957 to 1960 and 1961 to 1964 is not unobjectionable for considerations of method because of the different composition of the index household in the periods up to and as from 1957, it has been applied here because on comparison of the course of the index for the two-member household of pensioners or recipients of relief payments with the course of the index for consumers in the "medium" income group the same differences result that were typical of the course of the indices for consumers in the "lower" and "medium" income groups prior to 1957. — ²⁾ Four-member employed persons' households with DM 750.— cost of living per month based on the consumer habits of 1962; between 1957 and 1960 with DM 570.— cost of living per month based on the consumer habits of 1958; for the preceding period with DM 300.— cost of living per month based on the consumer habits of 1950. — ³⁾ Four-member employed persons' households with DM 300.— cost of living per month based on the consumer habits of 1950. — ⁴⁾ Four-member employed persons' households with DM 525.— cost of living per month based on the consumer habits of 1950. — ⁵⁾ Calculated as geometric mean.

rises (especially foodstuffs) played a smaller part than for households with a lower per capita income. (The different price trend for individual categories of goods is shown in Appendix 3.)

(16) The indicative value of the cost-of-living index is further impaired by the fact that, as the period since the basis year of the index computation becomes longer, the statistical deficiencies resulting from the *unchanged consumption pattern* gain in importance. The graph overleaf illustrates that the price index based on a constant consumption pattern, as applied in computing the official index, rises distinctly more than an index established on the basis of the

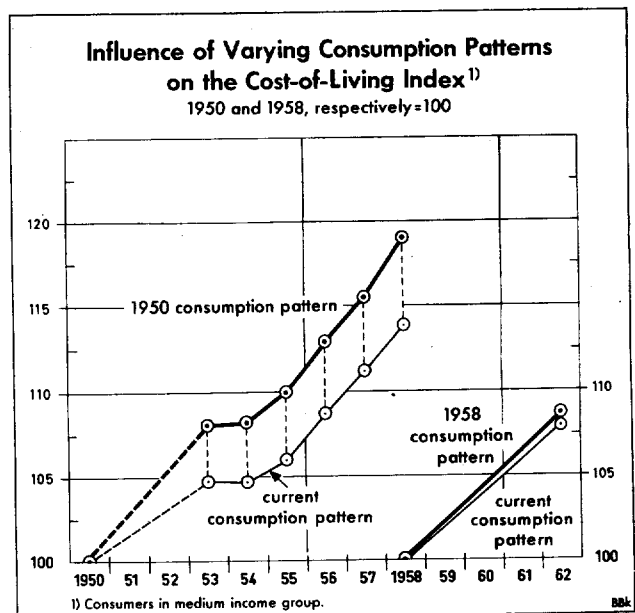
consumption pattern for each year. In the first few years after 1950 the differences were much more marked than later, however. For the period 1950 to 1958, at all events, the index based on the constant consumption pattern rose by *approximately 0.6 per cent per annum* more than the index computed according to current consumer habits. For the period 1958 to 1962 the difference in the rate of increase was only *0.2 per cent per annum*, it is true. The difference resulting from such deficiencies for the period which has elapsed since 1962 (when the index was last re-based), is indeterminable, but no doubt it has moved in the same direction as before. Transition to a new index pattern (first to basis 1958, and then to basis 1962) must have reduced the deficiencies resulting from the maintenance of a constant pattern of consumption, but it did not remove them. The continuous index series from 1950 to the present time naturally still contains the exaggeration of a price rise resulting from the fact that — at first from 1950 to 1956¹⁾, then from 1957 to 1960¹⁾, and finally since 1961¹⁾ — the consumption pattern which determines the weighting of the individual prices was kept constant.

(17) Both the selection of the type of household (item 15) and the temporary constancy of the consumption pattern (item 16) so far resulted in a certain exaggeration of the price rise. In addition it is very difficult statistically to make due allowance for *changes in quality* in the index. Frequently price increases as such are included in the index although they are in all or some cases connected with improvements in quality and accordingly ought to be revised by the extent of such improvement. Moreover, hardly any account is taken in the index of the fact that the quality of a product (especially of technical consumer goods) improves while the price of the product remains the same, although it is no longer the price of a product of the same quality. In the course of time some products of course in turn show deteriorations in quality which are not reflected in prices. Although endeavours are made in the official statistics to quantify any changes in quality as far as possible and thus to avoid showing a distorted picture of the price movement, it is generally felt that the cases of non-recorded improvements in quality exceed the number of non-recorded reductions in quality²⁾.

(18) It is impossible to state exactly the total of all "exaggerations" of the price rise that have been men-

¹⁾ The new consumption pattern was in each case taken as basis in the year preceding the new basis year.

²⁾ Cf. Horstmann and others, "Qualitätsänderungen und Preisindices, *Wirtschaft und Statistik*", Vol. 10, 1963, page 594.



tioned. The "Commission of experts reporting on the overall economic trend", who also discussed these questions, concludes as follows:

"By and large, on examining the cost-of-living index and the bases of its computation we arrived at the conclusion that there are no serious objections to its being accepted as a conventional yardstick for measuring the movement in the value of money in the Federal Republic of Germany. Were it possible to keep this index for a "medium" consumer group even approximately constant — with the weighting pattern being revised every three or four years — the objective of a stable price level, as laid down in the Law on the establishment of a commission of experts, might be considered to have been attained" (our spacing¹⁾).

As evident from the context, the restrictive clause "even approximately" refers primarily to the statistical exaggeration of the index, but no figures quantifying this are given. Other investigators have concerned themselves quite particularly with the problem of changes in quality. Thus, R. Ruggles, a well-known American statistician, points out that a consumer, faced in 1960 with the alternative of buying the range of goods typical for him either in 1950 quality and at 1950 prices, or in 1960 quality but also at the higher prices of that year, would probably prefer the latter. If this were indeed the case, it would, according to Ruggles, prove that greater importance was being attached to the value of improvements in quality than to higher prices²⁾.

