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On the Economic Development in the Federal Republic of Germany in the 1980's
-Outline for two Scenarios-

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On the Economic Development in the Federal Republic of Germany in the 1980's

A. The objective

1. The challenge of making accurate short-term economic forecasts can only be inadequately met by concentrating the research on the analysis of short-term demand developments. In order to recognize turning points as well as to detect breaks in the trend, one has to also examine long-term developments. It is especially important to comprehend influences on the supply-side and their developments. However, it is also important to include the pattern of reaction of policy-makers and economic agents on cyclical and long-term phenomena.

2. The purpose of the analysis in scenario I, which incorporates the probable economic policy, cannot be to derive recommendations capable of preventing certain adverse developments. Rather, scenario I outlines a probable overall economic development, which can be an input for those who require an overall economic framework for individual economic planning.

3. The second scenario of economic development in the 1980's assumes an optimum behavior (from the authors' viewpoint) of economic policy and collective bargaining. With such a line of conduct, adverse developments can be avoided - though not in the short run.

4. It is not only because future priorities are unknown but also because there will be unexpected future shocks, that a scenario for the 1980's has not to be seen as a forecast in the usual sense, i.e. a development that has a considerable probability of being realized. Rather, scenarios are depicted which have shown up consistently to the authors from the economic and socio-political conditions in the beginning of this decade. They may be regarded as a framework set up to make the structure for future short-term forecasts a bit more secure. However, they should not be fixed as a framework, but

rather should be an impetus for a discussion of what may be considered basic relations.

5. The 1970's were a decade of disappointment over the performance of the economic development. The disappointment over the ineffectiveness of government and monetary intervention in micro- and macroeconomic directions was extensive and worldwide. The intellectual departure from interventionism in industrial structures and demand management was, however, not (yet) accompanied by an actual abstention from interventionism. Neo-conservatism in scientific and economic-political programmatic scope has become more and more fashionable. Within economic policy itself the new philosophy so far only plays a limited role.

6. Because of this, one scenario was developed on the basis of a worldwide (also through world economic summits) synchronous stop-and-go-policy. Specifically, monetary and fiscal policy in the 1980's will, according to this supposition, act on those economic and political aims which are at a given point in time violated mostly (price stability, full employment, growth rate, current account equilibrium). This means, that policy-makers will continue to not take into account existing side effects on other targets; thus, economic policy will cause marked cyclical fluctuations in the future, too.

7. A second scenario reflects the assumption that demand management in the 1980's will be pursued in a way that increasingly less produces or strengthens the cycle; i.e. neo-conservative convictions will be carried through more and more in monetary and fiscal policy, and finally in questions of economic organisation. Through such an economic policy, the private sector would have better foresight over future economic policy conditions.

B. Methodological remarks

8. "A trend is a trend is a trend
   But the question is, will it bend?
   Will it alter its course
   Through some unforeseen force
   And come to a premature end?"[1]

9. According to a thesis from Knut Borchardt, the demand for forecasts is then especially large when the actual development runs otherwise than was generally expected, i.e. when new knowledge and old expectations diverge[2]. It is true, however, that precisely in those times of the most intensive demand for forecasts, the conditions for adequate forecasts are relatively poor. For naturally, the forecaster cannot forgo the use of past experiences, i.e. making whatever relations ascertained the basis of his judgement[3].

10. If the circumstances which Borchardt describes as the cause for problems in forecasting mirror reality, there is a considerable need for forecasts now, above all for long-term forecasts of economic development. Clearly, however, a forecast of economic development to 1990 must be taken notice of with much reservation and a necessary distance. Precisely this should also hold true for this paper. For a coarse assessment, many detailed findings gained in the scope of the examination of the development of the economic structure in the Federal Republic of Germany[4] can only be used in part or not at all.

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[1] Limerick (A. C. Cairncross, Essays in Economic Management, London, 1971, p. 139).
[2] Cf. Knut Borchardt, Produktions- und Verwertungsbedingungen von Langfristprognosen in historischer Perspektive; Allgemeines Statistisches Archiv, 63. Band, 1979, Heft 1, p. 1-25, p. 8.
[3] Ibid
[4] Cf. Gerhard Fels, Klaus-Dieter Schmidt und Mitarbeiter, Die deutsche Wirtschaft im Strukturwandel, Kieler Studien, Nr. 166, Tübingen, 1966.

11. As in every forecast, the results are derived from specific economic and demographical hypotheses which have not been falsified as well as from certain application conditions. Examples for such hypotheses are the relationship between real wages and employment, the dependence of the labor force participation rates of women on the development of real wages, or the influence of the economic activity abroad and the real exchange rate on German exports. Indeed, the applied hypotheses are not always empirically well secured. Frequently, they are not examined under considerably variable conditions. If this qualification is not true, then the hypotheses often are of limited value, because considerable deviations between deduced results and actual results were allowed in testing the hypotheses. Only a few hypotheses fulfill those stringent criteria, which are commonly used in or should be used in regression analysis.

12. The hypotheses used are as a rule neither deterministic nor stochastic, but they only satisfy the requirements for a less strictly formulated methodological position of Popper's critical rationalism[1]. Deviations from the values postulated in the respective hypothesis are permitted, as long as "good reasons" for the appearance of the deviation can be cited. Of course, there exists the danger that ad-hoc explanations will be brought up. It was attempted not to succumb to this danger, but fully to keep to the principles of critical rationalism.

13. Nevertheless the outlined approach is exposed to the reproach of being "naive" or "unscientific"; there are comprehensive econometric models, which can be utilized

[1] Cf. Heinz Grohmann, Statistik im Dienste von Wirtschaftswissenschaft und Wirtschaftspolitik - Einige methodologische Betrachtungen zu ihren Zielen und Möglichkeiten, Allgemeines Statistisches Archiv, 60. Band, Heft 3/4 1976, S. 320-356.

for the purpose of medium-term forecasts[1]. To bear in mind, however, is that the evaluation chosen here may just lead to "good" forecasts. Forecasts on the basis of econometric models "can turn out to be an important help in decision making, presuming that all essential relations are included, and more, that no changes in behavior occur or are expected. If there are sharp changes, as it presently seems to be the case (November 1975), there are basically the same problems as with the "intuitive" methods. In such a situation, the forecaster, who makes use of these methods, even has an advantage over the econometrician, because he can more easily discard the impediment of obsolete structures."[2].

14. In a forecast of the economic development to 1990, almost all variables concerned are regarded as dependent on each other. Only the population trend to 1990 may be fixed; there may be some reservation even here, however, due to the migration into and out of the Federal Republic of Germany. The interdependence is reinforced in scenario I, because monetary and fiscal policy are seen as dependent on price and employment developments. Nevertheless, the approach chosen here consists in starting with some variables and their relations in the interdependent system and then analyzing the consequences for other variables of the system. Thereby, conceptions over other endogenous variables enter in, but it is possible that "implausible" relationships result from the individual building blocks of the forecast. In this case, revisions have to be made of the previously set dependencies between the single variables.

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[1] Cf. Jürgen Blazejczak, Berliner Version des Bonner Modells (Dokumentation), Deutsches Institut für Wirtschaftsforschung, Berlin, May 1979.

[2] Report of the German "Council of Economic Advisors", Bundestagsdrucksache 7/4326, November 24th, 1975, p. 110, translated by the authors.

The described procedure was repeated until inconsistencies were eliminated. While econometric multi-equation models take into account the interdependence of the variables by a simultaneous fixation of the coefficients, the approach chosen here can be characterized as an iterative procedure, which incorporates plausibility considerations in order to match the general interdependence.

15. If such a procedure is used, it makes sense to start with analyzing the relatively stable relations. Therefore, the population trend is predicted first of all, so that with the help of somewhat less stable relationships the labor force can be forecast; thereby, the participation rate is considered to be depending on the "net comparative advantage" of employment in comparison to leisure time. Thereafter, still less stable relations are used, in order to derive further results. After having finished a "run", multilateral relations are examined and if necessary, a revision is made. Thereby, those "basic" hypotheses, which could not be falsified despite of hard empirical tests were maintained in any case; the medium-term relation between money supply expansion and price level development is an example. The modifications necessary within an iterative procedure as a result of feedback effects are minimized in the approach described.

16. Since some three years the authors regularly developed a medium-term forecast on the economic development in the Federal Republic of Germany. It turned out, that the calculated lags between individual variables were often longer than were expected. Also, the cyclical fluctuations proved on the whole to be "drawn out." These experiences were taken into consideration in the article at hand. Nevertheless, the forecast findings are less meaningful for single calendar years than for the cyclical course of economic development in general.

C. Scenarios for economic policy

I. Basic conditions for the world economy[1]

17. In 1981, the recessionary forces continued to predominate in the industrial countries. Although there was a minor increase in production on a year-to-year basis, the level of capacity utilization decreased further. In all countries the number of unemployed went up considerably. The rate of inflation remained stubbornly high in spite of weak demand. The widespread expectation that the economies would recover swiftly after the last increase in oil prices has been disappointed; in fact there are growing signs that the recessionary tendencies could strengthen again.

The recession is persisting because central banks continued their restrictive policy in view of high wage and price increases, not taking care of the warnings about the dampening effects of such a restrictive stance on the level of aggregate demand. A more suitable monetary policy, oriented at the economy's productive potential and aiming at a gradual reduction of the rate of inflation in the face of wage and price inflexibility, would have reduced the costs of decelerating inflation in terms of foregone output. Such a strategy was clearly considered by the economic authorities in most countries to be not very promising. Policy makers appear rather to share the conviction, that in order to break inflationary expectations and to foster the necessary structural adjustments, harsh monetary restriction is necessary.

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[1] The outlook for 1982 is described in more detail in Adolf Ahnefeld, José Gutierrez-Camara, Joachim Streit und Norbert Walter, Beharrliche Rezession in den Industrieländern, Die Weltwirtschaft, 1981, Heft 2, p. 1-14.

Production in the industrial countries in the recent recession has not gone down as rapidly as in the middle of the seventies when a similarly large increase in the price of oil and a similarly sharp restrictive stance of monetary policies met with a worldwide boom. In the United States there was even an increase of production after the slump of early 1980. This factor, taken together with the high propensity to import of the OPEC countries, provided the main reasons for the favourable export performance of most Western European economies and Japan.

18. There are several signs indicating that this time the recession in the industrial countries will last longer than in the middle of the seventies:

- During the 1975 recession an expansionary monetary policy was quickly adopted; in most countries the money supply was accelerating since early 1975. At the same time an expansionary fiscal policy was carried out in order to stimulate demand. Consequently, production in the industrial countries by mid-1976 already reached its prerecession level. But on the other hand not only the necessary structural adjustments were postponed; moreover, the expansionary policies laid ground for a reacceleration of inflation in the years after.
- A fundamentally different picture characterizes the present downswing. True, there was an increase in the money supply from mid-1980 until early 1981; however, in spring 1981, most central banks tightened up their restrictive policy when the new U.S. government gave top priority to fighting inflation and the dollar strengthened drastically. Also, unlike in 1975, the possibility of further expanding the budget deficits does not appear to be a viable alternative to stimulating internal demand. On the whole, monetary and fiscal policy are still restrictive at the end of 1981.

This scenario gives reason to believe that in most industrial countries demand and production will once more go down during the winter 1981/82. This the more so, when one considers that the imports of the OPEC countries are bound to turn weaker when the oil revenues in these countries continue sinking. At this stage, private investment might be fully affected by the recession as a result of a further decline in the level of capacity utilization and also as a consequence of exceptionally low profits. If the firms were to maintain their level of investment they would have to borrow heavily, an event which appears unlikely when nominal interest rates decrease only hesitantly and firms are confronted with increased difficulties in raising their prices. The sluggishness in the downward movement of interest rates is to a great extent due to the widespread confusion concerning the cyclical and structural components of the budget deficit; therefore every increase in public sector borrowing requirements tends to be considered as a source of future inflation.

19. Unemployment further increased in all industrial countries in the course of 1981. In this respect, Great Britain has been with almost three million unemployed most severely affected. The labour market situation was not much better in Belgium, France and Denmark. In the United States the unemployment rate has again increased considerably in the autumn 1981. Given the production outlook unemployment rates in the industrial countries will reach record past-war levels.

The inflationary tendencies in most industrial countries during 1981 have lost relatively little momentum in spite of the fact that monetary policy has been restrictive for over two years. Only in Japan inflation faded quickly; in the United States it also appears to have passed its peak.

On the other hand, the Western European countries have even registered an acceleration in their prices, mainly brought about by an increase of import prices as a consequence of the strong dollar.
The expectation of a renewed drop in demand is bound to have its effect upon the rate of inflation, as competition in the markets can be expected to pick up in the face of a further reduction in the level of capacity utilization. A deceleration in inflation in Western Europe might also be supported by the recent fall of the dollar.

20. It is to be assumed that when inflation eases, the central banks will loosen up their restrictive policy. However, judging from the official pronouncement in most countries, a rapid turnaround - with a sharply increasing money supply - should not be expected. Considering the usual lags, demand will thus not pick up before the second half of 1982. Moreover, it is doubtful that the increase in production will be strong enough to raise the level of capacity utilization in 1982 already. The real gross national product of the industrial countries in 1982 will barely be higher than in the previous year. Under these circumstances world trade might stagnate at the 1981 level.

21. Two scenarios are distinguished for the economic policy in the second half of 1982 and thereafter. Scenario I comprises a worldwide synchronously pursued stop-and-go policy acting on those economic policy targets which at a given point in time have been missed most. Scenario II, on the other hand, imputes that neo-conservative tendencies will increasingly work their way into monetary and fiscal policy as well as into the policy of organizing the framework for economic behavior. The economic policy scenarios will only be quantified for the Federal Republic of Germany using some indicators (money supply, interest rates, government expenditures, etc.).

22. The expectation of a worldwide synchronous economic policy does not mean that economic policies will converge, i.e. that the standards for the individual targets will converge or even become the same. It is considered more probable, that for the whole decade a divergence of inflation rates between the Federal Republic of Germany and the rest of the industrial countries will occur, which is comparable to the inflation differentials of the 70's. This means that the current discrepancy of more than 10 percentage points will remain more or less unchanged.

23. Such an assessment implies that - are massive changes of the international competitive position to be avoided - appropriate exchange rate adjustments will happen. While for the DM, compared to non EMS currencies, there are no principle obstacles, a closer presumption is that the DM does not have that freedom vis-à-vis the EMS currencies. On the basis of the experiences with regional fixed exchange rate regimes in the 70's and on the fact that a complete control of capital movements is neither probable nor if introduced would be effective[1], it is expected that competitively neutral DM revaluations in the EMS (if it is not abolished) will not be decisively hindered despite of institutional impediments for a DM-appreciation within the EMS. Thus the real exchange rate (using the consumer price index as a deflator) may remain unchanged in the 80's. A nearly constant real exchange rate can be ascertained for the last 20 years[2], too.

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[1] Cf. Norbert Walter, Kapitalverkehrskontrollen - ein Instrument zur Regulierung der internationalen Kapitalströme? Die Weltwirtschaft, 1972, Heft 2, pages 154-180.

[2] As to the reasons for deviations from the purchasing power parity theory cf. Roland Vaubel, International Shifts in the Demand for Money, Their Effects on Exchange Rates and Price Levels, and Their Implications for the Preannouncement of Monetary Expansion, Weltwirtschaftliches Archiv, Vol. 116, 1980, p. 1-44, here p. 9-11.

24. Another reason to dispense with capital movement controls lies, for all industrial countries, in the necessity to finance the current account deficit (affected by high oil prices) through capital imports. Every apprehension that a currency could become a "mousetrap" currency, is undesired in view of such an intent. If, however, capital is attracted to a free market through favorable conditions, the simultaneous effect will be a relatively restrictive economic policy. Thus the structural current account deficit of the oil-consuming countries, in addition to the neo-conservative tendencies in these countries, represents a disciplinary factor for economic policy.

25. A possible third scenario, impressed by a relatively steady policy in the Federal Republic of Germany with a simultaneous continuation of the stop-and-go policy in the other industrialized countries, is considered as improbable. The international influence on economic policy is clearly determined by the low costs of transfer of information. Also, the markets for the formulation of economic policy are interwoven; this involvement has increased even more after the institutionalization of the so-called economic summits. If it were nevertheless to come to such a divergent economic policy constellation, the results would be - in comparison to the probable development (scenario I) - not so much medium-term distinctions, but differences in the cyclical fluctuations of the economic variables for the Federal Republic of Germany; in the foreign exchange markets considerably greater tensions would have had to be expected.

26. The assumption, that protectionist measures will not increase as a trend in the 1980's, appears to be less reliable. Apart from cyclical movements - in 1980/81 protectionism has already increased according to a report of the IMF - there is a danger that the increasing labor

supply together with an insufficient flexibility of real wages will lead to rising unemployment in many countries and that there will be tendencies to put up a block against foreign competition.

27. Since in many industrial countries (excluding the U.S.) the age-groups entering the labor force during the next years are large in number, there is hardly any limit for higher rates of economic growth as to the supply side in the labor market. In all industrial countries, however, the population growth has sharply decreased; in some countries the population even declined. With this, domestic demand - at least in some branches - will be relatively weak. Since those countries in which the demographic development runs conversely (LDC's) hardly have a financing margin for a demand expansion and since this small range appears to be exhausted through oil price increases, a worldwide dampening of growth rates is expected.