(19) However, reservations regarding the instructive value of the cost-of-living index are justified especially when in the course of a reviewing period the share of

¹⁾ Experts' annual report 1964/65, "Stabiles Geld — Stetiges Wachstum", Stuttgart and Mainz, 1965, item 149, page 84.

²⁾ R. Ruggles, Price Stability and Economic Growth in the U.S.A., German translation published in "Konjunkturpolitik", Vol. 8, 1962, page 141.

goods and services which are offered at freely formed prices and not subject to any governmental regulation increases at the expense of prices regulated by government measures (including rationing). Under item 3 this problem has already been discussed in principle. The lifting of price control and rationing measures has played an important part in the course of the past 15 years. As a result, the rise in prices of goods and services still controlled in 1950 — chiefly foodstuffs, prices of public transportation and utility enterprises, housing rents, coal — was much greater than that in prices of industrial goods, which had been released as early as 1948/49 and then had found a new level, more or less approximately twice as high as before the war. Even prices for private service-rendering, where the cost situation is much more unfavourable than in the case of industrial goods, increased less in some cases. Table 4 shows that from 1950 to 1964 prices for the use of dwellings (rents and incidentals) rose by 66 per cent and prices charged for public transportation and by

the Postal Administration, as well as prices for heating and lighting (electric current, gas, coal), increased by an average of 62 per cent, while the rise in all other prices was 28 per cent during this period. If, moreover, prices of grain products are included among the products whose prices were still controlled in 1950 (although the prices for grain products were controlled only in part at the consumer stage while price control at all events existed on the preceding wholesale or producer stages), the increase in the other prices, which were decontrolled as early as 1950, amounts to only 23 per cent, or approximately 1.5 per cent per annum.

By this it is not meant to convey the impression that the above-mentioned prices, controlled as they were in 1950 (and in some cases also in 1964), would not have continued to increase had they been decontrolled as early as 1950. Possibly they would have increased more rapidly than the other prices even in these circumstances, although by no means as much as they actually did. It should moreover be borne in mind that the prices which were already free at the beginning of the reporting period might possibly have risen less had consumers been able to apply to the satisfaction of more selective demand a smaller part of incomes because of higher expenditure on basic needs (housing, heating, food). At all events, owing to the subsequent releases of prices, or adjustments of prices still controlled, the increase in the index contains elements which cannot be equated with a deterioration in the value of money. In actual fact the process of price decontrol has affected the course of the index to very different degrees in each of the years. The release or raising of prices for grain products occurred chiefly in the first years of the period here considered. The adjustment of official rates for transportation likewise played a part in these years. On the other hand, decontrol of rents (and the raising of rents not yet released from control) was effected mainly in the past five years. Classified by five-year periods (the period 1960 to 1964 comprising only four years), the overall effect is approximately as follows:

Table 4: Influence of State-Controlled Prices on the Cost-of-Living Index¹⁾

1950 = 100

| Period | Cost of living, total | Rent | Public transportation, postal charges, heating and lighting | Cost of living except rent | Cost of living except rent, public transportation, postal charges, heating and lighting | Cost of living except rent, public transportation, postal charges, heating and lighting, and grain products |
|--|-----------------------|-------|---|----------------------------|---|---|
| 1950 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1951 | 107.8 | 101.8 | 109.1 | 108.5 | 108.4 | 106.6 |
| 1952 | 110.0 | 103.7 | 117.2 | 110.8 | 110.2 | 108.1 |
| 1953 | 108.1 | 106.9 | 120.3 | 108.2 | 107.2 | 104.2 |
| 1954 | 108.2 | 107.1 | 125.2 | 108.4 | 106.9 | 103.8 |
| 1955 | 110.0 | 110.3 | 127.6 | 110.0 | 108.4 | 105.1 |
| 1956 | 112.9 | 117.4 | 128.9 | 112.4 | 110.9 | 107.7 |
| 1957 | 115.2 | 119.1 | 132.2 | 114.9 | 113.2 | 109.8 |
| 1958 | 117.7 | 121.1 | 141.5 | 117.4 | 115.2 | 111.2 |
| 1959 | 118.8 | 123.9 | 143.5 | 118.5 | 116.1 | 112.2 |
| 1960 | 120.5 | 131.6 | 145.5 | 119.5 | 117.1 | 113.1 |
| 1961 | 123.2 | 143.0 | 149.4 | 121.4 | 118.9 | 114.6 |
| 1962 | 126.9 | 147.7 | 151.8 | 125.0 | 122.6 | 118.0 |
| 1963 | 130.7 | 156.3 | 159.6 | 128.4 | 125.6 | 120.7 |
| 1964 | 133.8 | 166.0 | 161.9 | 130.8 | 128.0 | 123.0 |
| Percentage change on an annual average ²⁾ | | | | | | |
| 1950 — 1955 | + 1.9 | + 2.0 | + 5.0 | + 1.9 | + 1.6 | + 1.0 |
| 1955 — 1960 | + 1.8 | + 3.6 | + 2.7 | + 1.7 | + 1.6 | + 1.5 |
| 1960 — 1964 | + 2.7 | + 6.0 | + 2.7 | + 2.3 | + 2.2 | + 1.9 |
| 1950 — 1964 | + 2.1 | + 3.7 | + 3.5 | + 1.9 | + 1.8 | + 1.5 |

¹⁾ Consumers in medium income group. — ²⁾ Calculated as geometric mean.

Change on an annual average in per cent

| | Cost of living total | Cost of living except rent, public transportation, postal services, heating, lighting, grain products |
|--------------|----------------------|---|
| 1950 to 1955 | + 1.9 | + 1.0 |
| 1955 to 1960 | + 1.8 | + 1.5 |
| 1960 to 1964 | + 2.7 | + 1.9 |

For the first five-year period, cost of living excluding government-influenced prices (on the above definition) shows an annual rate of price increase by 1.0 per cent. In the second five-year period the rate of price increase for goods with free price formation is 1.5 per cent, and for the years from 1960 to 1964 1.9 per cent.

(20) All the above reservations to be made regarding the informative value of the cost-of-living index indicate that it is illusory to believe the change in consumer prices could be measured accurately by the index in a way suitable for all consumers over a protracted period. In general, it should not be considered a reduction in the value of money if the cost-of-living index for the "medium" consumer group rises by, say, 1 per cent per annum; and an annual increase of between 1 and 2 per cent in the index can be regarded as indicating a deterioration in the value of money only with certain reservations. Beyond these limits however — which at present have been exceeded, seeing that the cost-of-living index for the "medium" consumer group runs 3.1 per cent above the corresponding level of the previous year — the purchasing power of money at the consumer stage has clearly declined. Even such a reduction in the purchasing power should of course be judged differently, depending upon whether it is a short-term phenomenon due to cyclical or exogenous factors (e. g. a bad harvest) or a long-term trend.

(21) So far the question has been disregarded as to whether it is possible to make a valid statement on price rises and an ensuing decline in the value of money without at the same time taking into consideration the movement in incomes. It is an established fact that movements in prices and incomes are closely interdependent in that not only is the rise in monetary incomes curtailed in real terms in the event of price increases, but the trend of incomes for its part may exercise a marked autonomous influence on prices. A more detailed discussion of these interrelations would no doubt exceed the scope of this treatise, although it may not be amiss to refer in passing to some facts of significance in this context.

If hourly wages of industrial workers in 1950 are put at 100, they have risen to 300 by 1964; in other words, they have increased threefold. Growth in the other individual incomes as a rule did not differ considerably from this trend. This admittedly relates only to the increase in nominal incomes, which, although it was one of the factors that caused the "price level" not to remain fully "stable" in the period under review, as mentioned above, was not by a long way

absorbed by the price increase; indeed, it was accompanied by a vigorous soaring of the real income of the mass of the people (and also, of course, the entrepreneurs). Naturally enough, computation of the movement in the real value of earnings over a longer period is just as problematic from the statistical angle as is measuring the movement in the value of money, in that it is feasible only by applying one of the generally used price indices. On the assumption that the relevant price movement is correctly reflected in the cost-of-living index (a hypothesis which is justifiable only within the limits described above), the real value of gross hourly earnings of industrial labour rose from 100 in the year 1950 to 224 in the year 1964.

The marked expansion in the nominal income of the mass of the people was accompanied, however, by an increase in the possibilities of forming monetary savings, especially since savers — at least during their active working life — are largely identical with the recipients of this nominal income. As will be seen from the following table, the disproportionately large increase of saving as compared with income in the Federal Republic of Germany shows that the greater ability to save concomitant with the movement in both nominal and real incomes has on the average indeed been applied to stepping up saving.

Reference to the importance of increased monetary income for savings formation does not, of course, mean that "reduction in the value of money" and income-induced additional saving could, as it were, be "offset" against each other in the individual case. It does show,

Table 5: Income¹⁾, Consumption and Saving of Households

| Year | Disposable income | Saving | Saving ratio 2 in p.c. of 1 |
|------|-------------------|--------|--------------------------------|
| | 1 | 2 | 3 |
| | in billions of DM | | |
| 1950 | 65.5 | 2.1 | 3.2 |
| 1951 | 76.1 | 2.4 | 3.1 |
| 1952 | 86.2 | 4.4 | 5.1 |
| 1953 | 95.1 | 5.5 | 5.8 |
| 1954 | 101.9 | 6.7 | 6.6 |
| 1955 | 113.2 | 7.0 | 6.2 |
| 1956 | 124.7 | 7.0 | 5.6 |
| 1957 | 139.3 | 11.1 | 8.0 |
| 1958 | 150.4 | 12.7 | 8.4 |
| 1959 | 160.6 | 14.1 | 8.8 |
| 1960 | 185.4 | 15.4 | 8.3 |
| 1961 | 204.1 | 17.4 | 8.5 |
| 1962 | 223.0 | 19.0 | 8.5 |
| 1963 | 238.0 | 22.8 | 9.6 |
| 1964 | 260.6 | 28.2 | 10.8 |

¹⁾ Income of households contains not only income from wages and salaries, but also self-employed persons' withdrawals and income of pensioners. Undoubtedly all these categories of income were contributing to the increase in savings formation, though in varying degrees.

however, that the two quantities are interrelated. Had the price level remained entirely stable (which could have been expected only assuming that nominal incomes did not rise any more than the *real* national product), allowing for the same saving ratio of households as was actually recorded (cf. table above), the overall savings formation of households in the years since 1950, in nominal terms, would have been smaller by approximately one quarter than it actually was. For practical purposes this means that the *aggregate of all private monetary savings* hardly suffered any real loss in value in spite of the price rises, since according to this — by no means unrealistic — assumption actual saving rose more by approximately as much as corresponded to the rise in the level of consumer prices. It is impossible to tell, of course, whether in the event of the price level being completely stable the saving ratio of households would really have remained the same instead of increasing. There is much to suggest, however, that it would hardly have been greater, especially as the propensity to save has in the past years continuously grown more rapidly than incomes despite the price rises, and today, at about 11 per cent of private disposable incomes, has attained quite a substantial value compared with the situation in other countries. Incidentally, the substantial increase in households' saving over the past one-and-a-half decades has contributed significantly towards re-structuring wealth formation, in that the share of households (excluding capital transfers) in the annual overall wealth formation rose from 17 per cent in 1950 to 39 per cent in 1964 whereas the share of enterprises' saving (*i.e.*, "undistributed profits") declined from 39 per cent to 20 per cent of overall saving.

IV. Prospective trend of prices

(22) When answering the question as to the *further movement in the value of money*, and hence chiefly as to the further price movement, one may feel tempted simply to project the trend of the past fourteen years, attaching special significance to the most recent years when price rises were more pronounced than before. This is not really justifiable, however, if it is a matter of assessing the longer-term prospects of price movements, at least not if the movement over the past ten or perhaps fifteen years is considered not in isolation, but in the historical context.