28. It seems to be clear, that in order to solve the problems in the 1980's there need to be new dimensions in economic policy strategies. Especially important is an integration of OPEC-countries in the worldwide system of commodity and capital markets and some progress in solving North-South problems. A new dimension of Tripartite dialogues has to replace the earlier fixation on small trilateral conferences between North America, Japan and Europe. The industrial countries are only one group of participants alongside OPEC countries and the developing countries. Such a development will not occur soon and certainly not without failures in the course of the process.

29. After a decline in relative energy prices because of the recession an increase in the relative price of energy is expected for the 1980's on the whole. Possibly, oil price rises will coincide with phases of economic boom and oil

suppliers will only be successful to some extent in keeping the boom levels of real oil prices during the subsequent recessions. This relatively pessimistic assessment is based on the strong impediments to the efforts of industrial countries to reduce their dependency on OPEC oil. These impediments exist for nearly all countries in the area of nuclear power construction. These considerations, however, do not mean that a rise of the real oil price comparable to the price increase since 1973 is expected. It is regarded as probable, that real oil prices will increase from the level of 1982 by approximately 3 % per year on average. This rise is very much smaller than the average increase since 1973; the rate is similar to the real interest rate expected for the 80's. A correlation to the development of the real interest rate makes sense according to the theory of exhaustible resources[1].

30. It is not probable that the outlined problems for the world economy in general are very much different for the Federal Republic of Germany because of the regional integration of the EEC countries with Southern European countries[2]. A slow progress of integration measures appears evident, but there is also the fact that the joining countries are hardly complementary to the member countries, but may contribute to an aggravation of existing problems e.g. in the agrarian market.

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[1] A rise in relative energy prices influences the level and the rate of expansion of the productive capacity in the future; especially parts of the existing capital stock may become economically obsolete. The development of the productive capacity may have an effect on the relative energy price. These interrelations, however, can hardly be measured.

[2] As to the economic risks and chances of an EEC expansion cf. Jürgen B. Donges and Klaus-Werner Schatz, Muster der industriellen Arbeitsteilung im Rahmen einer erweiterten Europäischen Gemeinschaft, Die Weltwirtschaft, 1980, Heft 1, p. 160-186.

II. Economic policy in the Federal Republic of Germany

a) Monetary policy

31. It is expected that the German Central Bank will, as in the past, set a high priority on fighting inflation. The Bundesbank will not allow the inflation rate to substantially surpass 5 % over a longer time period. This forecast is based on the experiences of the last 10 years. In 1973, the inflation acceleration up to about 7 % induced a drastically restrictive monetary policy. In the spring of 1979, an inflation rate of more than 5 % was the signal for the Bundesbank to switch from a policy of demand stimulation to a policy of fighting inflation.

32. On the other hand, if there is a low rate of inflation and if the growth and employment targets are endangered, the Bundesbank may, as in the past, pursue a policy of demand stimulation. The most recent example of such a behaviour is the easing of monetary policy in the summer of 1977 and the subsequent expansive policy of 1978; the unsatisfactory labor market performance in the summer of 1977 and the strong DM appreciation with its undesired economic effects on German exports caused the Bundesbank to willingly overshoot the money supply target.

33. Monetary policy was pursued in a stop-and-go-manner, even though central bank money supply targets were announced since the middle 70's. After the experiences of the past years it does not seem probable, that the Bundesbank will, in the future, head for a definite money supply target without any qualifications; it seems nearly certain that interest rate and exchange rate targets will

also play a role in monetary policy decisions[1]. Since these targets cannot be reached simultaneously and will be achieved in different degrees, the money supply expansion in the 80's will hardly be steady.

34. Observations of the past can bring about a basic conception of the money supply expansion in the future. The average rate of expansion of the monetary aggregate M_1 in the 60's came to 7,5 % (Graph 1). The fluctuations in the rate of expansion were, with the exception of 1961/62 and 1966/67, relatively small - in any case smaller than in the first half of the 1970's when double digit rates in 1971-72 were followed by a sharp break in 1973/74. In 1975/76, there was again a strong monetary expansion which was similar to the expansion in 1971/72.

35. The pattern of the early 70's can again be seen in the last 5 years. This is surprising because money supply targets were announced since 1974 and the intent was to pursue a policy of steady monetary expansion. It should be mentioned that the target was defined and announced for central bank money, but the assessment of an unstable money-supply growth alters little if one looks at the development of the central bank money supply.

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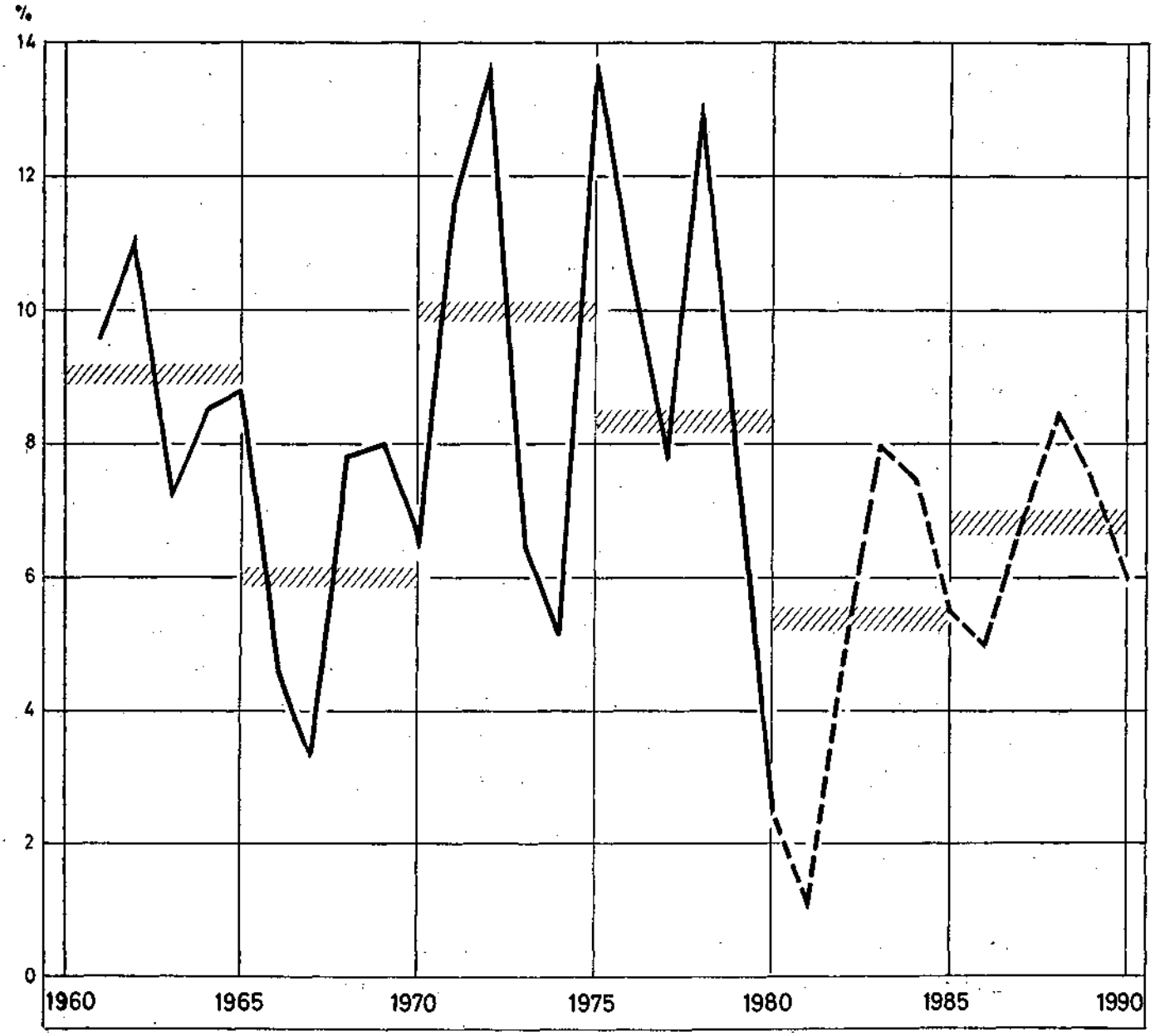
[1] The Bundesbank vice-president says: "Which economic facts should be used as a basis when fixing the monetary growth rate? Our answer to this question is pragmatic; that is, it depends on economic conditions at the time the target is formulated and those expected for the year ahead ... In other words, we ... do not consider it possible to disregard the position of the economy in the cycle and to release monetary policy from its anticyclical function. On the other hand, monetary policy must no longer see itself exclusively as an instrument of anticyclical action: it must attach more importance than it used to to medium term aspects..." Cf. Helmut Schlesinger, Recent experiences with monetary policy in the Federal Republic of Germany, in: Beihefte zu Kredit und Kapital, Heft 5, Inflation, Unemployment and Monetary Control, edited by Karl Brunner and Manfred J.M. Neumann, Berlin 1979, S. 303-320, hier S. 309-310.

Graph 1:

Money supply (M 1)

% change from previous year and % change on average



Indeed, the fluctuations are smaller due to the "comprehensive" definition of the central bank money supply; nevertheless, the average annual rates of change oscillate between 6 % (1974) and 5 % (1980) on one hand, and more than 11 % (1978) on the other. Therefore, one cannot justify the judgement that money supply expanded steadily since 1975. The monetary policy in recent years even has to be characterized as less stable than that of the 1960's. For central bank money the average deviation (measured in absolute terms) of the rates of change from the previous year from the average rate of change comes to 1,1 for the 60's, 2,0 for the period 1970-74, and 1,5 for the period 1974-80.

36. Two different scenarios of monetary expansion are distinguished in the outlook for the 1980's (dependent on foreign monetary policy). Scenario I is based on a monetary policy reacting on the degree of realization of economic policy goals by anti-cyclical measures (policy reaction function). In Scenario II, a monetary policy is presumed, which aims at a stable monetary expansion and thereby gradually reduces the rate of monetary expansion in order to check inflation. Concrete data for both strategies as well as consistent data on interest rates and exchange rates are presented in the appendix (tables 1 and 10). The average rates of change of M_1 for the years 1980-1990 come to approximately 6 % for scenario I (graph 1) and - with clearly smaller fluctuations - to 4.5 % for scenario II.

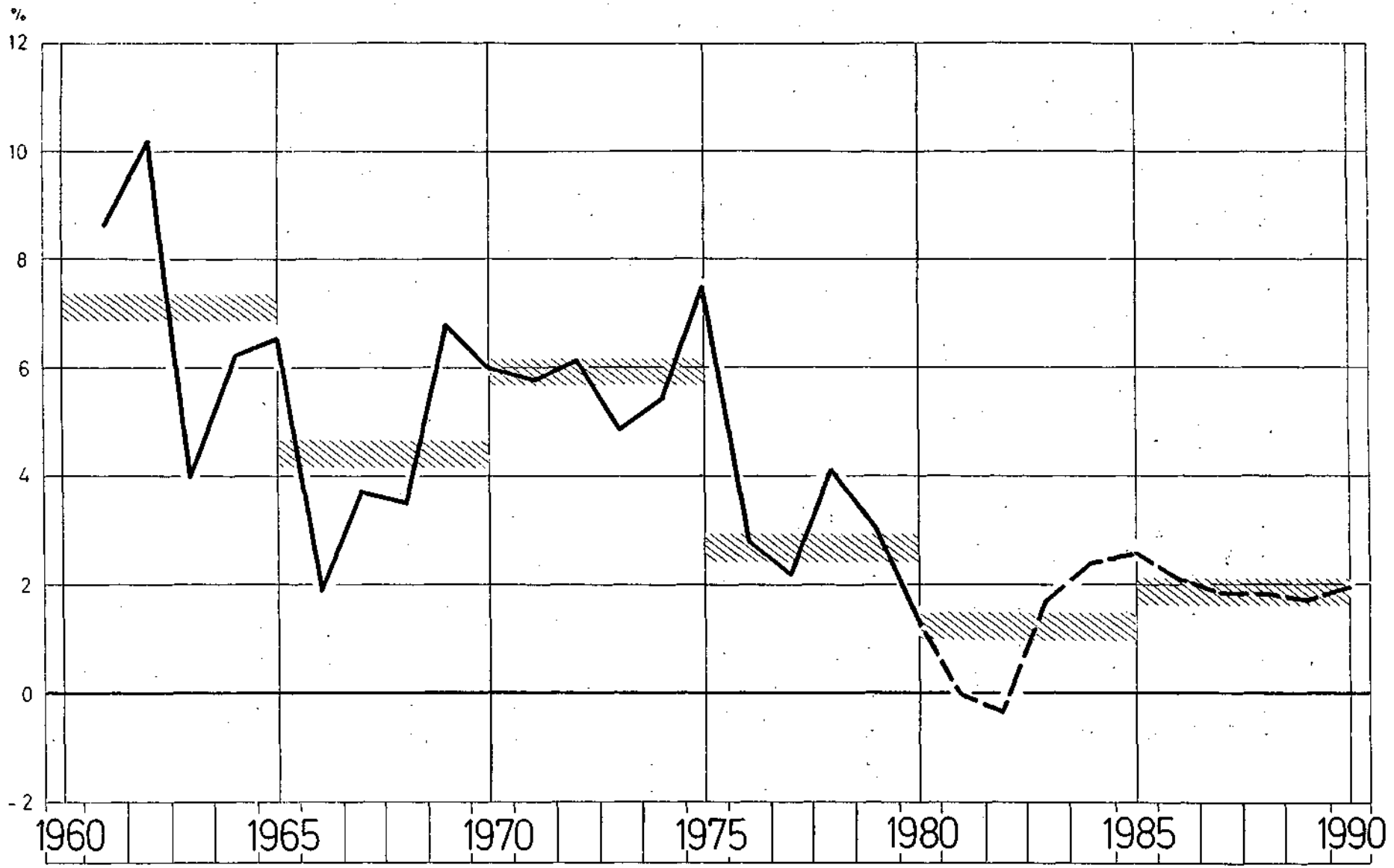
b) Fiscal Policy

37. Government expenditures (central government, Länder, local governments, social insurance) expanded substantially until the middle of the 70's (graph 2). The purchases of goods and services (in 1970 prices), i.e. government consumption and government investment, increased during

Graph 2:

Government purchases of goods and services plus government transfers[a]

% change from previous year and % change on average



[a] *In 1970 prices; transfers deflated by the private consumption deflator.*

1960-75 on the average by almost 5 % (table 2 in appendix). This reflects the strong increase in expenditures for the development of the infrastructure, for military purposes and for health insurance purposes. The addition to the personnel in public service was important, too. The number of employed in the government sector grew during 1960-75 at an annual average of 3,5 %, i.e. by a total of 1,4 million civil servants. In recent years, the expansion of real government purchases has weakened considerably; the increase for the period 1975-80 comes to 2,3 % on average (2,5 % for government consumption and 1,3 % for investment).

38. The same holds true for government transfers to the private sector: High rates of increase in the period 1960-75 (7 % on average; deflated by the private consumption deflator) were followed in the years 1975-80 by a deceleration of the expansion to an average of 3 % (table 2 in appendix).

39. In the next years, real government purchases will probably increase only moderately. The high public deficit, which is increasingly regarded as driving interest rates and impeding economic growth, and the tendency towards reducing the increase of public expenditures support this supposition. For the same reason, government transfers may expand less than in the past. Compared to the second half of the 1970's, a deceleration of expenditures is probable for another reason. More often than in the past tax reliefs are expected in order to favor incentives to work and to invest and government will try to limit the increase of the budget deficit resulting from the tax reliefs.

40. In detail, it is considered probable that the number of employed in public service will increase by 0,2 % per year until 1985 and by 0,5 % per year from 1985 until 1990. For government purchases of goods an increase of

2,5 % on average is expected. This results - with small cyclical fluctuations - in an increase of government consumption of 1,7 % p.a. in the first half of the 80's and 1,9 % p.a. in the second half. Even smaller rates are probable for government investment. Due to changes in the age structure of the population, a decline of real investment in the areas of Kindergärten and school and university structures is expected. Compensatory measures in the area of hospital construction, recreation facilities and public road construction are expected to be weak due to the strained financial situation of the government. This means, that the share of investment in government expenditures will decline. A shrinking share of investment is also due to the fact, that transfers may increase more than real investment expenditures, despite the expected cut of transfers to households in the form of family allowances, unemployment compensations, pensions, etc. and despite the cut of subsidies to firms. The share of government expenditures in GNP may decline from 46.5 % in 1980 to about 45 % in 1990; nevertheless it would then remain seven percentage points above the 1970 level (graph 3).

41. In scenario II for economic development until 1990, it is assumed that government expenditures between 1980 and 1990 will - mainly as a result of more substantial cuts in subsidies and transfers - increase by about one percentage point less than in scenario I. Also less fluctuations in the rates of change are assumed for the entire period (table 11 in appendix).

42. In taxation policy, too, scenario I and scenario II do not differ as to the direction of the policy change, but the change will be more pronounced in scenario II. In both cases, it is assumed that tax reliefs will be

Graph 3:

Government[a] expenditures and taxes

as a percentage of nominal GNP

[a] *Including social insurance*

decided upon in relatively short intervals - somewhere around 2 years. The income tax system is expected to be adjusted in order to avoid increasing marginal tax rates as a consequence of inflation. In both scenarios, it is also expected - though in a different degree - that the share of direct taxes will be reduced in favor of the share of indirect taxes. Concretely, this means a lower income tax, but higher rates in the net value-added tax and in special excise taxes.

c) 1980's - a revival of a policy of deregulation?