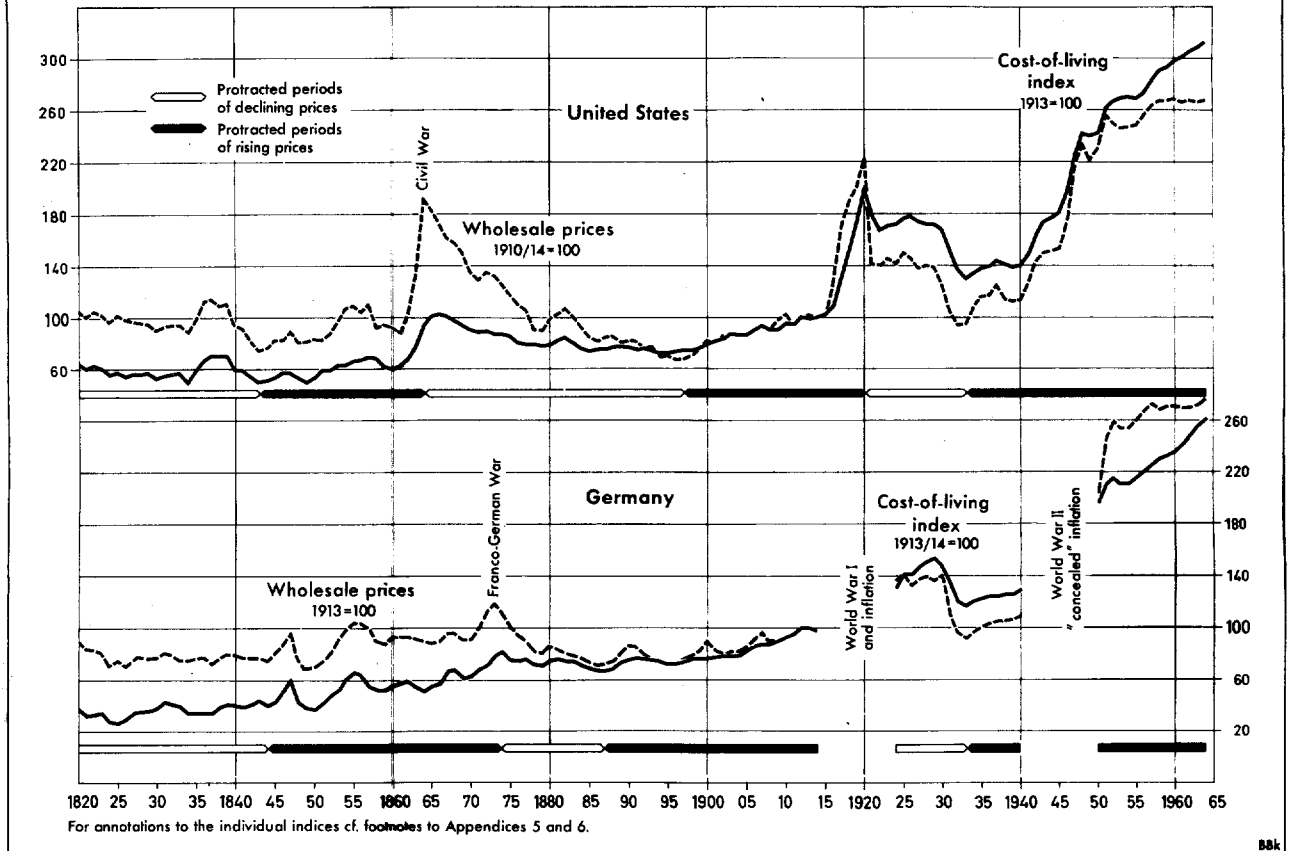
(23) In fact, economic history proves prices to have been extremely elastic. Quite apart from such shorter-term fluctuations as were connected with the various economic cycles, more or less *extended undulations in*

the price movement are recorded over protracted periods. The following graph, as well as Appendices 5 and 6, show the wholesale price index and the cost-of-living index for the United States of America and for Germany as from 1820, *i.e.* after the end of the Napoleonic Wars and the first reduction of the exaggerated price level it entailed, until the present time. The long-term trend in wholesale prices in the U.S.A. and in Germany (the situation being similar for England¹⁾) is characterised by the fact that prices, following a peak level at the end of the Napoleonic Wars 1814/15, reached a new peak, in the case of the United States during the American Civil War (1864) and in Germany after the Franco-German War (1873). Another peak level was attained during or after World War I, as the case may be. Immediately before — 1913/14 — the price level in both countries was approximately the same as not quite 100 years earlier (1820). In each case there was a protracted period of falling and then slowly rising prices between the record levels. Wholesale prices in the United States and in Germany had fallen to their first low point around 1843/44, *i.e.*, about 30 years after the preceding maximum. The low was followed by a period of rising prices, lasting for over 20 years in the U.S.A. and not quite 30 years in Germany (with marked fluctuations within this period). Subsequently the price trend moved downward again for some considerable time (over 30 years in the U.S.A., about 15 years in Germany); it was succeeded by another period with prices tending upwards, the peak being attained in the first years after World War I (or, in Germany, in the "big" inflation). The subsequent period of price declines was shorter than previously. In the U.S.A. it lasted for 13 years, and in Germany — where the price movement somewhat deviated from the international rhythm as a result of the "big" inflation — for ten years.

(24) No doubt the price indices on which the computations of wholesale prices are based are of much less informative value, however, than those for the period following World War II. As a rule they only refer to especially important agricultural and industrial raw materials; accordingly they are by no means representative of the movement in the overall price level in any country, although they certainly reflect the price tendency correctly. This is shown clearly by

¹⁾ A continuous wholesale price index for England as from 1782 is reprinted in: G. F. Warren and F. A. Pearson, *Wholesale Prices in the United States, 1797 to 1932*, New York, 1932, page 17.

Long-Term Movement of Prices in the United States and Germany



comparing these indices with *cost-of-living* indices. The results of these computations will be found in the above graph. They indicate that the trend of prices is the same for wholesale prices and the cost of living. Maximum and minimum figures for the latter show more or less in the same years as those for wholesale prices. For the year 1913 the American cost-of-living index records a level exceeding that for 1820 by about one half; in Germany this index rose substantially more over this period¹⁾. Since 1913, on the other hand, the cost-of-living index in Germany increased less than in the U.S.A. It rose at approximately the same rate as wholesale prices, whereas in the U.S.A. the price increase was more marked at the consumer stage than at the wholesale stage during this period.

(25) On a historical view, the fact that prices in the Federal Republic of Germany increased in the

¹⁾ It is not possible to make an authoritative statement as to the degree of statistical exactness attaching to this index. As data on prices for past decades are quite scanty, it is in part a matter of rough estimates.

course of the past fourteen years by no means justifies the assumption that the price rise will continue *ad infinitum*, although on the other hand it can hardly be supposed (nor indeed desired) that the world-wide raising of the price level caused by World War II and its repercussions will be cancelled by a depression, as in the thirties. At all events, in the light of experience nobody can claim, however, that a protracted period of price increases cannot be followed by one of stable or declining prices. A glance at developments in the United States during the past seven years suffices to show that even after World War II a price increase lasting for decades can manage to come to a standstill. Wholesale prices in that country remained stable from 1958 to 1964, and the cost of living during this period increased by approximately 1 per cent per annum, *i. e.* not more than is within the statistical margin of error from the angle of measuring the value of money. Matters were clearly different in Germany, but this was due not least to the deep-rooted variations in economic trends as between the two countries during this period, discussion of which would take us too far.

None of these divergencies is of such a nature, however, as to rule out the possibility that the Federal Republic of Germany might in the foreseeable future run into a similar situation which — as in the case of the U.S.A. — permits or enforces a considerable stability of prices.

(26) Economic developments in the United States and in the Federal Republic of Germany differed substantially during the past seven years inasmuch as until recently Germany had shown a surplus on the *balance of payments*, the United States in turn a deficit. Germany thus “imported” inflation, *i. e.* an excess of demand over supply and more liquidity than was good for national conditions; the reverse applied to the United States. Today, however, Germany also shows a balance-of-payments deficit. The possibility cannot be ruled out that this will continue for some considerable time, which would doubtless curb the rise in prices.

The two countries in these years also differed as regards developments in the *domestic economy*. In the United States, after the first post-war boom enterprises’ propensity to invest (measured by the proportion of the national product spent on investments) declined appreciably; the profit margin dropped substantially, and a growing portion of enterprises’ investments had to be financed by borrowing (there was no lack of outside funds, since saving by households increased as incomes rose). In Germany, on the other hand, enterprises’ propensity to invest was unimpaired during the entire period; if anything, it increased in the course of years. However, there is no mistaking the fact that, here too, investments were effected with profit margins narrowing and the proportion of borrowed funds mounting. It is quite obvious that this process may intensify if foreign competition increases (such an increase being proved by the balance-of-payments deficit) and if at the same time economic policy, and especially credit policy, continues to pursue a rather more restrictive course in the interests of monetary stability. It is by no means unlikely that in such circumstances enterprises’ propensity to invest will one day diminish.

Admittedly, in the United States there was during the last years of substantial price stability a relatively large unutilised *labour reserve*, the consequence being that wages rose only slightly more than overall productivity. In Germany, on the other hand, the labour market has since long been subject to extreme strain. Nevertheless, in the longer run a change would appear

to be possible here too — if some of the above-mentioned tendencies should come to prevail. The possibility cannot, therefore, be ruled out entirely that sooner or later economic developments in Germany will lead up to a situation as favourable for a stable value of money as that which has been characteristic for years, and in reality still is, of the United States.

(27) While thus there is no doubt a *chance* of full financial stability being re-attained in the Federal Republic of Germany, there is on the other hand nothing to guarantee that such a chance will be made use of, and no automatism whatsoever can make sure that developments will sooner or later move into the course referred to above as being possible. With economic policy placing more emphasis than before, among its aims, on guaranteeing jobs and adequate economic growth (both in Germany and in other countries), it is of course no easy task in addition to attain the target of full price stability in the same degree — at all events it is more difficult than in periods when these other aims of economic policy were not aspired at with equal consistency — indeed were not even clearly recognised in many cases. The Bank of Issue regrets this state of affairs inasmuch as on principle it needs must accord pride of place to securing the purchasing power of money. Nevertheless an attitude of resignation would be inopportune. Thirty-five years ago, during the major economic crisis, it was considered inconceivable in many quarters that those economies which at the time were regarded as being highly developed should be able to overcome once and for all the phase of underemployment existing at that time. Thinking was largely governed by the spectre of a “mature” economy deprived of all chances of further growth. In the meantime, in many countries real income has doubled or grown even more, and there can be no doubt that there exist further possibilities of growth even in the most highly developed countries. Today it might prove no less erroneous than that forecast to assume that the persistent slight price increase in recent years was a necessary and irremovable component of economic development. It is therefore impossible to make any statement as to the probable further movement in prices and in the value of money. What is possible, however, is to express the hope that in future it might prove feasible to learn to “live with full employment” and to avoid the price rises hitherto attending that state. The indispensable prerequisites for maintaining price stability are non-inflationary fiscal policy, re-

striction of claims made on the national product by the various social groups of the population (under certain circumstances through an institutionalised income policy), and intensification of international co-operation accompanied by a "hardening" of the international monetary order. Stability of the value of money must not, of course, be understood to mean a narrow price-index stability, but a stability in assess-

ing which due regard is given to all important relevant criteria.