43. In the Federal Republic of Germany the question of adequately organizing the economic system was debated only in the short time period between the end of the war and the formation of the republic. After that, through Ludwig Erhard's courageous decisions as well as through the constitution and the Bundesbank law, the market-oriented framework for economic behaviour was established. In the period following, it was neither further developed nor decisively strayed away from. Important landmarks for establishing a market economy were the passage of the anti-trust law (1957) and the introduction of currency convertibility (1958) and of floating exchange rates (1971, respectively 1973). The Keynesian interlude introduced with the Act to Promote Economic Stability and Growth (1967) had not very much influence on economic policy.

44. The detrimental macroeconomic effects of an interventionist policy with "good intentions" have meanwhile become clear in many areas (housing construction policy, labor market policy). Nevertheless, the following considerations speak against a strong revival of market oriented policy in the 80's: those groups marked by a distinct anti-market economy attitude have become more articulate in recent

years. Marxist, religious and environmentalist ideas have joined with one another. This movement could attain increasing importance because the present middle-part of the age pyramide received their education in a time where existential dangers were not discernable and because ideological misdevelopments are not corrected. This has especially affected the labor market. Equity considerations were mounting and have led to a massive discrepancy between domestic and foreign social compensations. Working hours and working breaks, length of vacations, health provisions, protection against firing and age of retiring are much more comfortably regulated than internationally. There is not very much labor mobility between professions and regions.

45. The challenge from those who enter the labor market in the 80's will set off the closed-shop mentality of management and labor. Even more, considering the financial situation of the government and the decreasing demand for goods supplied by the government (education etc.) employment in public service may clearly increase much slower than in the past. Self-employment will appear inevitably as an important alternative. The relation of dependent workers to the total labor force may shift in favor of the self-employed. This may have an influence on economic policy. A market oriented policy of deregulation, particularly with the existing displeasure with bureaucrats, may be encouraged. There may be a more market-oriented economic policy for another reason. Economic policy in the U.S. has been basically reoriented, and it could be tried, though with some restrictions, to imitate this policy. As a whole, the market oriented policy will experience a certain renaissance in the 80's. This ought to be true independent of which party or parties set government policy.

III. Collective Bargaining Behaviour

46. The wage settlements in the 80's, after being excessively high in 1980 and 1981, may be increasingly characterized by unions' insight into macroeconomic relations. Consequently, the development will be more comparable to that of the 50's and 60's than to that of the 70's. The demographical development, particulary the increasing labor force capacity (until the middle of the second half of the 1980's), and the currently high number of registered and nonregistered unemployed reflect a relatively weak bargaining position of the workers and the unions. However, it can hardly be expected that in the coming years firms will convert to labor intensive production methods and thus intensify the demand for labor, since it is known that the labor force will start to decline again around the end of the decade. The increase of real wages will probably persistently be below - if only to a in limited extent - the increase of productivity, adjusted for terms of trade effects.

47. There appears to be clearly less insight into the functioning of markets with regard to the problem of adjusting the real wage structure to the structure of workers' productivity. Some changes in relative effective wages may occur, but not by deliberate wage differentiations in wage settlements corresponding to the relative scarcities, but by means of the wage drift in phases of economic upswings.

48. Unions' endeavors may be aimed less at shortening the number of working hours than they were in the 70's. The alternatives for a decision are expected to be more like "maintainance of present real wages or more time off" and less "increase of real wages or more leisure time," which was an alternative only in the 60's and 70's. A real

income that does not decline or moderately increases is seen to be more attractive than more time off. In the early 80's, however, there will be a limited decline in the number of working hours for some groups because of longer vacations or as a result of early retirement. In some branches, such settlements have already been decided upon. The share of part-time workers may continue to increase; some attempts to come to a "job-sharing" are expected, too. The number of working hours per employee, whether part-time or full-time, may therefore decline at about the same rate as in the 1960's and the 1970's.

49. Within the framework of scenario I, wages per hour may increase by 5,5 % on an average in the 80's. From 1970-1980, the average rate of increase amounted to 8,6 %. To bear in mind is that the rate of inflation in the 70's was 5,1 %, while a rate of nearly 4 % is expected for the 80's on an average. Thus the real wage increase in the course of the decade will be around two percentage points less than in the 70's. Within the framework of scenario II, a wage increase is implied, which comes out around one percentage point less than in scenario I, in order to provide from the side of the wage policy an adequate contribution to the reduction of unemployment.

D. Scenario I: Probable Development

I. Outlook for 1982[1]:

50. In the course of 1981 the economic situation in the Federal Republic of Germany continued to worsen. With demand and production stagnating, capacity utilization had already decreased by fall to a level that was about 5 percentage points lower than at the beginning of the recession in early 1980. Concomitantly the situation on the labor market deteriorated substantially. By the end of 1981 the number of unemployed is some 50 per cent higher than a year before. The unemployment rate has reached 6.5 p.c. - a level which had last been observed in the early fifties.

    The downswing in 1981 was led by the pronounced weakness of domestic demand, as - contrary to all other postwar recessions - private consumption declined sharply. Investment in producer durable equipment which seemed to be relatively robust in 1980, decreased as well. Only the vigorous increase in exports - following a real depreciation of the D-Mark - prevented a marked reduction of real GNP.

51. Due to the continuing restrictive stance of monetary and fiscal policy domestic demand is likely to decline further in 1982. Likewise for foreign demand a downturn - most probably towards the beginning of 1982 - seems to be imminent. The economic development in many industrial countries has deteriorated perceivably and, in addition, there is likely to be a reaction on advanced purchases after the revaluation in the EMS. An endogenous inventory accumulation as a reaction to the reduction of stocks in the course of 1981 is not likely. Continuing cost pressures

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[1] Cf. Alfred Boss, Günter Flemig, Enno Langfeldt, Peter Trapp und Norbert Walter, Vor nochmaligem Produktionsrückgang, Die Weltwirtschaft, 1981, Heft 2, p. 16-37.

and unfavorable sales expectations will cause enterprises to keep stocks at a low level. All in all, real GNP will once more decline markedly. In view of the current tendencies in world economic activity and in economic policy a recovery can be expected in the second half of 1982 at the earliest. For the year as a whole real GNP will decrease 1982 again by some 1 p.c.. Capacity utilization will drop to the low level reached in the 1975 recession.

52. This forecast is based on the assumption that fiscal policy - in view of higher deficits - does not intensify its pro-cyclical course, that wage increases are below the expected inflation rate of some 4.5 p.c. and that monetary policy allows the money supply to expand at a rate which is oriented towards the growth rate of potential output instead of focusing on interest rates in order to achieve exchange-rate targets. In view of the improvement in the foreign position - the strengthening of the D-Mark, decreasing current account deficits and declining interest rate in the United States - monetary policy is likely to perceive room for a shift away from its restrictive stance. However, in view of high wage demands and inflation there is still resistance to accept an increase in the budget deficit and to loosen monetary brakes. Therefore, the risk is considerable that economic policy will not move to a less restrictive stance as early as assumed, thus causing the downswing to be longer and more pronounced. Not only are similar risks prevalent in other industrial countries but, additionally, increasing protectionism might hamper exports.

53. The appreciation of the D-Mark is likely to slow down inflationary impulses from abroad. Therefore, in 1982 the dampening effects of the long lasting restrictive monetary policy will predominate. The deceleration of inflation will be hampered by fiscal measures. By the end of 1982 the current rate of increase in consumer prices will have

been halved to some 3 p.c.. However, due to the overhang, inflation will remain relatively high on a year-over-year basis. The price increase will be about 4.5 p.c. in 1982 after some 6 p. c. in 1981. At the end of 1982 the year-on-year rate of change will be considerably below 4 p.c..

54. The ongoing recession in the first half of 1982 also means that unemployment will increase further. Additionally, it has to be feared that in view of high inflation, wage increases will be settled upon, that will not be low enough to allow for an expansion in the number of jobs to absorb the unemployed and new entrants into the market. Because employment is affected by production only with a lag, unemployment will increase till the end of 1982 even if the cyclical turning-point is reached in the second half of 1982. During winter 1982/83 the number of unemployed will be above 2 millions.

55. In view of the unfavorable labor market development it is urgently necessary to improve the conditions for a sustained recovery of investment activity. Therefore, not only a move towards a steady, medium-term oriented monetary policy and a growth-stimulating fiscal policy are required, but also modest wage settlements. To reduce unemployment and to integrate the newcomers to the labor market the increase in real wages has to be below the increase of productivity - corrected for terms of trade effects - for a number of years. As a first step a freeze of nominal wages should be agreed upon. The prolongation of current wage settlements would be adequate given the unfavorable economic development. However, adjustment clauses should complement the settlements, to allow for retroactive wage increases if the rise of productivity and prices turns out to be higher than anticipated in the forecast.
The announced monetary target provides an expansion of central bank money from the fourth quarter of 1981 to the fourth quarter of 1982 in the range of 4 to 7 p.c.. An

expansion in the middle of the range seems to be in line with a medium-term oriented course. However, the wide range gives room for an overly expansionary as well as for a continuing restrictive course. Presently, the Bundesbank strives for an expansion of central bank money in the lower target range. According to the Bundesbank a stronger monetary expansion depends on further progress in reducing inflation and the current account deficit. Due to these reservations economic agents remain uncertain about the course of monetary policy. With the expected decline in inflation and the current account deficit and a mounting debate about high unemployment and weak growth it is probable that the expansion of central bank money will become overly expansionary in the course of 1982.

II. Medium-term outlook

a) Population and labor force

56. An outlook for the 1980's in the area of population development stands on relatively solid ground. The expected discrepancy between the available results of the population extrapolations from the 1970 census and the results of the population census (planned for 1983) pertains to the level and less to the profile of the development of the population in individual age groups or as a whole.

57. The population forecast is based on the forecast of the Federal Statistical Office on the German population (including immigration) until the year 1990. This forecast - made in 1976 - has proved reliable as measured against the factual results for the German population on Dec. 31st, 1978. The deviation between the actual and forecasted data comes to 173,400 or 0.30 % for the German population as a whole (0.26 % for female and 0.35 % for male). The

deviation turns out to be even less for the female and male population between the ages of 15 and 65, i.e. for those age groups which are most important for the calculation of labor force. A comparison of the forecast results for individual age groups of male and female population on Dec. 31st, 1980 on actual figures is not possible as data are not yet available. Comparing the forecast result and the actual data for the overall population on Dec. 31st, 1980, the forecast has still to be considered relatively reliable. According to the results of the extrapolation (table 1) up to Jan. 1st, 1981, there were 57,089 million Germans, 0.71 % (or 400.000 persons) more than was forecasted by the Federal Statistical Office. The error seems to be related to persons 60 years of age or older due to changes in the mortality rates.

58. According to the forecast of the Federal Statistical Office[1], the German population will decrease from Jan 1st, 1981 until Jan 1st, 1990 by 1.9 million, i.e. around 210,000 persons or 0.38 % per year. The number of foreigners living in Germany grew in recent years (table 1). A decisive factor for this was an increase in net immigration. According to a forecast model[2], the number of foreigners will increase by about 200.000 persons until 1990. The result for total population will be an average decrease of approximately 180.000 or 0.3 % per year until 1990. This development is entirely different from that in the years after the war until the middle 70's, when (from 1950-74) the total population grew on the average by 0.2 % per year. Yet, this means only a small acceleration of the contraction process vis-à-vis the average decline from 1974-80 of 0.13 % (graph 4).

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[1] Cf. Wilfried Linke, Charlotte Höhn, Voraussichtliche Bevölkerungsentwicklung bis 1990, Statistisches Bundesamt, Wirtschaft und Statistik, 1975, Heft 12, p. 793-798, 1976, Heft 6, p. 337-340.

[2] Cf. Modellrechnungen zur langfristigen natürlichen Bevölkerungsentwicklung in Bund und Ländern, Band 1.

Graph 4:

Population development

Change from previous year and average change

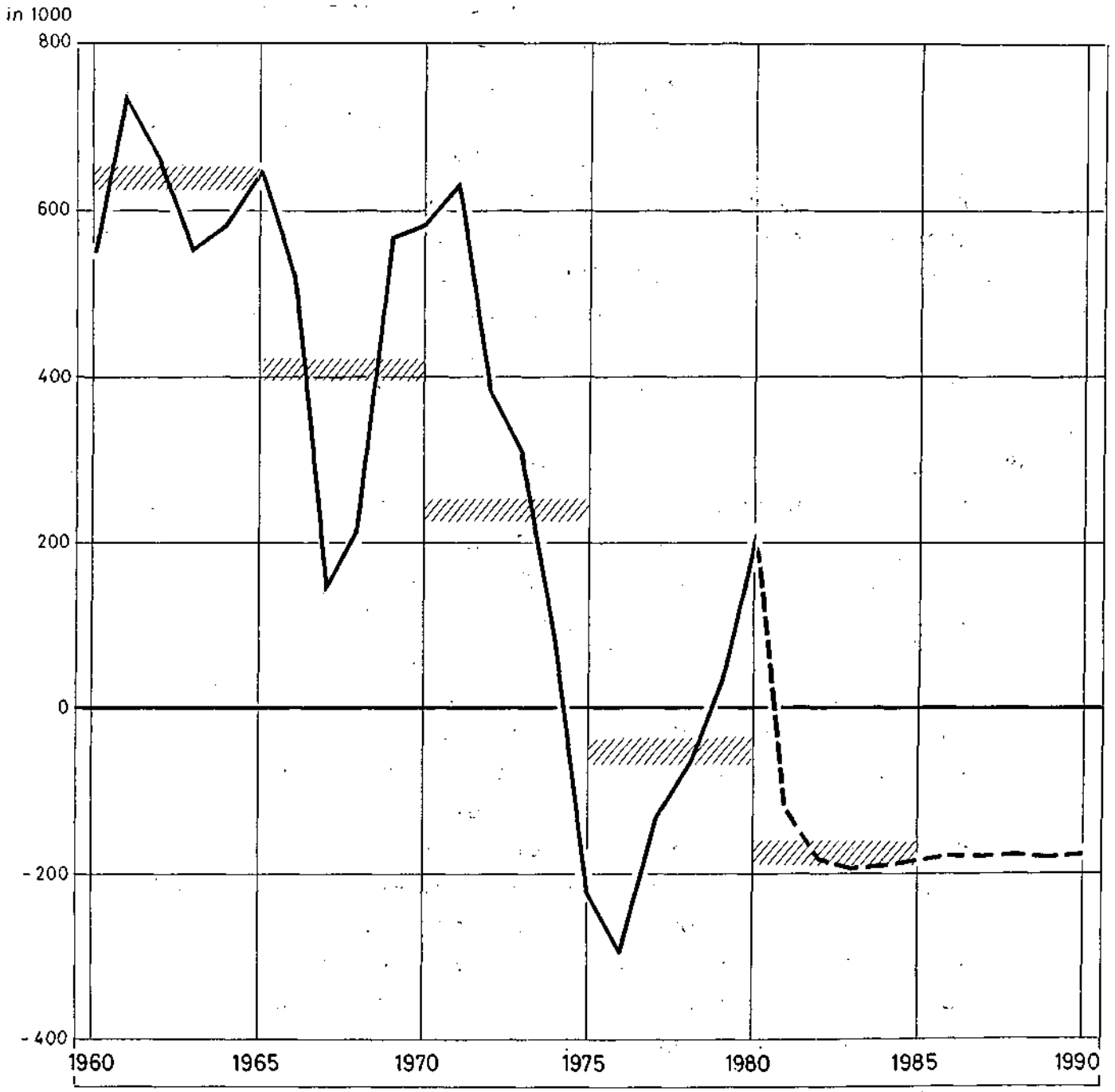


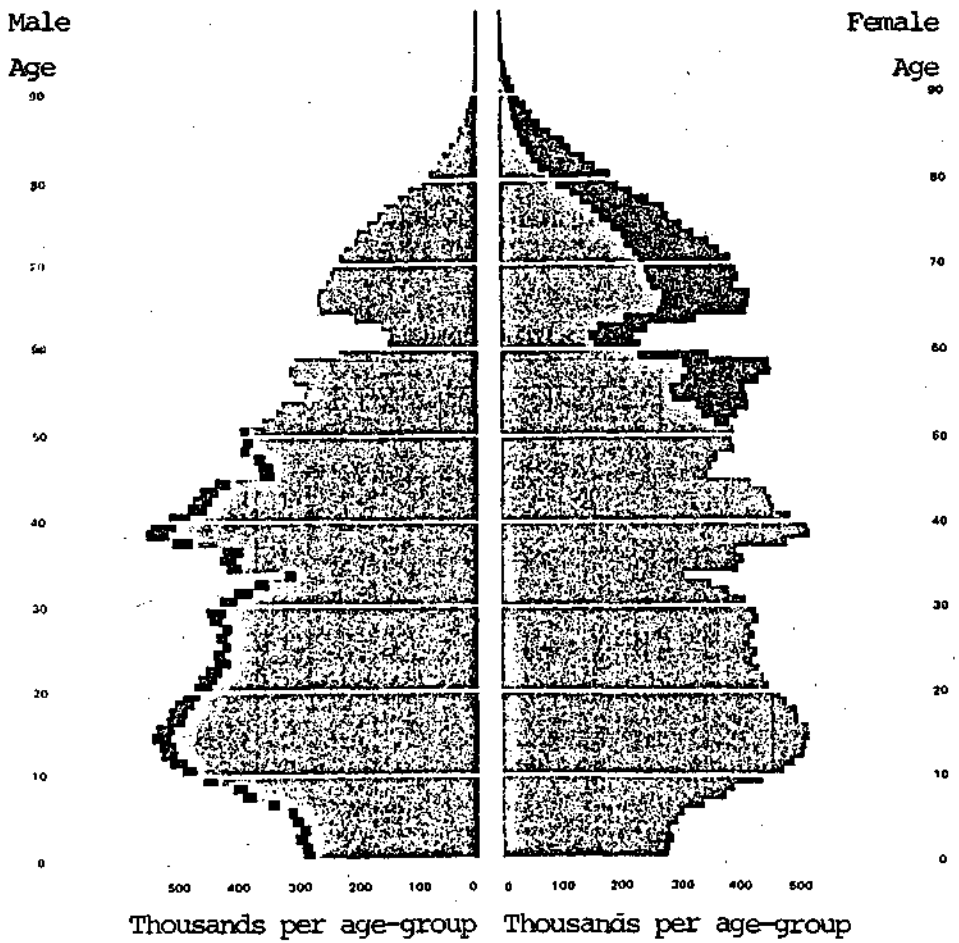
Table 1: Population at the beginning of a year (millions)

Year	German population		Foreigners	Total
	according to the forecast of the Federal Statistical Office	actual		
1977	57.549	57.590	3.852	61.442
1978	57.347	57.461	3.892	61.353
1979	57.142	57.316	4.006	61.322
1980	56.914	57.189	4.250	61.439
1981	56.685	57.089	4.569	61.658
1982	56.459	.	.	.
1983	56.237	.	.	.
1984	56.019	.	.	.
1985	55.806	.	.	.
1986	55.599	.	.	.
1987	55.394	.	.	.
1988	55.190	.	.	.
1989	54.986	.	.	.
1990	54.779	.	.	.

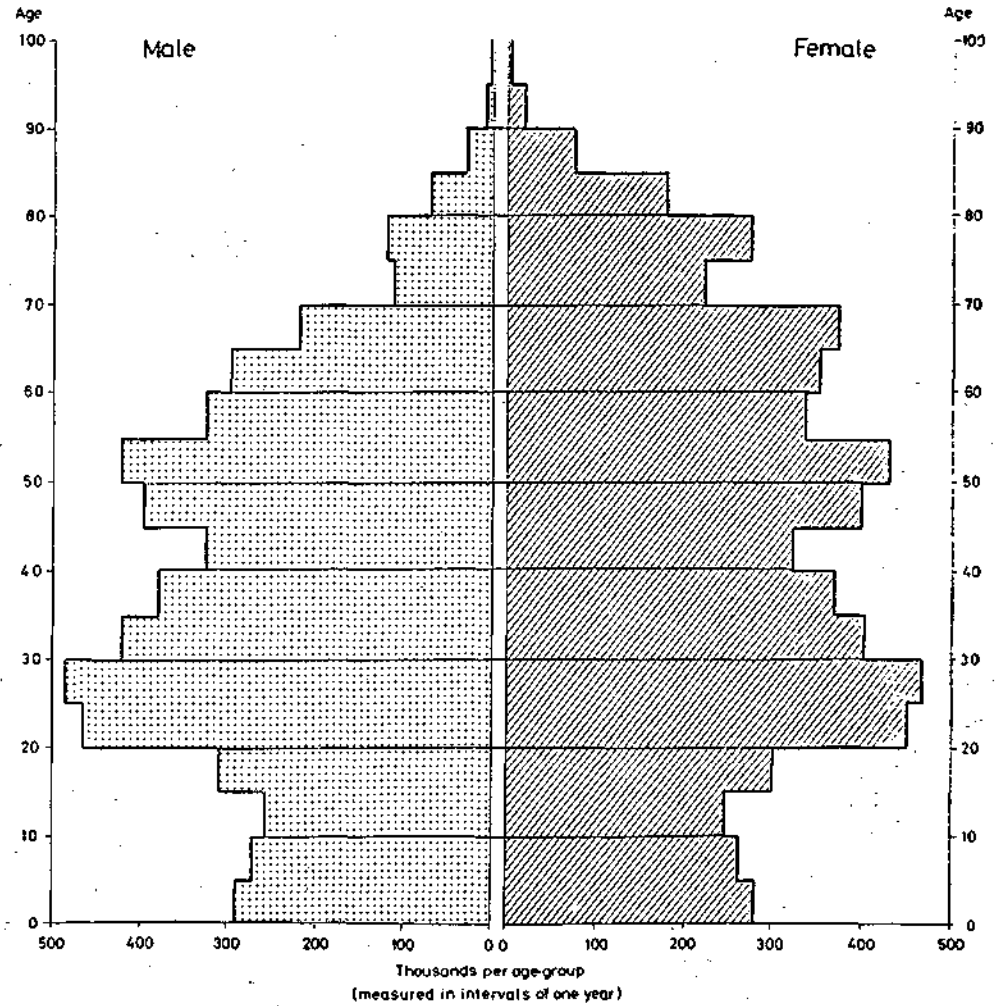
59. The age structure of the population will change drastically until 1990. Table 2 illustrates, that from 1980 to 1990 a relative (and absolute) decrease of those under 20 years of age, an increase of those 20 years up to 65 years and a decrease of those over age 65 will occur. Graph 5 shows the distribution of male and female population as to the age groups on Jan. 1, 1978 and on Jan. 1, 1990. It exhibits particularly the small basement of the age pyramid in 1990.

Graph 5:

Structure of the German population on January 1st, 1979



Structure of the German population on January 1st 1990



60. Despite shrinking total population, the labor force capacity, i.e. those persons out of the total population who by given economic and social conditions are able to and want to work, may rise. The absolute number of persons between the ages of 15 to 65 will increase in the years up to 1990. An increase in the age group of 20 to 60 years (German males) of around 827.000 persons is expected; with females, there may be a decline of around 95.000 persons. Moreover, with some age groups of married women, there will be - as in the past - an increasing tendency to work. Countercurrent effects on other groups, especially an influence of longer education time and of earlier retirement, are expected to be smaller. The participation rates of males in the middle age-groups are expected to remain stable in the forecast period[1].

Table 2: Shares of age groups in the German population at the beginning of selected years (%)

Age group	1975	1980	1985	1990
up to 15 years	21,5	18,0	14,7	14,6
15 up to 20 years	7,3	8,5	8,3	5,5
20 up to 60 years	50,0	53,5	56,1	58,5
60 up to 65 years	6,1	3,9	5,9	5,9
65 years or older	15,2	16,3	15,0	15,4

[1] Cf. Alfred Boss, Das Erwerbspersonenpotential in der Bundesrepublik Deutschland in den Jahren 1980 bis 1990; in: Institut für Weltwirtschaft, Kieler Arbeitspapiere, Nr. 114, Januar 1981.

61. For married women, compared to the development of the past 20 years, only an insignificant increase in the participation rate is expected (graph 6). This is considered probable, because the increase in real wages may prove to be more moderate in comparison to the last 20 years. The fact that real wages are important in the decision-making of individuals is reflected in the development of the last years. The flattening of the rise of real wages was concurrent with a clearly slower increase in the labor force participation rate of married women[1].

62. The most important results of the forecast of the labor force capacity are presented in Table 3 in the appendix. Graph 7 shows the forecast figures for the German labor force capacity as well as the numbers given by the Institut für Arbeitsmarkt- und Berufsforschung in Nürnberg (IAB) in 1976 for the years 1961 - 1990.

63. The supply of foreign labor declined after a strong increase up to the middle 1970's but increased to about 2,4 million persons in most recent years. In the coming years the supply of foreign labor may change only slightly due to a ban for the immigration of guest workers from outside the EEC. Indeed, the foreign population in the Federal Republic of Germany will increase as a result of family reunitings, through immigration from EEC countries and through natural population movements (excess births over deaths), but it will decline due to immigrants returning to non-EEC countries. This overall tendency will be overlapped by fluctuations following the business cycle.

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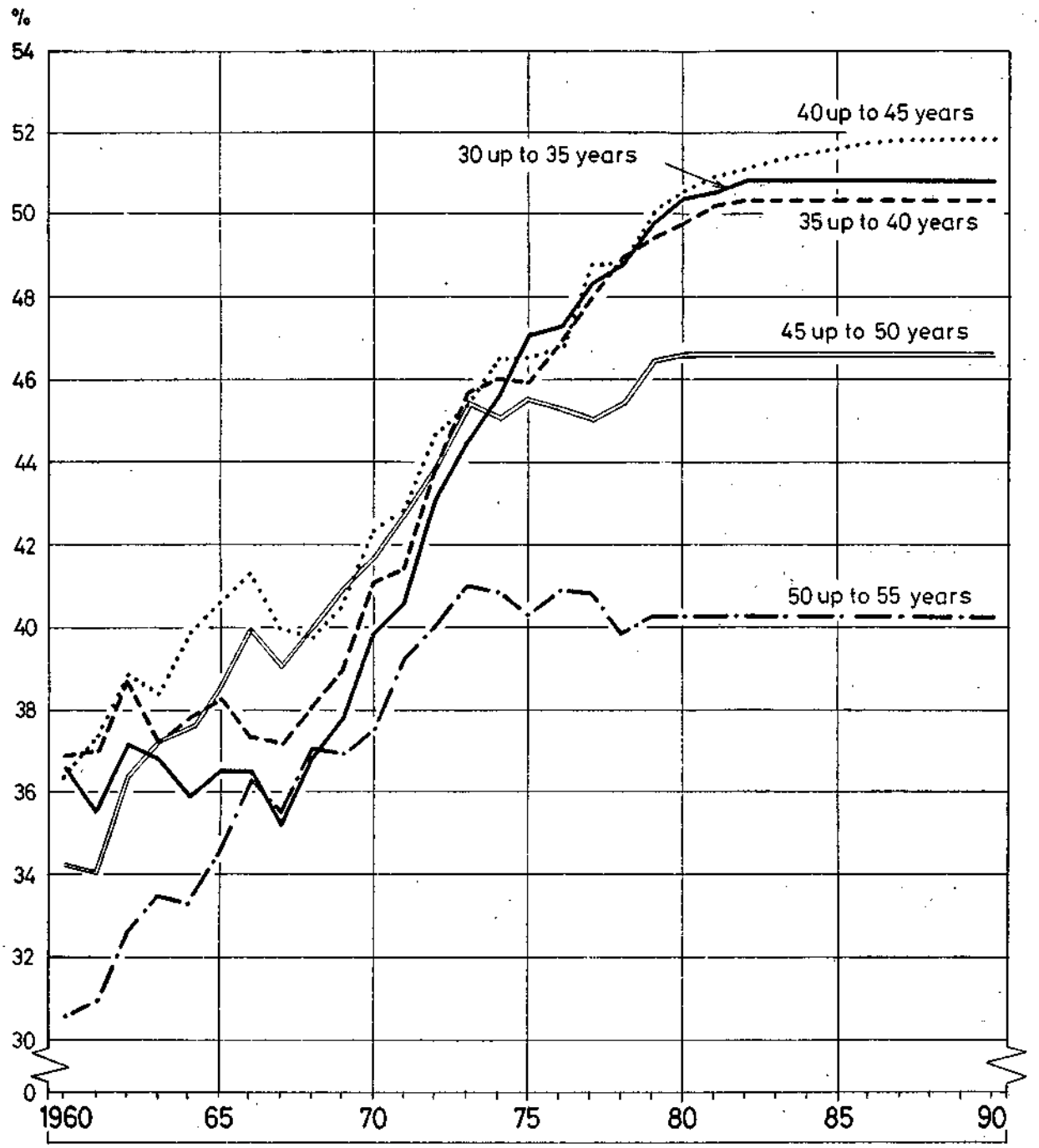
[1] Cf. Alfred Boss, Die Erwerbstätigkeit verheirateter Frauen in der Bundesrepublik Deutschland - Erklärung und Prognose, in: Beiträge zur Arbeitsmarkt- und Berufsforschung, Nr. 56, Nürnberg 1981, p. 69-81.

Graph 6:
Labor force participation rates of married women in varying age groups



Graph 7:

Labor force capacity according to the Institut für Arbeitsmarkt- und Berufsforschung and according to own calculations

b) Capital stock and potential output

64. The capital stock of the German economy grew from 1960 to 1970 on an annual average of 5.8 p.c. (table 3). In the 70's this rate declined to 4.3 p.c.[1]. This was due to the slow increase in investment in producer durables as well as in construction (table 4). In fact, the first half of the 70's is the phase of weak investment activity; the second half shows a stabilization of investment activity. The 5-year averages, however, are somewhat distorted because the capacity utilization rate in 1975 was lower than in 1970 and 1980.

Table 3: Capital stock and potential output
- % change on average

Period	Capital stock	Potential Output
1960-1970	5,8	4,5
1970-1980	4,3	3,1
1980-1985	3,2	1,8
1985-1990	3,3	1,9
1980-1990	3,3	1,9

[1] It is doubtful whether the Federal Statistical Office's results for the capital stock are sufficiently good approximations of the capital stock that can be used economically. Doubts are justified because of drastic changes in relative factor and commodity prices. The figures of the capital stock in the 80's are subject to the same kind of qualifications. Especially, the figures on the level of the capital stock at the beginnig of the 80's may comprise real capital that is economically obsolete.

Table 4: Investment (in 1970 prices) - % changes on average

Period	Investment in fixed capital	Investment in producer durables and equipment	Investment in constructions
1960-1965	5,7	7,1	5,1
1965-1970	3,8	7,3	1,8
1970-1975	- 1,0	- 1,0	- 1,0
1975-1980	5,2	6,9	3,9
1960-1970	4,7	7,2	3,4
1970-1980	2,0	2,9	1,4
1980-1985	1,2	2,0	0,5
1985-1990	4,1	5,9	2,5
1980-1990	2,6	4,0	1,5

65. In accordance with the development of the capital stock, the growth of potential output decelerated[1]. After 4.5 p.c. in the 60's, there was an average increase of 3.1 p.c. for the 70's (table 3).

66. In order to forecast the development of the capital stock and the potential output until 1990, it is necessary to assess the additions to the capital stock, i.e. investment. Some considerations to this are presented in the section on GNP and its components below. The results are shown in table 4. The average rates of change for the capital stock and potential output in the period 1980 to 1990 are approximately 3.5 p.c., respectively 2 p.c. (table 3).

[1] This is a consequence of the procedure used in measuring potential output. As to the statistical details see Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung, Jahresgutachten 1977/78, Bundestagsdrucksache, 8/122 vom 22. November 1977, p. 213-214, p. 216-218.

c) Gross national product and the inflation rate

67. The expected monetary policy for the 80's was described above. Graph 8 illustrates the consequences of such a policy for M_1. According to Trapp[1] the lag between changes in the rate of expansion of M_1 and changes in the development of economic activity, respectively price development, amounts on average to some three to four quarters for the economic activity and some 2 1/2 years for the price development. Thus the main characteristics of the economic development until mid 1982 are determined by the domestic and foreign policy (especially monetary policy) already set. Some details of the economic short-term outlook for 1982 are already described above.

68. On the basis of this development and the probable monetary policy for 1982 and thereafter, the price performance plotted in graph 9 is expected (table 4 in appendix). The inflation rate, measured by the change of the consumer price index, will clearly decrease in the next years due to the restrictive monetary policy of the recent years; some 4.5 p.c. for 1982 and 3 p.c. for 1983 are probable. In the course of the economic recovery in 1983/84, the inflation rate will - with the usual lag - increase to 4 p.c. and then decrease again to about 3 p.c.. After this, the inflation rate is expected to increase to 4 p.c. as a result of a new economic recovery. On the average for the decade, the inflation rate will come to nearly 4 p.c. and therefore will be higher than in the 1960's (2.5 p.c.) but lower than in the 1970's (5 p.c.).

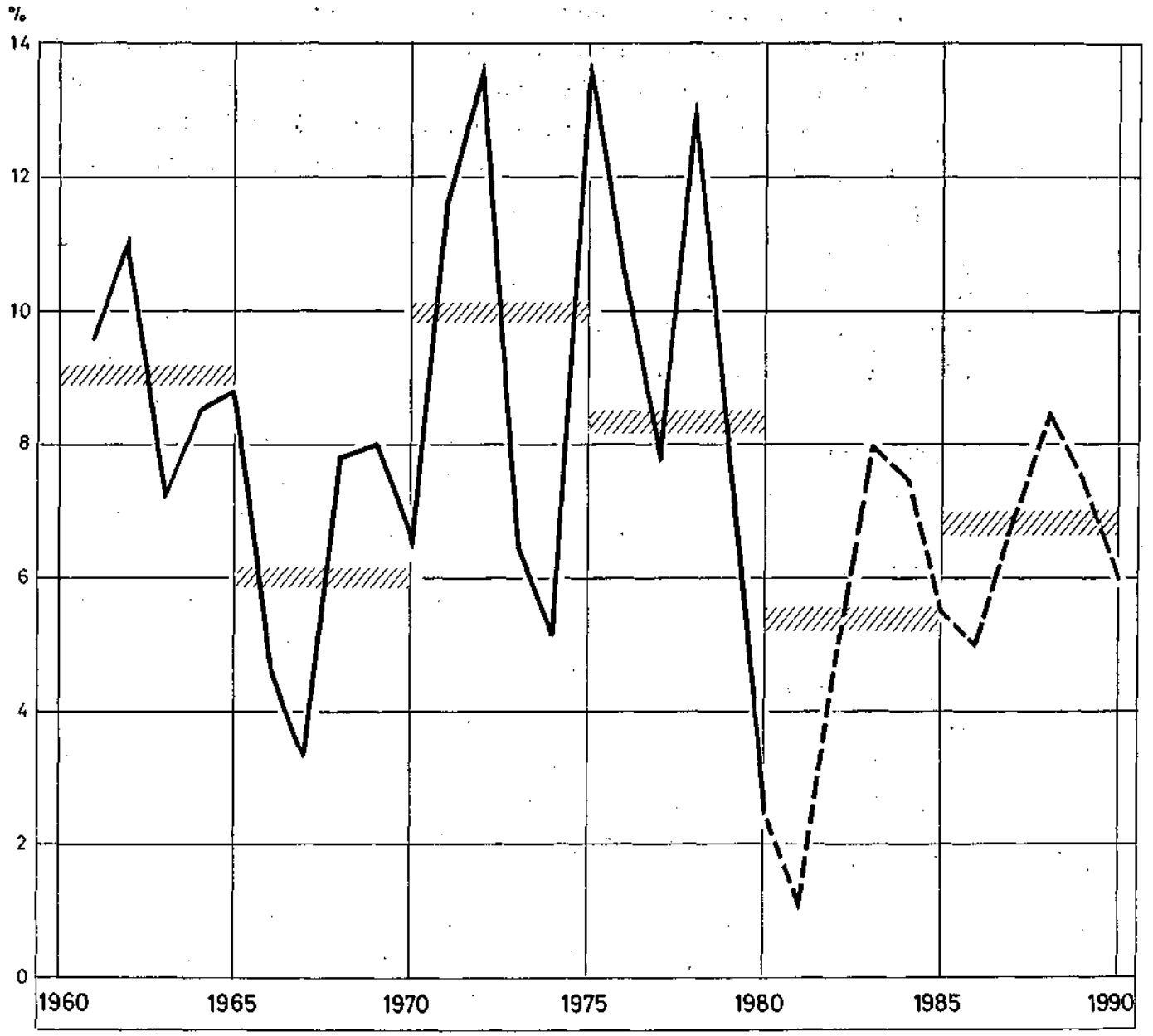
69. The basis of this appraisal of the future inflation rate is the hypothesis that a permanent change of the rate of monetary expansion, ceteris paribus, will lead to a

[1] Cf. Peter Trapp, Geldmenge, Ausgaben und Preisanstieg in der Bundesrepublik Deutschland, Kieler Studien, Nr. 138, Tübingen 1976, p. 143-144.