* * *

This report provides answers only to the questions put by the Court. The pleas also raise important questions in the field of economic and monetary policy, which have not been dealt with in this paper.

List of Appendices*)

- Appendix 1: List of Official Price Indices*
- Appendix 2: Price Index of the National Product and Its Composition*
- Appendix 3: Cost-of-Living Index*
- Appendix 4: National Income and Overall Saving*
- Appendix 5: Long-Term Movement of Prices in the U.S.A.*
- Appendix 6: Long-Term Movement of Prices in Germany*

*) Twelve appendices were attached to the report. Of these appendices, four tables and two charts are here shown in connection with the text.

List of Official Price Indices

- | | |
|---|--|
| (1) Index of producers' prices of agricultural produce | (12) Price index of buildings for mixed use |
| (2) Index of producers' prices of forestry products | (13) Price index of road-construction |
| (3) Index of producers' prices of cut flowers and potted plants | (14) Index of wholesale prices |
| (4) Index of purchase prices of agricultural equipment | (15) Index of retail prices |
| (5) Index of producers' prices of industrial products sold on the home market, classified by groups of goods by industries, and by capital and consumer goods | (16) Index of sales prices of export goods |
| (6) Combined index of producers' prices of industrial products sold on the home market and abroad | (17) Index of purchase prices of foreign goods |
| (7) Price index of selected basic materials | (18) Index of average export values |
| (8) Price index of dwelling-houses | (19) Index of average import values |
| (9) Price index of office buildings | (20) Cost-of-living index for medium-income employed persons' households |
| (10) Price index of buildings for trade and industry | (21) Cost-of-living index for households of recipients of social security pensions and relief payments |
| (11) Price index of buildings for agricultural purposes | (22) Cost-of-living index (modest standard) for child |
| | (23) Cost-of-living index for consumers in upper income group (until 1960 only) |
| | (24) Index of marine freights |
| | (25) Price index of the national product |

Price Index of the National Product and Its Composition
1950 = 100¹⁾

| Period | Price index of gross national product overall | among which: | | | | |
|--|---|---|---------------------|------------------------|-----------------------|----------------------|
| | | Price index of all goods and services used within the country | Private consumption | Government consumption | Equipment investments | Building investments |
| 1950 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1951 | 110.0 | 110.2 | 107.7 | 112.3 | 116.0 | 115.7 |
| 1952 | 115.5 | 114.0 | 109.7 | 120.2 | 126.3 | 123.4 |
| 1953 | 115.2 | 112.8 | 108.2 | 123.0 | 123.8 | 119.2 |
| 1954 | 115.3 | 113.0 | 108.8 | 124.5 | 120.6 | 119.8 |
| 1955 | 117.6 | 115.5 | 110.6 | 129.1 | 121.8 | 126.2 |
| 1956 | 121.1 | 118.6 | 112.9 | 136.4 | 125.0 | 129.7 |
| 1957 | 124.6 | 121.8 | 115.8 | 140.7 | 128.5 | 134.3 |
| 1958 | 129.1 | 125.0 | 118.7 | 145.7 | 130.3 | 138.3 |
| 1959 | 130.9 | 126.4 | 119.9 | 146.8 | 129.1 | 144.8 |
| 1960 | 134.3 | 129.1 | 121.3 | 153.4 | 130.6 | 154.6 |
| 1961 | 140.0 | 134.0 | 124.7 | 161.6 | 133.8 | 165.5 |
| 1962 | 146.3 | 139.1 | 128.5 | 166.3 | 138.6 | 178.3 |
| 1963 ²⁾ | 150.5 | 142.9 | 131.8 | 171.5 | 139.0 | 187.8 |
| 1964 ²⁾ | 154.8 | 146.8 | 135.1 | 179.3 | 140.7 | 195.0 |
| Percentage change on an annual average ³⁾ | | | | | | |
| 1950 — 1955 | + 3.3 | + 2.9 | + 2.0 | + 5.2 | + 4.0 | + 4.8 |
| 1955 — 1960 | + 2.7 | + 2.3 | + 1.9 | + 3.5 | + 1.4 | + 4.1 |
| 1960 — 1964 | + 3.6 | + 3.3 | + 2.7 | + 4.0 | + 1.9 | + 6.0 |
| 1950 — 1964 | + 3.2 | + 2.8 | + 2.2 | + 4.3 | + 2.5 | + 4.9 |
| 1953 — 1964 | + 2.7 | + 2.4 | + 2.0 | + 3.5 | + 1.2 | + 4.6 |

¹⁾ Re-calculated from original basis 1954. — ²⁾ Calculated as geometric mean. — ³⁾ Provisional.