Graph 8:

Money supply (M 1)

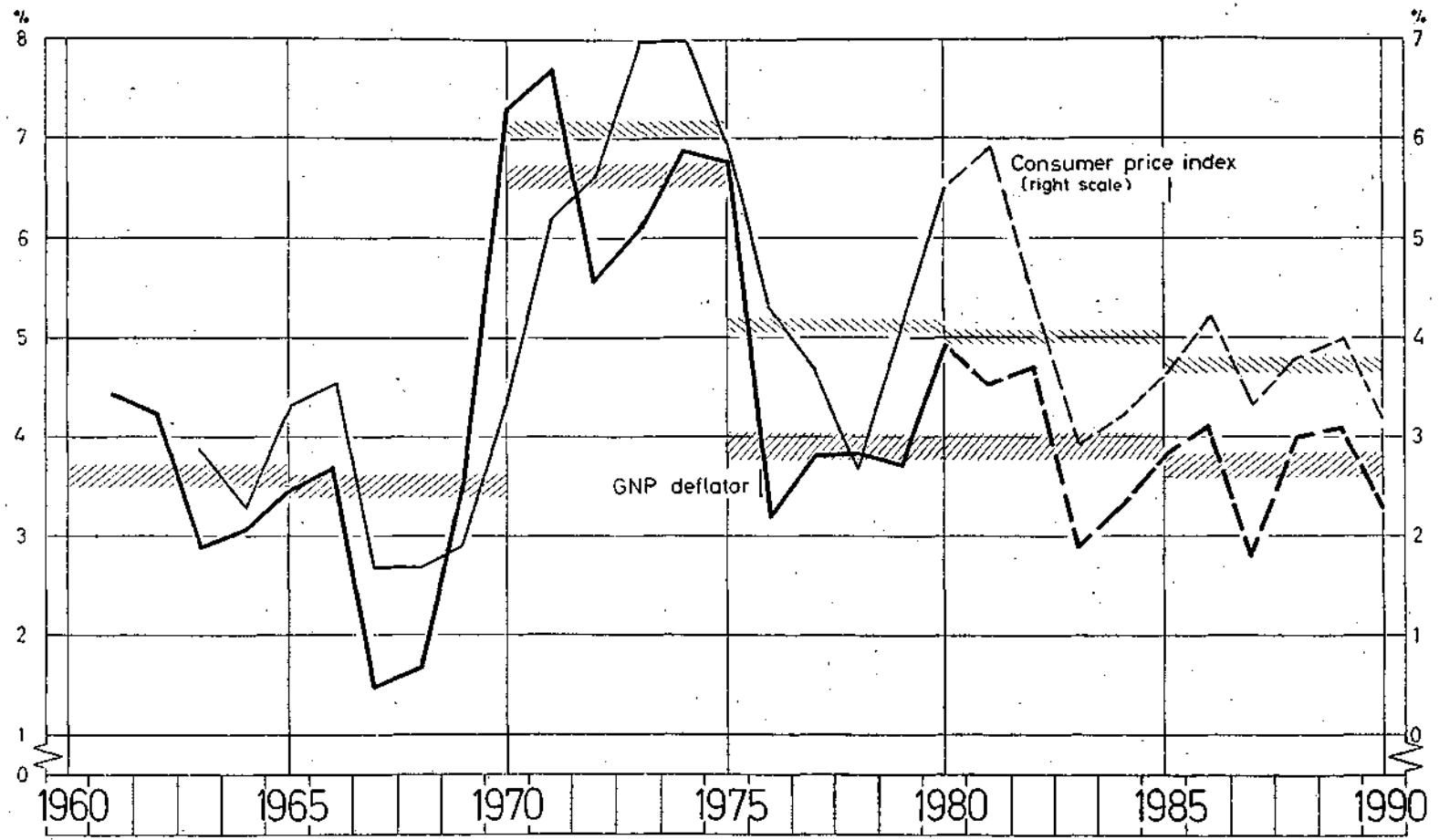
% change from previous year and % change on average



Graph 9 :

GNP deflator and consumer price index

% change from previous year and % change on average



change in the inflation rate. The adjustment will come only with a lag after there has been a reaction of the nominal demand for goods due to changes in relative prices of financial and real assets. Additional influencing factors (exchange rates and import prices, value-added tax rate changes, etc.) are only significant as far as they can lead to a short-term deviation from the trend set by monetary policy[1].

70. Due to the expected terms-of-trade improvement the GNP deflator may increase more than the deflator for domestic demand in 1982/83. Since the terms of trade for the years thereafter until the end of the decade are expected to be practically unchanged on average, the differences between the rate of change for the GNP deflator and the deflator for domestic demand are hardly worth mentioning (table 5 in the appendix).

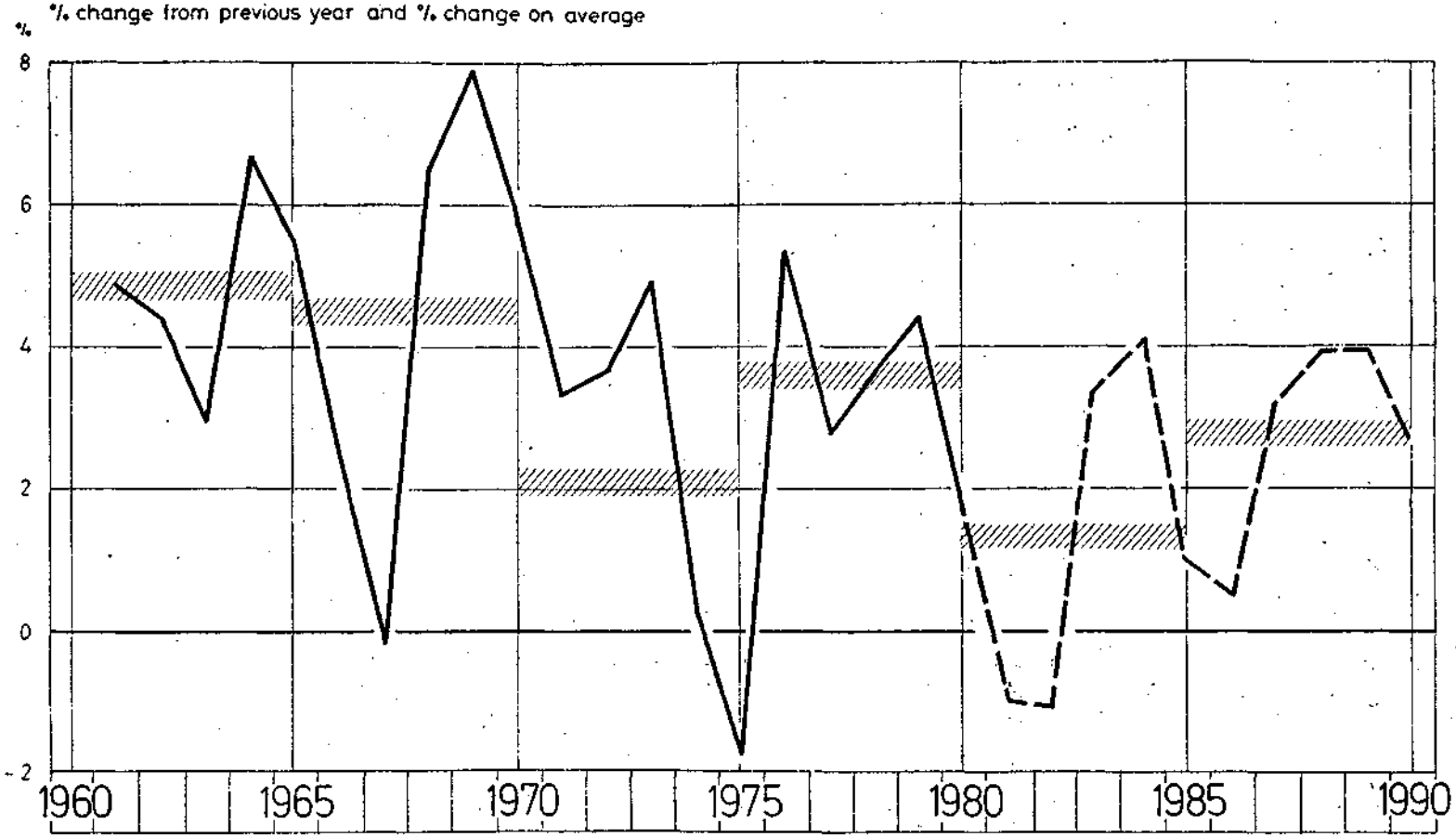
71. The expected monetary policy together with the described price development may lead to an economic recovery at the end of 1982. Real GNP may increase in the years 1983 and 1984 by 3-4 %, i.e. stronger than potential output. Facing increasing inflation rates for 1984, the expected onset of a restrictive monetary policy will check economic activity. But the recession in 1985/86 may indeed turn out relatively mild because economic policy may be pursued not as much with anti-cyclical intentions as in the past. In the following recovery, the GNP growth rate may again reach 3-4 % (graph 10).

72. The results for economic activity in the 80's are derived from using a regression approach for domestic demand. The independent variables in the regression equation are

[1] Cf. Reinhard Fürstenberg und Joachim Scheide, Ansätze zur Inflationsprognose. Ein Beitrag über die voraussichtliche Entwicklung in der Bundesrepublik, Kieler Arbeitspapiere, Nr. 104, Kiel, Mai 1980, p.7-8, p.13-14.

Graph 1o:

GNP (1970 prices)



changes in the rate of expansion of M_1 and changes in the inflation rate (measured by the deflator for domestic demand). These variables explain the rate of change of domestic demand both by their simultaneous values and by their lagged values[1]. The probable development of exports and imports is added to the results for domestic demand in order to arrive at a forecast for real GNP.

73. The forecast for real GNP and for the GNP deflator imply an average increase of nominal GNP by about 6 p.c. in the 1980's, after 8.5 p.c. in the 1960's and 8.2 p.c. in the 1970's. Considering monetary policy as exogenous it is to be examined whether the implications for the income velocity are plausible. The income velocity will, ceteris paribus, be high when nominal interest rates are high and vice versa[2]. The expectations on the development of nominal interest rates are based on the hypothesis of a lagged adjustment of nominal interest rates on the inflation rate and on the expectation of a real interest rate in the 1980's that is on average somewhat higher than it was in the 1970's. A higher real rate of profit and a higher real rate of interest are a reflex of the expectation of depressed real wages and of repressed public claims on potential output. Graph 11 shows that income velocity and interest rates run in line with theory in the forecast period. The yield on fixed-interest bearing securities is used as a proxy for the three months' interbank rate (table 6 in the appendix).

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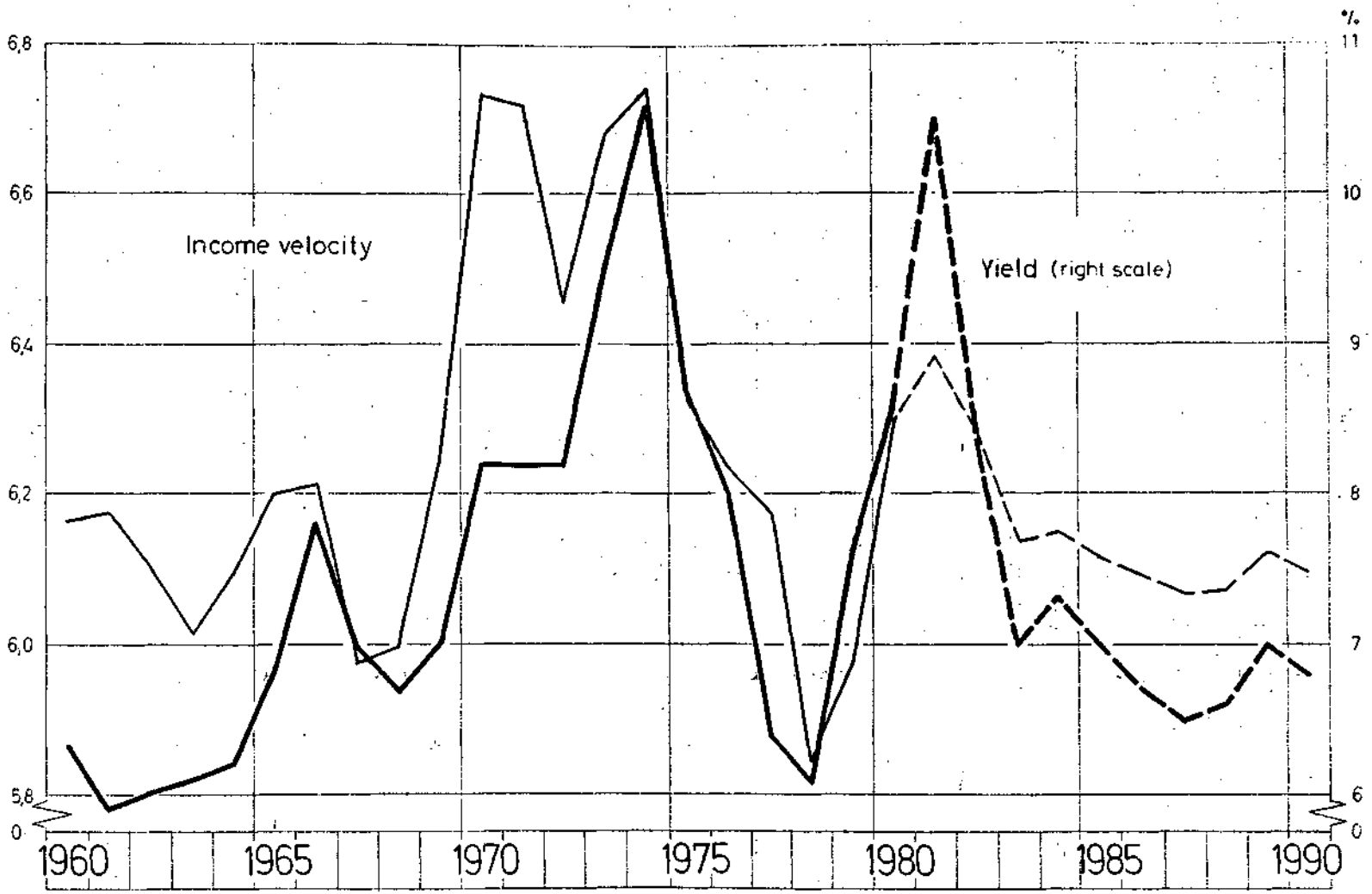
[1] Cf. Enno Langfeldt, Experiences in forecasting short-term economic activity in the Federal Republic of Germany with a single-equation regression model, unpublished paper, Kiel, 1981.

[2] As to the determinants of money demand see Harmen Lehment und Enno Langfeldt. Welche Bedeutung haben "Sonderfaktoren" für die Erklärung der Geldnachfrage in der Bundesrepublik Deutschland? Weltwirtschaftliches Archiv, Band 116, 1980, Heft 4, S. 669-684.

Graph 11:

Income velocity and yield on fixed interest securities



d) GNP and its components

74. Private consumption is expected to increase less than GNP in the 1980's. The reasons are a change in income distribution in favor of profits and an increasing share of households' expenditures for residential construction. The increase in the number of private households (table 5), especially the increasing share of households with a

Table 5: Private households by the age of the head of the households and by the size of the household[1]

Year / Age	1961	1970	1980	1985	1990
			Share in %		
up to 30 years	10.8	12.3	12.6	14.5	15.6
30 to 40 years	17.7	19.8	16.4	15.4	17.2
40 to 50 years	17.4	18.1	19.2	19.7	16.6
50 to 60 years	24.0	16.5	17.1	15.6	16.3
60 years or older	30.1	33.3	34.7	34.7	34.2
Total	100.0	100.0	100.0	100.0	100.0
up to 50 years	45.9	50.2	48.2	49.6	49.4
Size			1000		
Single person households	4005	5544	6938	7691	8473
Several persons households	15443	16466	15935	15610	15276
Total	19448	22009	22873	23301	23749

[1] Cf. Federal Statistical Office, Wirtschaft und Statistik, Heft 9, 1979, p. 649-651.

head in the age of 50 years or younger, is expected to lead to a relatively high demand for housing. Besides, demand will shift towards high quality housing - though in a weaker extent compared to the past. Finally, the increase of relative energy prices is seen to induce high investment expenditures of private households in order to meet energy conservation or energy substitution targets; this should be true even if the relative energy price decreases from the present exceptionally high level.

75. Investment expenditures of the firms probably will increase by 4 p.c. on average until 1990. The reasons are the expectation of higher profits because of wage restraint, the monetary policy being somewhat less erratic compared to the past, the resulting smaller variance of the inflation rate and the induced smaller degree of investors' uncertainty as to potential rates of return on investment in real capital. In addition, tax policy is expected to lead to improved incentives to save and to invest, e.g. by tax cuts in the field of the income tax and the property tax, by increasing the share of the VAT tax and the excise taxes or by improvements in the field of depreciation allowances.

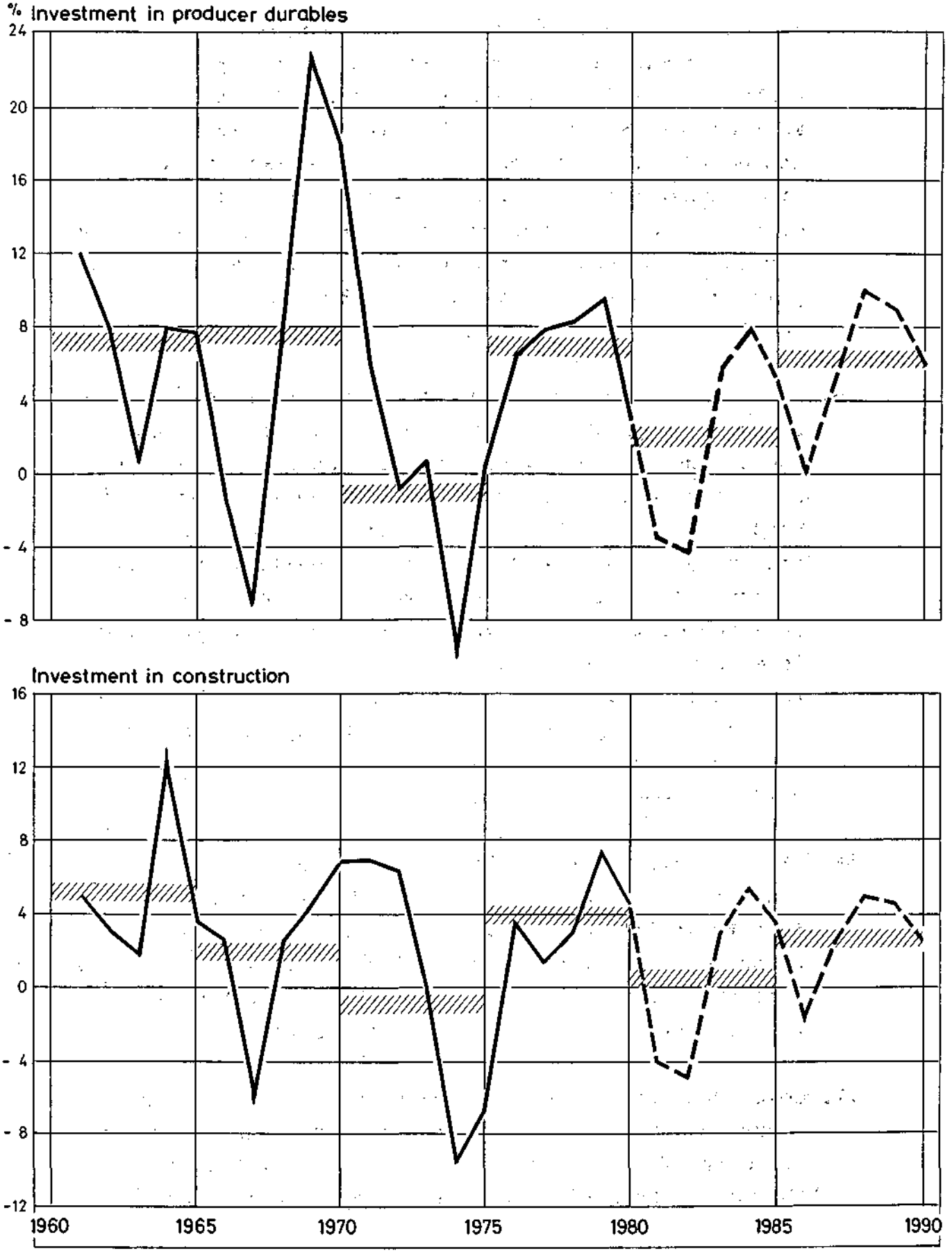
76. Investment in construction will increase by 1.5 p.c. on average until the end of the decade; the increase for investment in producer durables and equipment is expected to be some 4 p.c. on average, i.e. an increase which is a bit more favorable than in the 1970's, but somewhat less favorable than in the 1960's (graph 12).

77. German exports are determined by the level of economic activity abroad and by the relative competitive position of German firms. In addition, there are influences on the worldwide division of labor, e.g. by changes in the

Graph 12:

Investment in producer durables and construction (1970 prices)

% change from previous year and % change on average



rates of tariffs. The development of world income (cf. part C. I. of this paper), the expectation of a nearly constant real exchange rate from mid 1982 to the end of the decade and a - compared to the 1960's and the 1970's - decelerated increase in the rate of economic integration are foreseen to lead to an increase of German exports by some 4 p.c. on average (graph 13). The reasoning as to German imports is relatively similar to what is expected for German exports (graph 13). The elasticities of imports as to the development of GNP plus imports are shown in table 7 in the appendix.

78. A summary as to real GNP and its components is given by table 8 in the appendix.

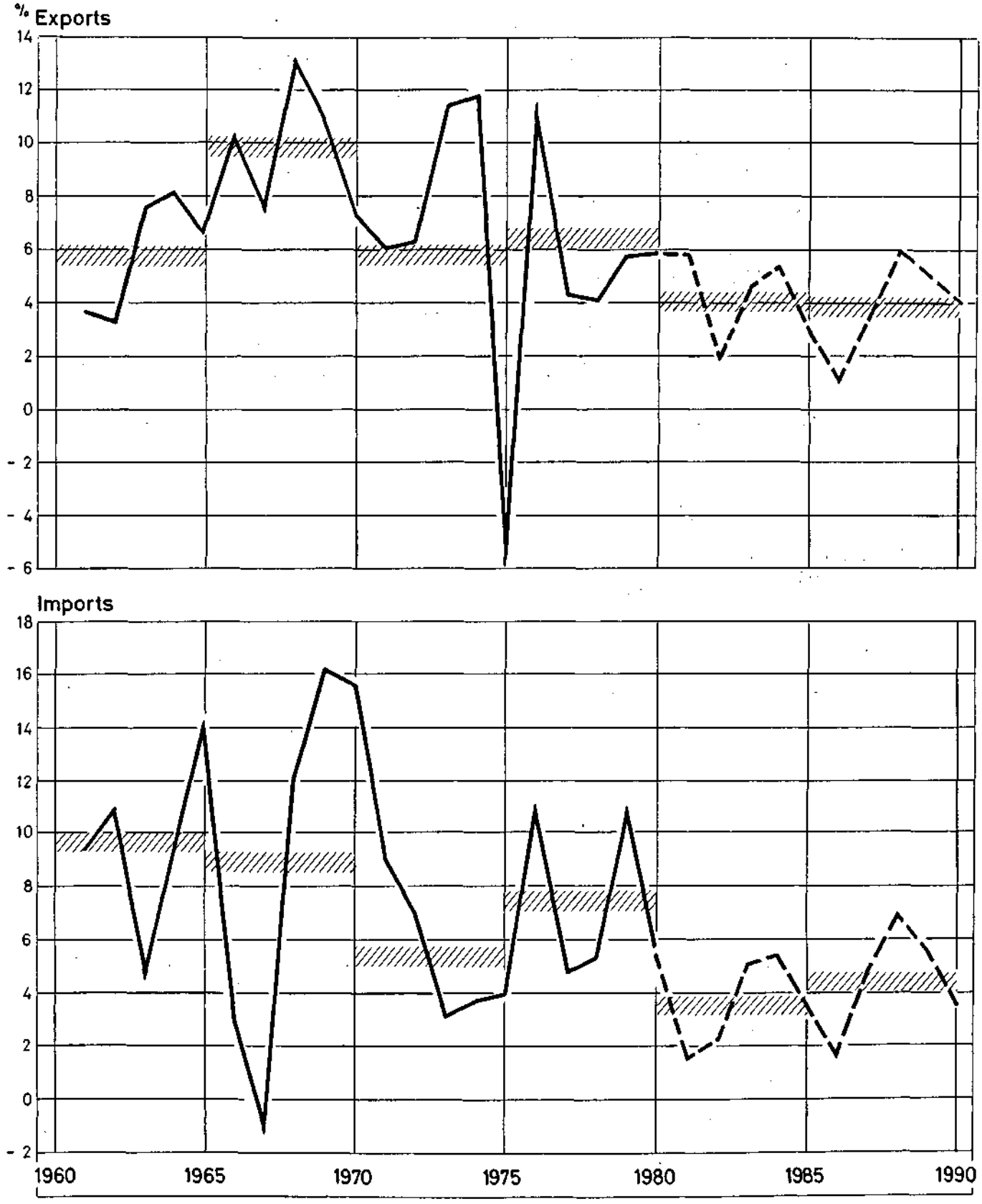
e) Employment and productivity

79. The labor market performance will be gloomy in the next years. The probable stance of economic policy as well as the sharply limited willingness of employers and unions to take adequately into consideration the high level of unemployment are expected to induce an only very slightly increasing demand for labor. Despite of downward pressures on the real wages as a result of an increasing labor supply and despite of the pressure on the participation rate of selected age groups, unemployment will probably go up in the next years (graph 14) due to an increasing labor supply concurrent with sharp constraints on the flexibility of real wages. Only in the end of the decade unemployment will decline and will be some 1 million in 1990 (table 9 in the appendix).
The unemployment rate (measured by the ratio of the number of unemployed to the number of persons employed including self-employed) will be 5 to 5.5 p.c. in the 1980's on an average.

Graph 13:

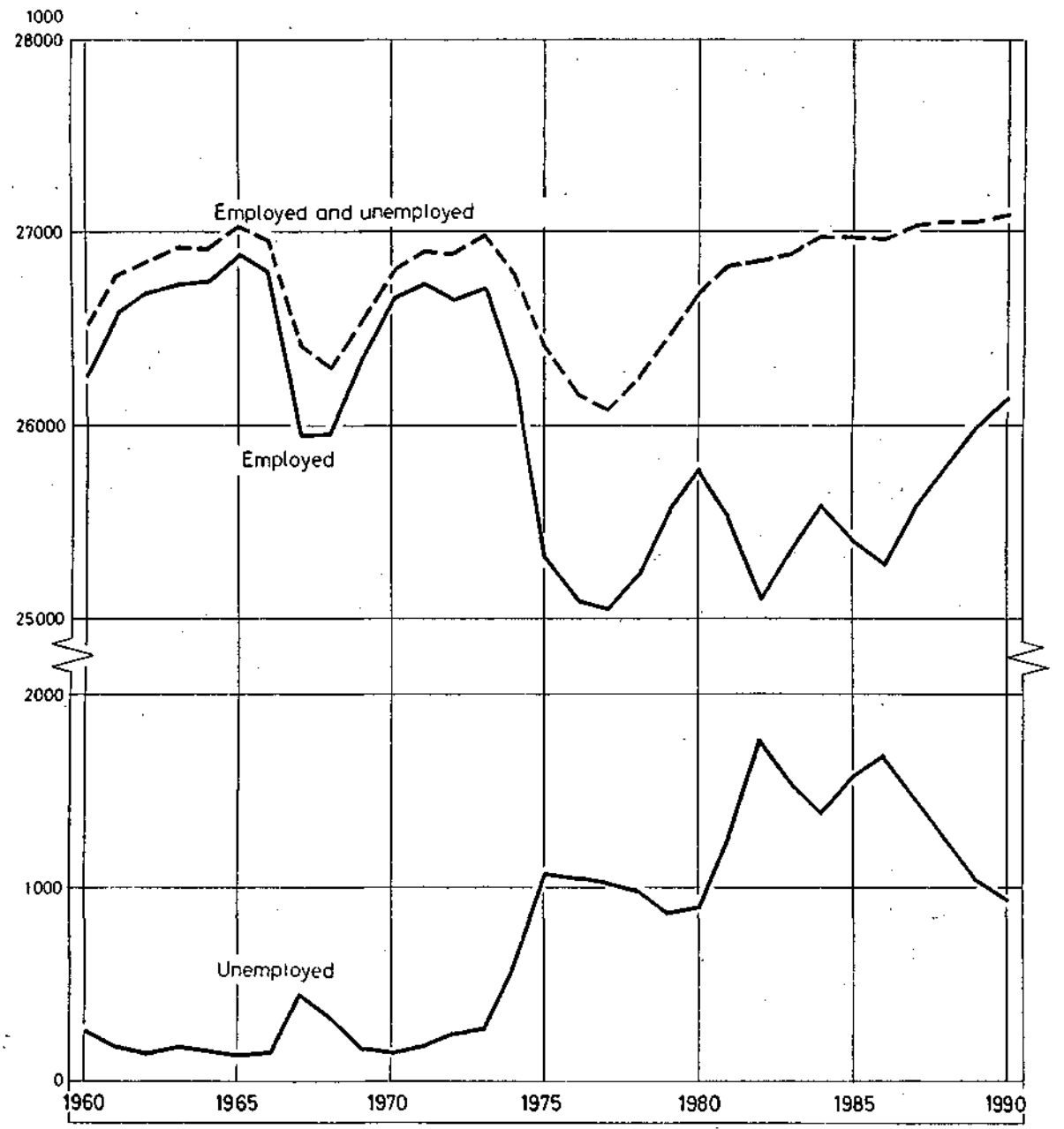
Exports and Imports (1970 prices)

% change from previous year and % change on average



Graph 14:

Employed and unemployed



80. The expectation on the productivity development in the 1980's, especially the expected deceleration of the increase of labor productivity is important for the labor market results just described. Though it seems to be correct that there is not any method of accurately forecasting labor productivity, some kind of a quantitative assessment has to be made. The arguments following were important in assessing the development of labor productivity.

81. Productivity (per person employed) increased by 4.5 p.c. on average in the 1960's and by 3 p.c. in the 1970's (graph 15). The deceleration is due to a lot of effects.

82. The deceleration in the increase of the capital stock during the 1970's seems to have been very important[1]. One reason for this may have been a crowding out of private investment by public sector borrowing. Another reason is the increase of relative energy prices favoring labor intensive production methods[2]. Finally inflation is an important source of reduced capital formation. "First, higher rates of inflation tend to reduce the purchasing power of fixed dollar depreciation expenses which results in lower real cash returns in future periods. Also, the U.S. tax system (the German system as well, A.B. and N.W.) treats interest payments made by firms as income to recipients and taxes it accordingly. When interest rates rise to compensate investors for the steady loss in purchasing power of original sums lent to firms, these receipts - which are necessary to maintain the real wealth of investors - are

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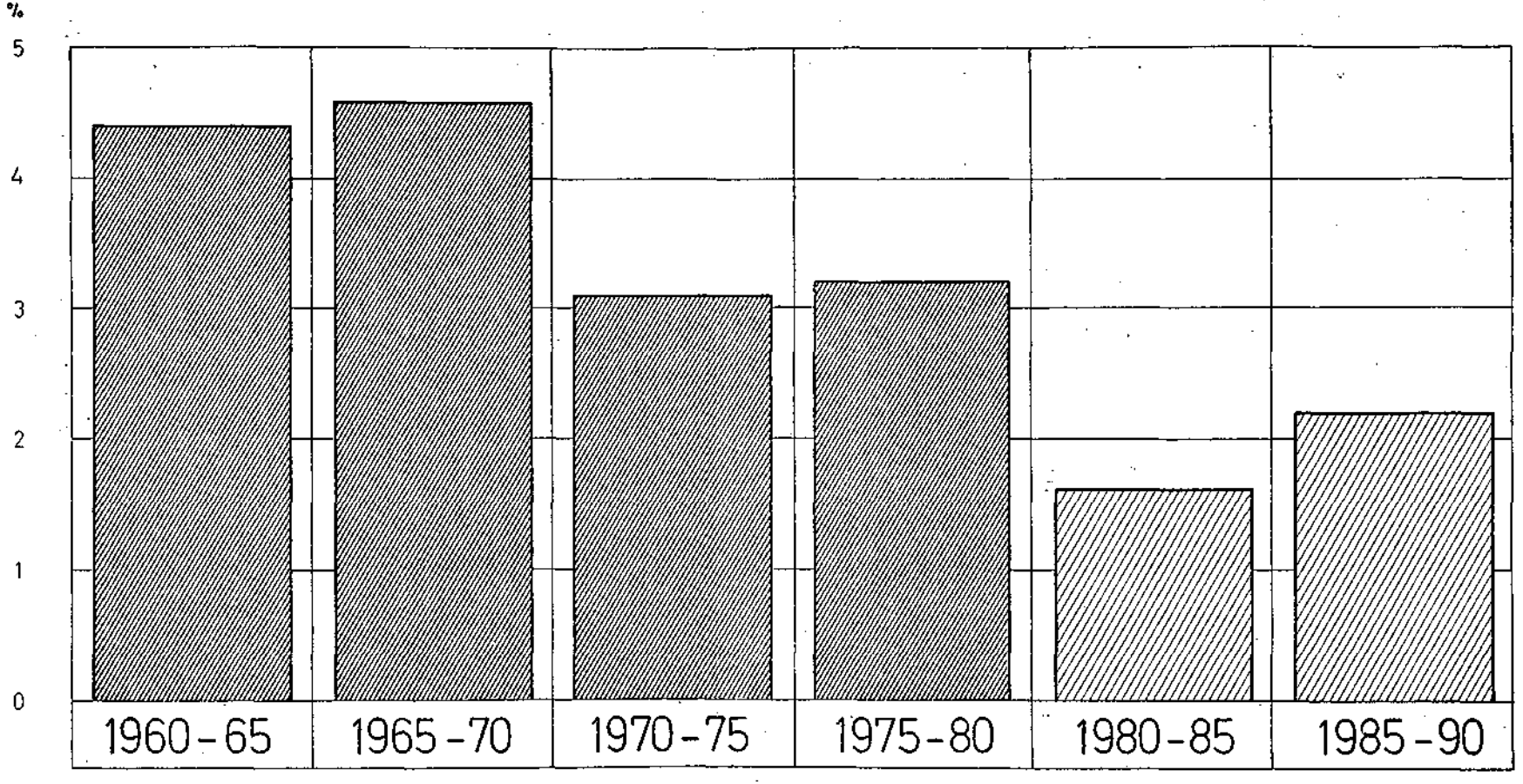
[1] Due to the higher relative energy prices the deceleration may even have been more pronounced than is indicated by the results of usual statistical measurement procedures. An increase in the share of investment for pollution abatement purposes is another argument in favor of a more pronounced deceleration.