Cost-of-Living Index¹⁾

1950 = 100

| Period | Total cost of living | Food | Beverages and tobacco | Rent | Heating and lighting | Household equipment | Clothing | Cleaning and personal care | Education, entertainment and recreation | Transport and communications |
|--|----------------------|-------|-----------------------|-------|----------------------|---------------------|----------|----------------------------|---|------------------------------|
| 1950 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1951 | 107.8 | 109.2 | 98.0 | 101.8 | 108.2 | 110.4 | 110.9 | 108.0 | 108.3 | 112.1 |
| 1952 | 110.0 | 114.1 | 99.6 | 103.7 | 116.3 | 109.6 | 103.3 | 106.6 | 111.1 | 116.9 |
| 1953 | 108.1 | 112.3 | 93.3 | 106.9 | 120.2 | 104.0 | 97.9 | 103.8 | 109.8 | 118.0 |
| 1954 | 108.2 | 113.7 | 86.6 | 107.1 | 126.8 | 102.1 | 96.6 | 103.2 | 108.0 | 118.7 |
| 1955 | 110.0 | 115.8 | 85.8 | 110.3 | 129.7 | 102.9 | 96.6 | 106.0 | 110.3 | 119.4 |
| 1956 | 112.9 | 119.3 | 85.6 | 117.4 | 132.3 | 105.0 | 97.4 | 108.0 | 113.1 | 118.3 |
| 1957 | 115.2 | 121.3 | 85.5 | 119.1 | 135.6 | 109.0 | 101.1 | 109.7 | 116.8 | 119.3 |
| 1958 | 117.7 | 123.8 | 85.3 | 121.1 | 141.4 | 109.5 | 104.1 | 112.3 | 120.1 | 128.2 |
| 1959 | 118.8 | 126.0 | 84.4 | 123.9 | 142.6 | 108.1 | 103.8 | 113.4 | 122.0 | 130.3 |
| 1960 | 120.5 | 126.8 | 84.3 | 131.6 | 144.2 | 108.0 | 105.7 | 115.2 | 125.2 | 132.2 |
| 1961 | 123.2 | 128.1 | 84.3 | 143.0 | 146.6 | 110.2 | 108.1 | 118.3 | 129.7 | 135.9 |
| 1962 | 126.9 | 133.2 | 85.1 | 147.7 | 149.5 | 112.1 | 111.0 | 122.5 | 135.5 | 137.6 |
| 1963 | 130.7 | 137.5 | 86.0 | 156.3 | 153.4 | 112.6 | 113.5 | 125.5 | 140.5 | 143.2 |
| 1964 | 133.8 | 140.9 | 86.5 | 166.0 | 155.6 | 113.3 | 115.8 | 127.7 | 145.5 | 144.6 |
| Percentage change on an annual average ²⁾ | | | | | | | | | | |
| 1950—1955 | + 1.9 | + 3.0 | - 3.0 | + 2.0 | + 5.3 | + 0.6 | - 0.7 | + 1.2 | + 2.0 | + 3.6 |
| 1955—1960 | + 1.8 | + 1.8 | - 0.4 | + 3.6 | + 2.1 | + 1.0 | + 1.8 | + 1.7 | + 2.6 | + 2.1 |
| 1960—1964 | + 2.7 | + 2.7 | + 0.7 | + 6.0 | + 1.9 | + 1.2 | + 2.3 | + 2.6 | + 3.8 | + 2.3 |
| 1950—1964 | + 2.1 | + 2.5 | - 1.0 | + 3.7 | + 3.2 | + 0.9 | + 1.1 | + 1.8 | + 2.7 | + 2.7 |

¹⁾ Four-member employed persons' households with one earner in medium income group, with roughly DM 750.— cost of living per month based on the consumer habits of 1962 (between 1957 and 1960 with about DM 570.— cost of living per month based on the consumer habits of 1958, for the preceding period with about DM 300.— cost of living per month based on the consumer habits of 1950). — ²⁾ Calculated as geometric mean.

National Income and Overall Saving

| Period | Composition of national income | | | | | Breakdown of overall saving | | | | | | |
|--------------------|--------------------------------|--------------------------------------|---------------|---|---------------|---|------------------------------------|---------------|-------------------------------------|---------------|---------------------------------|---------------|
| | National income, total | of which: | | | | Total saving in overall economy ¹⁾ | among which: | | | | | |
| | | Gross income from wages and salaries | | Gross income from entrepreneurial activity and property | | | Saving ²⁾ by households | | Saving ²⁾ by enterprises | | Government saving ³⁾ | |
| | | DM bn | p.c. of total | DM bn | p.c. of total | | DM bn | p.c. of total | DM bn | p.c. of total | DM bn | p.c. of total |
| 1950 | 75.2 | 44.1 | 58.6 | 31.1 | 41.4 | 11.7 | 2.1 | 18.2 | 4.5 | 38.4 | 3.3 | 27.8 |
| 1951 | 91.1 | 53.4 | 58.7 | 37.7 | 41.3 | 16.9 | 2.4 | 14.1 | 7.1 | 42.1 | 6.1 | 36.1 |
| 1952 | 103.8 | 59.6 | 57.4 | 44.2 | 42.6 | 20.1 | 4.4 | 22.1 | 7.5 | 37.3 | 8.0 | 39.7 |
| 1953 | 112.1 | 65.8 | 58.7 | 46.3 | 41.3 | 21.6 | 5.5 | 25.7 | 5.4 | 24.9 | 10.6 | 49.3 |
| 1954 | 121.1 | 71.9 | 59.4 | 49.2 | 40.6 | 25.5 | 6.7 | 26.4 | 6.9 | 26.8 | 11.8 | 46.3 |
| 1955 | 139.5 | 82.0 | 58.8 | 57.5 | 41.2 | 33.6 | 7.0 | 21.0 | 12.7 | 37.7 | 14.0 | 41.6 |
| 1956 | 154.4 | 91.8 | 59.5 | 62.6 | 40.5 | 36.9 | 7.0 | 19.0 | 14.5 | 39.2 | 15.6 | 42.4 |
| 1957 | 168.3 | 100.5 | 59.7 | 67.8 | 40.3 | 39.3 | 11.1 | 28.3 | 13.9 | 35.4 | 14.8 | 37.7 |
| 1958 | 180.1 | 109.0 | 60.5 | 71.1 | 39.5 | 39.7 | 12.7 | 32.0 | 14.7 | 37.1 | 12.8 | 32.1 |
| 1959 | 194.0 | 116.8 | 60.2 | 74.2 | 39.8 | 44.5 | 14.1 | 31.7 | 15.5 | 34.7 | 16.1 | 36.2 |
| 1960 ³⁾ | 229.8 | 139.8 | 60.8 | 90.0 | 39.2 | 56.8 | 15.4 | 27.1 | 19.4 | 34.1 | 23.0 | 40.5 |
| 1961 | 251.6 | 157.2 | 62.5 | 94.4 | 37.5 | 58.0 | 17.4 | 29.9 | 16.6 | 28.5 | 26.5 | 45.7 |
| 1962 | 271.9 | 173.9 | 63.9 | 98.0 | 36.1 | 58.6 | 19.0 | 32.3 | 13.7 | 23.4 | 27.1 | 46.2 |
| 1963 ^{p)} | 288.0 | 186.6 | 64.8 | 101.4 | 35.2 | 59.8 | 22.8 | 38.2 | 11.9 | 19.8 | 25.8 | 43.2 |
| 1964 ^{p)} | 315.3 | 204.4 | 64.8 | 110.9 | 35.2 | 72.8 | 28.2 | 38.8 | 14.7 | 20.2 | 30.5 | 41.9 |

¹⁾ Including balance of capital transfers to and from other countries. — ²⁾ Before capital transfers. — ³⁾ Since 1960 including Saarland and Berlin (West). — ^{p)} Provisional.