[2] John A. Tatom, Energy prices and capital formation, Natural Resources Journal, October 1978, p. 877-897.

Graph 15:

GDP per person employed (1970 prices)

% change on average



erroneously treated as income. Consequently, higher before-tax real rates of return are required to compensate for these taxes, further reducing incentives for firms to raise investment funds. Finally, higher inflation rates tend to increase uncertainty about the future inflation rate. Consequently, investors and firms view the cash flows expected from investment projects as riskier and are more reluctant to invest"[1].

83. Apart from the weak capital formation the deceleration of the increase of productivity in the 1970's is due to a nearly stagnating share of research and development (R+D) expenditures. In the 1960's the share of R+D expenditures in GNP permanently increased. In the 1970's the increase of R+D activities decelerated due to the fact that the catching up process vis-à-vis other industrialized countries became less important[2].

84. To what extent the broader government regulations have compelled the private sector to work more, thereby hindering the increase in productivity is hard to determine. The same holds true for the qualitative changes in the supply of labor - perhaps due to the growing integration of women in the production process during the 1970's.

85. There seem to be only weak reasons for being pessimistic as to the development of productivity in the future, potential productivity may be large[3], but some groups in

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[1] John A Tatom, The productivity problem, Review of the Federal Reserve Bank of St. Louis, Vol. 61, No. 9, September 1979, p. 8.

[2] Gerhard Fels, Klaus-Dieter Schmidt und Mitarbeiter. Die deutsche Wirtschaft im Strukturwandel, Kieler Studien, Nr. 166, Tübingen, S. 65-67.

[3] Cf. K.-D. Schmidt, Das Produktivitätspotential der deutschen Wirtschaft, Die Weltwirtschaft, 1981, Heft 1, S. 56-73.

society seem to be inclined to vote against technological changes and their consequences. In addition, most of the factors which were influential in the 1970's will continue to play a role, at least during the next five years. However, some positive effects on productivity are expected. One is the somewhat less erratic monetary policy and its consequences on the inflation rate, especially on the variability of the inflation rate. Another is fiscal policy expected to lead to more incentives to invest than in the seventies. As a whole productivity is foreseen to increase by 2 p.c. on average in the 1980's; the development will be a bit more favorable in the end of the 1980's (graph 15).

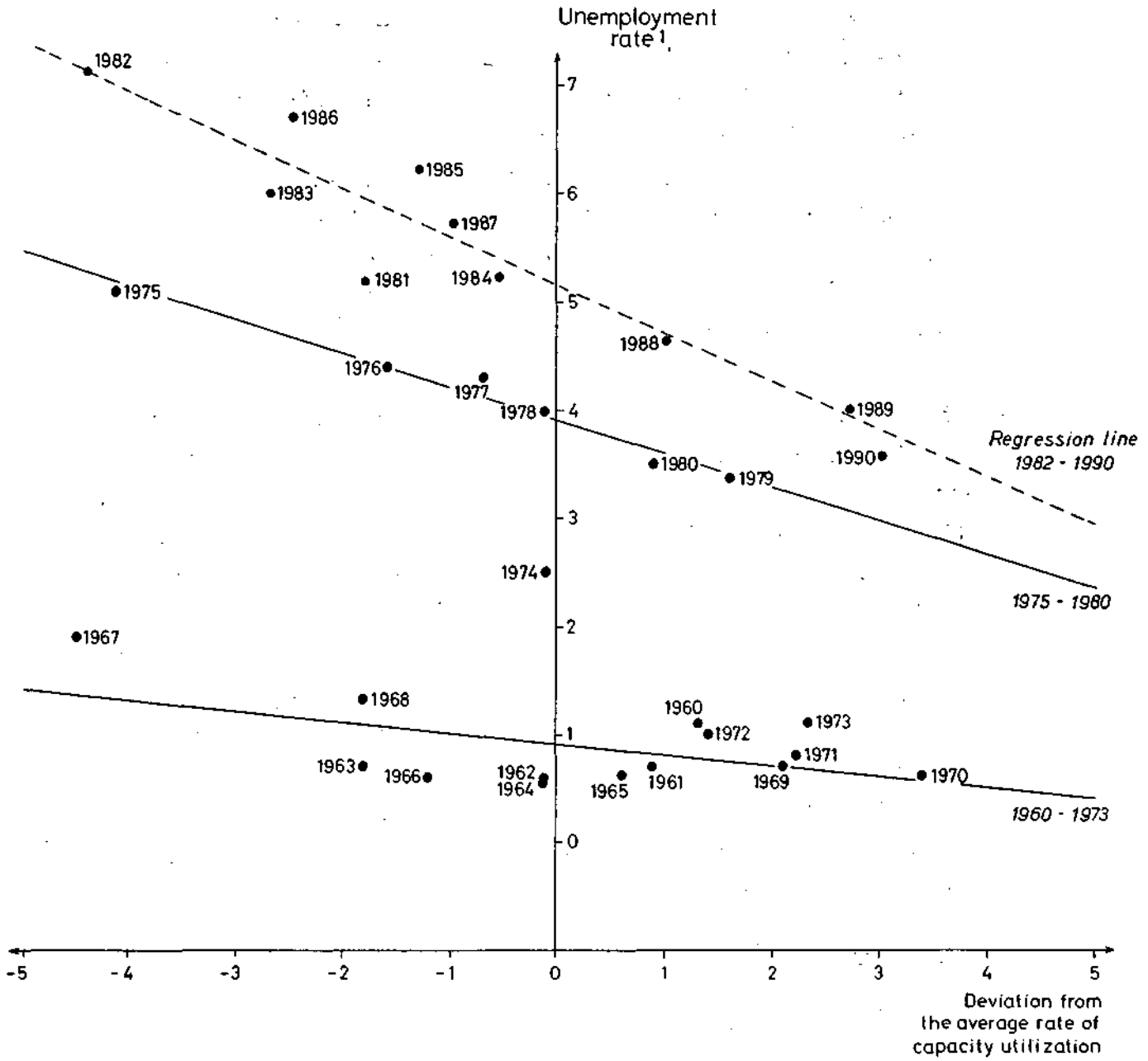
86. The underutilization of the factors of production, which results from the development described is pictured in graph 16. Three different periods can be distinguished: the years 1960-1973, the period 1975-1980 and the period 1982-1990. The years 1974 and 1981 cannot be clearly classified, they are transition phases. The three time periods can be differentiated, in that the level of the unemployment rate at full capacity utilization has grown or will grow in the course of time. This can be interpreted as an increase of the "natural" rate of unemployment in the period 1975-1980 from 1 p.c. to 4 p.c. It is expected, that the "natural" rate in the 1980's will increase to 5 p.c.

f) Income distribution

87. The real wage increase per employed decreased from 5 1/2 p.c. in the 60's to around 3 1/2 p.c. in the 70's. The rates for the nominal wage come to 8.5 p.c. and 8.6. p.c.. The rate of return on capital sank as a trend from

Graph 16:

Unemployment rate and capacity utilization rate



[1] *Unemployed (including one-third of short-time workers) as a percentage of labor force.* -

8 p.c. in 1960 to 5 p.c. in 1980[1]. This result is in clear contrast to comparable results for the USA[2]. In the United States the rate has remained constant in the last 20 years. The concrete value comes to 10.5 p.c. to 11 p.c. for corporate firms (excluding banks). Due to the smaller rates of return in remaining areas (e.g. agriculture), the rate for the total economy is somewhat lower.

88. The wage share increased from 61-63 p.c. in the 60's to 64-65 p.c. in the 70's (graph 17). The wage share clearly decreased after hitting its highest level in 1974/75; it will nearly reach this peak level again in the recession of 1981/82.

89. The wage share is expected to decrease somewhat in the next years; the cyclical fluctuations will be similar to those in the past. Towards the end of the decade, it could almost fall back to the level of the years 1970/71 (graph 17). Real wages may increase by 1-1 1/2 on average. With the expected development, the returns on capital will increase somewhat.

90. If one measures the real interest rate by the difference between the yield on fixed interest securities and the inflation rate of the same year (or alternatively, the average inflation rate in the current and the previous year), one obtains some 4 % for the 1960's and some 3 % for the 1970's. The development outlined for the current decade implies a somewhat higher real rate of interest than in the 1970's.

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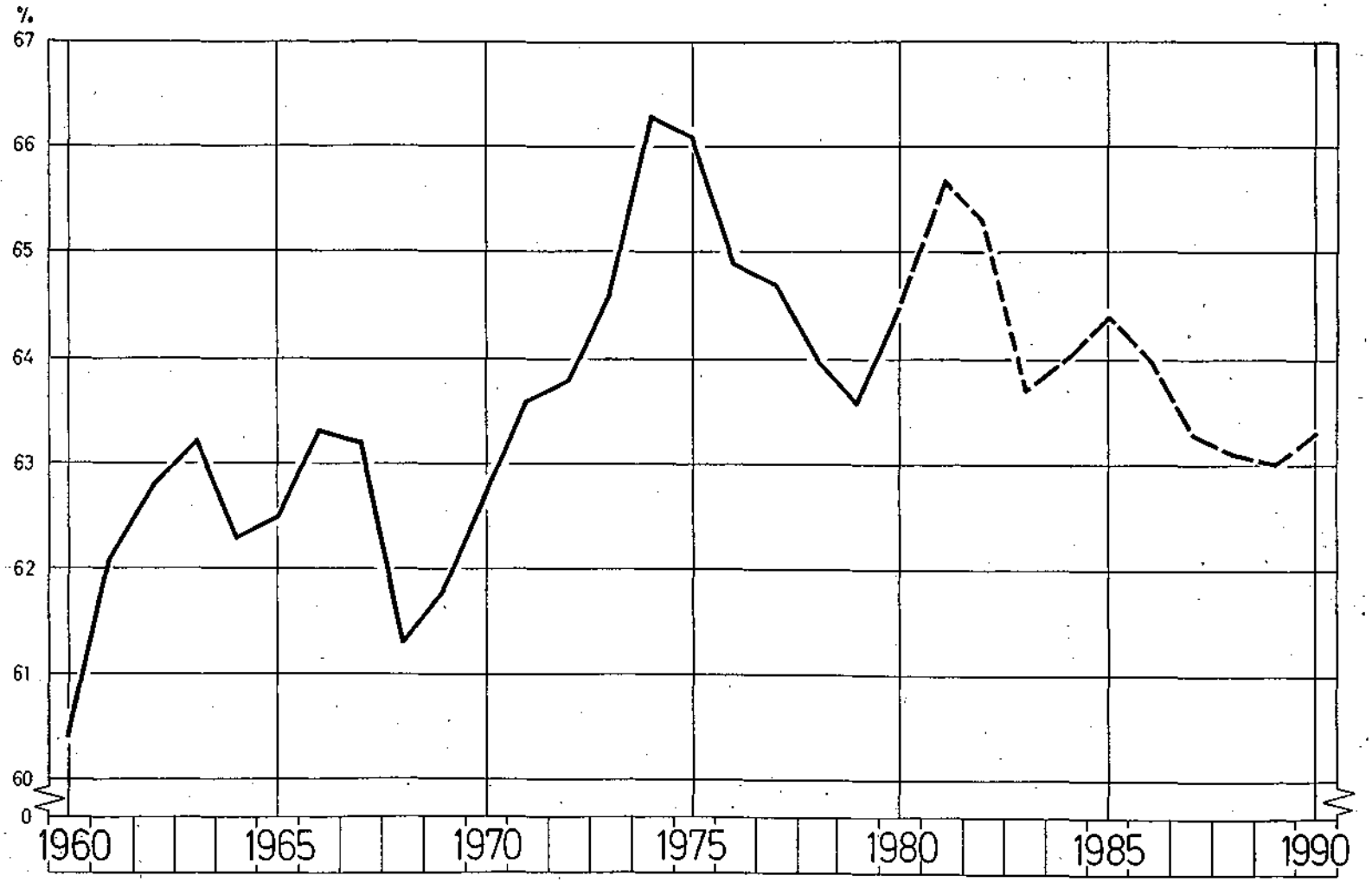
[1] The rate of return is measured according to the procedure used by the German "Council of Economic Advisors". The procedure is similar to the method used by Feldstein and Summers; cf. Martin Feldstein and Lawrence Summers, Is the Rate of Profit Falling? Brookings Papers on Economic Activity, 1977, p. 211-228.

[2] Cf. Feldstein and Summers, Is the Rate of Profit Falling?

Graph 17:

Wage share[1]



[1] *Adjusted for changes in the structure of labor force since 1960.*

III. Concluding comments on scenario I

91. If the expected economic policy is realized and if the hypotheses used are valid in the 1980's, then the development will be as outlined. The results may be very disillusioning. However, it has to be taken into consideration that the real GNP per capita is expected to increase by nearly 2 1/2 p.c. for the 1980's as a whole. In comparison to the 1970's (2.7 p.c.), this development seems satisfactory; compared to the 1960's (3.7 p.c.) the forecast implies a modest "deterioration" of some 1 p.c.. More importantly, however, the development of the 1980's can be influenced through economic and political decisions and through changes in the behaviour pattern of society. This is hardly true for the development to the end of 1982. However, for the time thereafter it may be true to a considerable extent. Scenario II outlines which economic policy and which behaviour patterns of unions and firms can bring about a more favorable development. The probable results are presented in the following section.

E. Scenario II: Economic development given optimal monetary and fiscal policy and optimal behaviour of unions and firms

92. Scenario II describes a development for the 1980's which could result if economic policy and management and labor concentrate on those economic targets over which they should have control in an adequate solution of the economic policy assignment problem. Scenario II reflects the assumption that demand management in the 1980's will be pursued in a way that increasingly less produces or strengthens the cycle; i.e. neo-conservative convictions will be carried through more and more in monetary and fiscal policy.

93. According to a similar monetary policy abroad, the Bundesbank is assumed to initiate a policy of stabilizing the price level by announcing money-supply targets without reservations and by simultaneously announcing a step-by-step deceleration of monetary expansion in the following years. M_1 is considered to be the optimal monetary target variable. M_1 is preferred to the central bank money supply because it shows changes in monetary policy impulses earlier than the central bank money supply. The reason is that the demand for non-interest bearing assets which are included in M_1, reacts directly to a change in the rate of return on financial assets in relation to the rate on real assets. Fluctuations in economic activity, however, arise above all from such shifts in the yields on assets. By choosing M_1 as a target variable, monetary policy can stabilize the economic development. This does not mean that there would not be cyclical fluctuations any longer. Impulses from economic policy shocks in the past as well as shocks in the real sector of the economy will lead to some cyclical fluctuations in the future, too.

94. In more detail, this means that monetary policy turns to a trend orientated course and permits a monetary expansion of about 7 p.c. at annual rate in the first year. After 1982, this rate of expansion should gradually be reduced to 4-5 % in order to arrive at price stability in the medium run. A stable monetary expansion by 4 to 5 p.c. per year is sufficient to finance an increase of GNP at a rate that is as high as the rate of increase of potential output; at the same time, changes in the efficiency of financial markets would have been adequately taken into account.

95. For the annual average change of M_1, the monetary expansion described means 5 p.c. for 1982 and 6.5 p.c. for 1983. In 1984 the rate of change for M_1 would be smaller than in 1983 (graph 18, table 10 appendix). The course of monetary policy in scenario II means that the inflation rate would be smaller than in scenario I throughout the forecast period. It guarantees that a stable price level will actually be achieved in the medium run. Towards the end of the decade, the rate of inflation could well be zero.