Long-Term Movement of Prices in the U.S.A.

1820 to 1964

| Cost-of-living index ¹⁾ 1913 = 100 | | | Wholesale prices ²⁾ 1910 to 1914 = 100 | | |
|--|-----|--|--|-----|--|
| 1820 | 65 | | 1820 | 106 | |
| | 62 | | | 102 | |
| | 64 | | | 106 | |
| | 61 | | | 103 | |
| | 57 | | | 98 | |
| 1825 | 58 | | 1825 | 103 | |
| | 55 | | | 99 | |
| | 57 | | | 98 | |
| | 57 | | | 97 | |
| | 58 | | | 96 | |
| 1830 | 54 | | 1830 | 91 | |
| | 56 | | | 94 | |
| | 57 | | | 95 | |
| | 58 | | | 95 | |
| | 51 | | | 90 | |
| 1835 | 60 | | 1835 | 100 | |
| | 68 | | | 114 | |
| | 72 | | | 115 | |
| | 71 | | | 110 | |
| | 71 | | | 112 | |
| 1840 | 60 | | 1840 | 95 | |
| | 60 | | | 92 | |
| | 55 | | | 82 | |
| | 51 | | | 75 | |
| | 52 | | | 77 | |
| 1845 | 54 | | 1845 | 83 | |
| | 58 | | | 83 | |
| | 58 | | | 90 | |
| | 54 | | | 82 | |
| | 51 | | | 82 | |
| 1850 | 54 | | 1850 | 84 | |
| | 60 | | | 83 | |
| | 60 | | | 86 | |
| | 64 | | | 97 | |
| | 64 | | | 108 | |
| 1855 | 67 | | 1855 | 110 | |
| | 68 | | | 105 | |
| | 70 | | | 111 | |
| | 69 | | | 93 | |
| | 63 | | | 95 | |
| 1860 | 61 | | 1860 | 93 | |
| | 63 | | | 89 | |
| | 69 | | | 104 | |
| | 78 | | | 133 | |
| | 95 | | | 193 | |
| 1865 | 102 | | 1865 | 185 | |
| | 103 | | | 174 | |
| | 102 | | | 162 | |
| | 98 | | | 158 | |
| | 95 | | | 151 | |

¹⁾ 1820 to 1912: Cost-of-Living Index of the Federal Reserve Bank of New York; since 1913 Consumer Price Index (Bureau of Labor Statistics). —
²⁾ 1820 to 1889: Wholesale Prices in the United States (Warren and Pearson), since 1890 Wholesale Prices of all Commodities (Bureau of Labor Statistics).

Long-Term Movement of Prices in Germany

1820 to 1964

| Cost-of-living index ¹⁾ 1913/14 = 100 | | | Wholesale prices ²⁾ 1913 = 100 | | |
|---|----|--|--|-----|--|
| 1820 | 38 | | 1820 | 90 | |
| | 33 | | | 85 | |
| | 34 | | | 84 | |
| | 35 | | | 82 | |
| | 28 | | | 72 | |
| 1825 | 27 | | 1825 | 76 | |
| | 30 | | | 76 | |
| | 35 | | | 77 | |
| | 36 | | | 73 | |
| | 37 | | | 72 | |
| 1830 | 39 | | 1830 | 78 | |
| | 44 | | | 82 | |
| | 42 | | | 80 | |
| | 40 | | | 76 | |
| | 35 | | | 76 | |
| 1835 | 35 | | 1835 | 77 | |
| | 35 | | | 78 | |
| | 35 | | | 74 | |
| | 40 | | | 78 | |
| | 42 | | | 81 | |
| 1840 | 41 | | 1840 | 80 | |
| | 40 | | | 78 | |
| | 42 | | | 78 | |
| | 45 | | | 78 | |
| | 41 | | | 76 | |
| 1845 | 44 | | 1845 | 82 | |
| | 52 | | | 88 | |
| | 61 | | | 97 | |
| | 44 | | | 76 | |
| | 39 | | | 70 | |
| 1850 | 38 | | 1850 | 71 | |
| | 42 | | | 75 | |
| | 49 | | | 82 | |
| | 53 | | | 92 | |
| | 62 | | | 100 | |
| 1855 | 67 | | 1855 | 105 | |
| | 65 | | | 105 | |
| | 55 | | | 101 | |
| | 53 | | | 91 | |
| | 53 | | | 89 | |
| 1860 | 57 | | 1860 | 94 | |
| | 59 | | | 94 | |
| | 60 | | | 94 | |
| | 55 | | | 92 | |
| | 52 | | | 91 | |
| 1865 | 55 | | 1865 | 89 | |
| | 58 | | | 90 | |
| | 68 | | | 97 | |
| | 69 | | | 97 | |
| | 63 | | | 92 | |

¹⁾ 1820 to 1914: Kuczynski index (food and rent). 1924 to 1944: cost-of-living index of the Reich Statistical Office. 1948 to 1964: cost-of-living index of the Federal Statistical Office. — ²⁾ 1820 to 1913: Jacobs und Richter wholesale price index. 1924 to 1944: wholesale price index of the Reich Statistical Office. 1950 to 1964: price index of selected basic materials of the Federal Statistical Office.

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Unless otherwise indicated, the data given in this Report relate to the Federal area including Berlin (West). From January 1960 onwards the data for the Federal area include those for the Saarland.