96. On the fiscal policy side, scenario II assumes that government expenditures (in 1970 prices) will increase between 1980 to 1990 by about 1 p.c. less per year than in scenario I (graph 19, table 11 appendix).

97. In scenario II, an increase of contractual wages is assumed, which is around 1 percentage point per year less than in scenario I, in order to have a larger contribution from wage policy to reducing unemployment. The (negative) difference between the increase of real wages and the increase of distributable productivity - which itself will be higher - is larger than in scenario I. Additionally, it is imputed in scenario II, that the wage structure will adapt to the productivity structure on a larger scale than in scenario I.

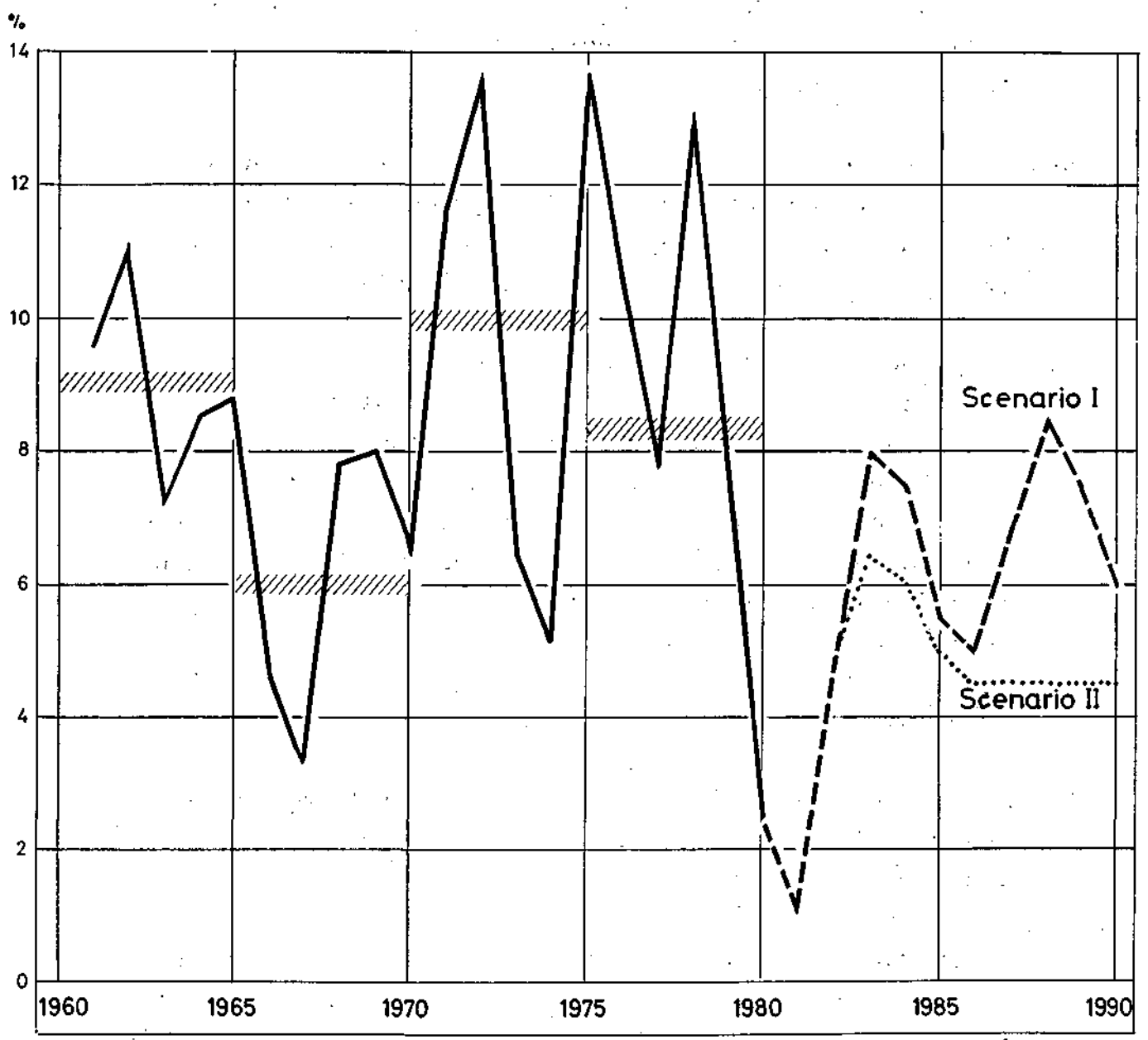
98. Finally scenario II purports a clearer determination in favor of deregulation, e.g. in the fields of housing, traffic, communication.

99. It is very difficult to deduce the consequences of the economic policy and the behavior assumed in scenario II since it is new in many respects. Above all it is difficult to get an idea over the duration of the adjustment process to the new structural conditions. The results presented here may only give some hints at the probable implications of scenario II.

Graph 18:

Money supply (M 1)

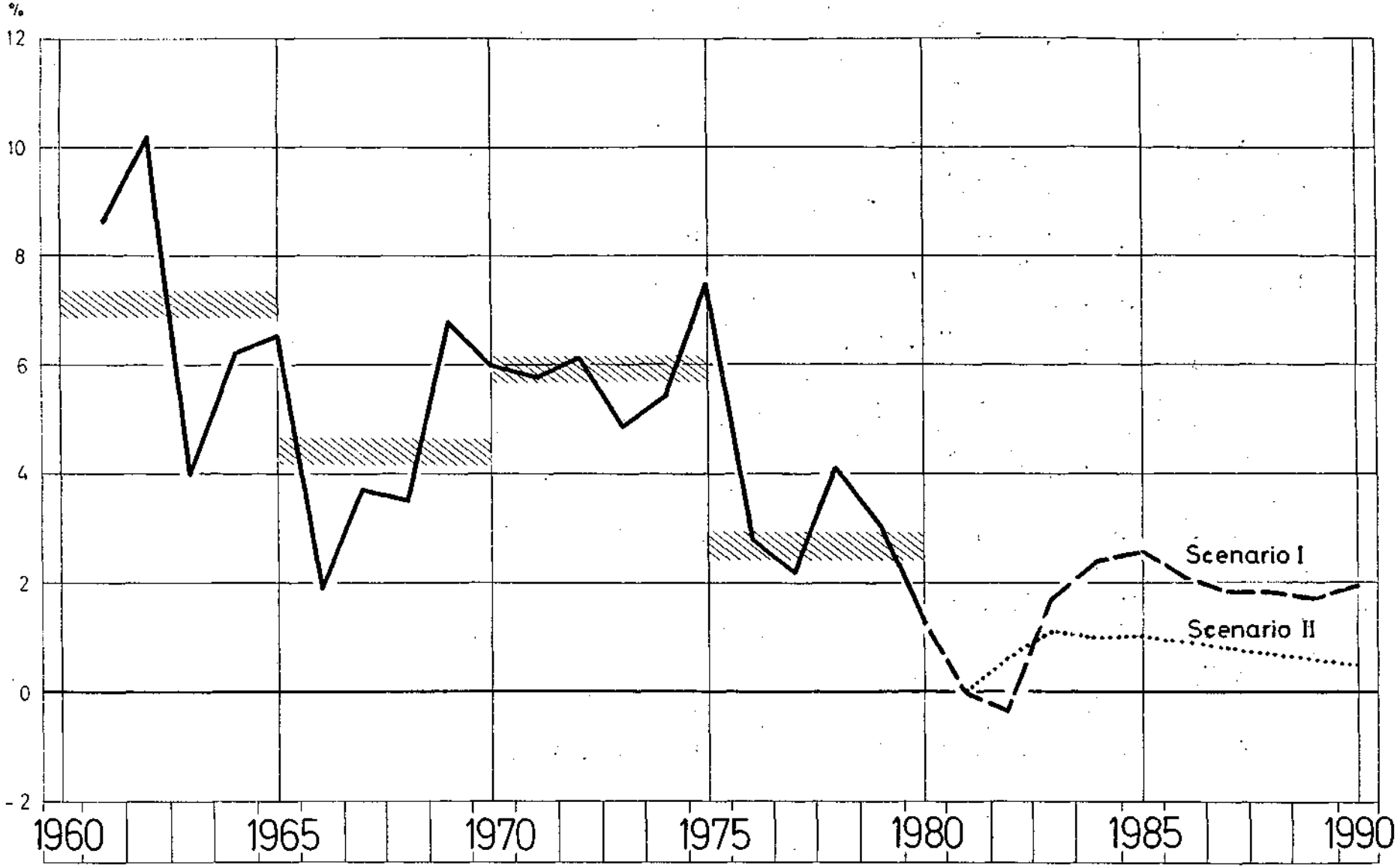
% change from previous year and % change on average



Graph 19:

Government purchases of goods and services plus government transfers[a]

% change from previous year and % change on average

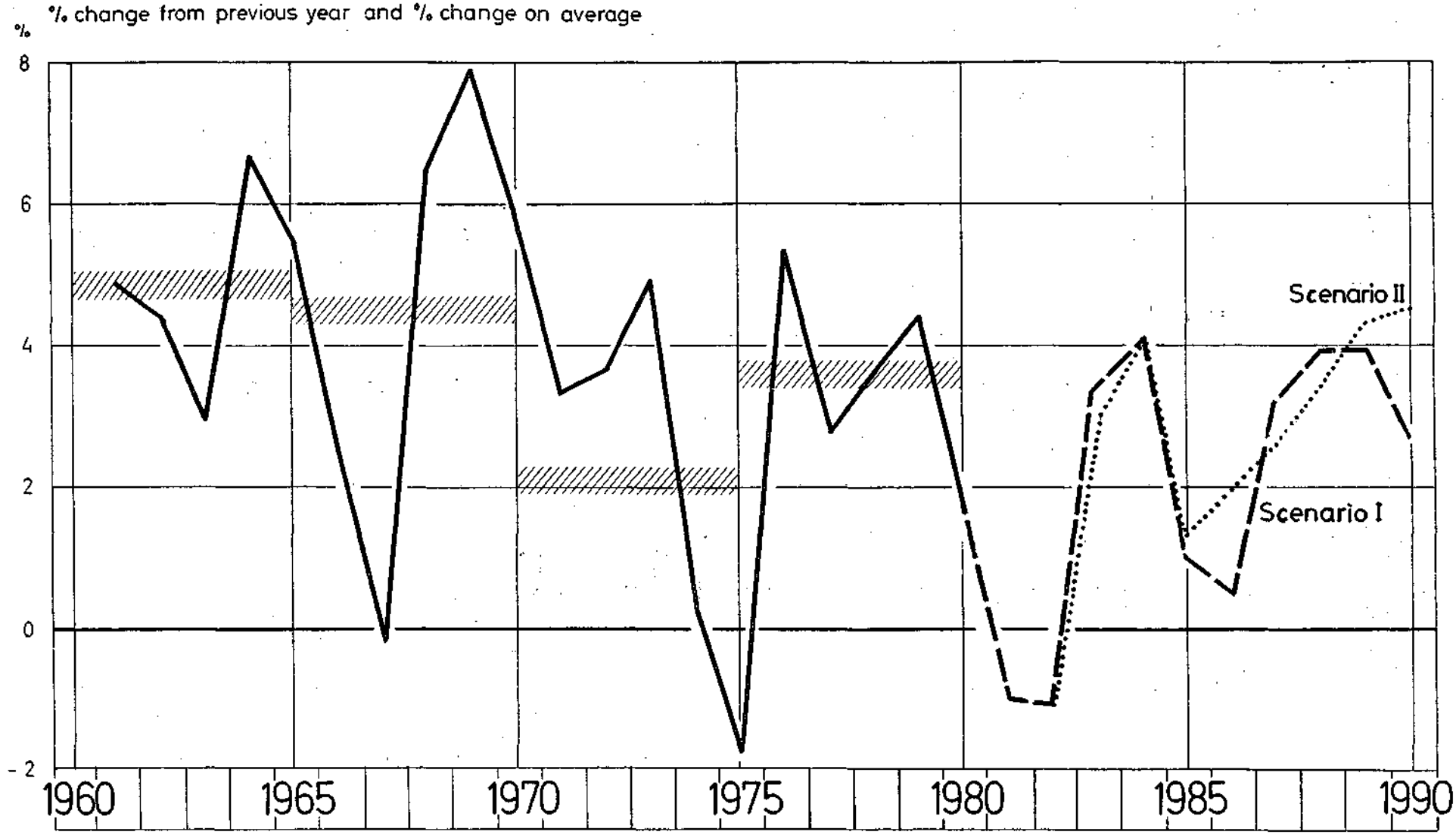


[a] *In 1970 prices; transfers deflated by the private consumption deflator.*

100. At the beginning of the forecast period, domestic demand in scenario II would develop somewhat less favorably than in scenario I as a result of the non-expansive but trend-oriented monetary and fiscal policy. In the medium run, however, economic growth would be somewhat stronger and cyclical fluctuations would be smaller than in scenario I. In the second half of the 1980's, the growth rate could come to around 3 1/2 p.c. per year which is approximately 1/2 p.c. per year more than in scenario I (graph 20, table 12 in appendix). An intensified investment activity in scenario II is decisive for this difference (table 13, appendix). The inflation rate would gradually decelerate and would tend to be zero towards the end of the decade (graph 21). The labor market situation would become worse in the coming years (1982/83 around 1.7 million unemployed) in scenario II, too. However, thereafter the development would be much more favorable. As a consequence of the moderate wage settlements and of the corrections in the wage structure as well as of the steady economic policy, unemployment would be reduced to around 1.3 million by the middle of the decade. After that, a decrease to 0.5 million in 1990 would be possible due to a smaller increase of the labor supply (graph 22, table 14 appendix).

Graph 2o:

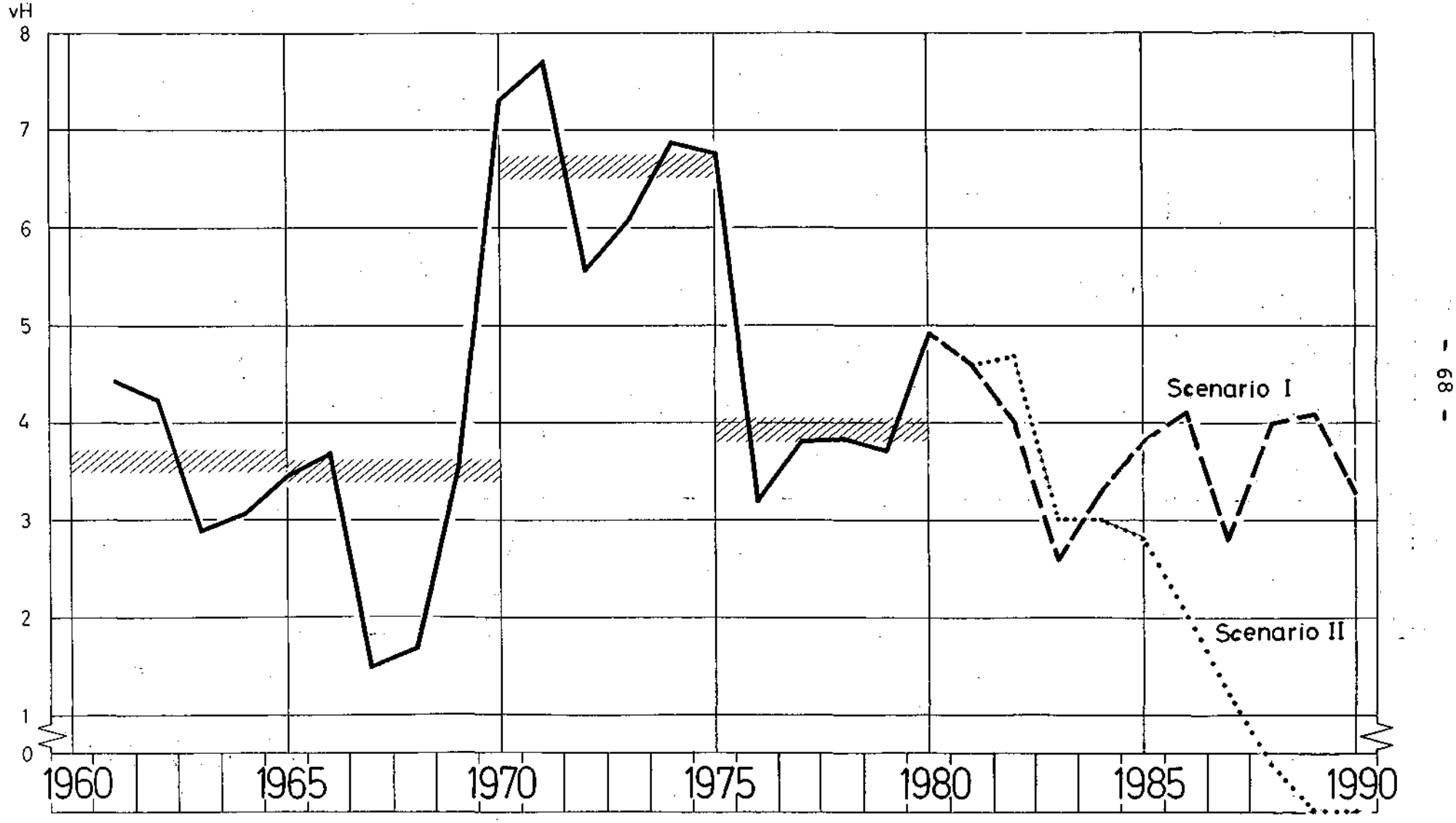
GNP (1970 prices)



Graph 21:

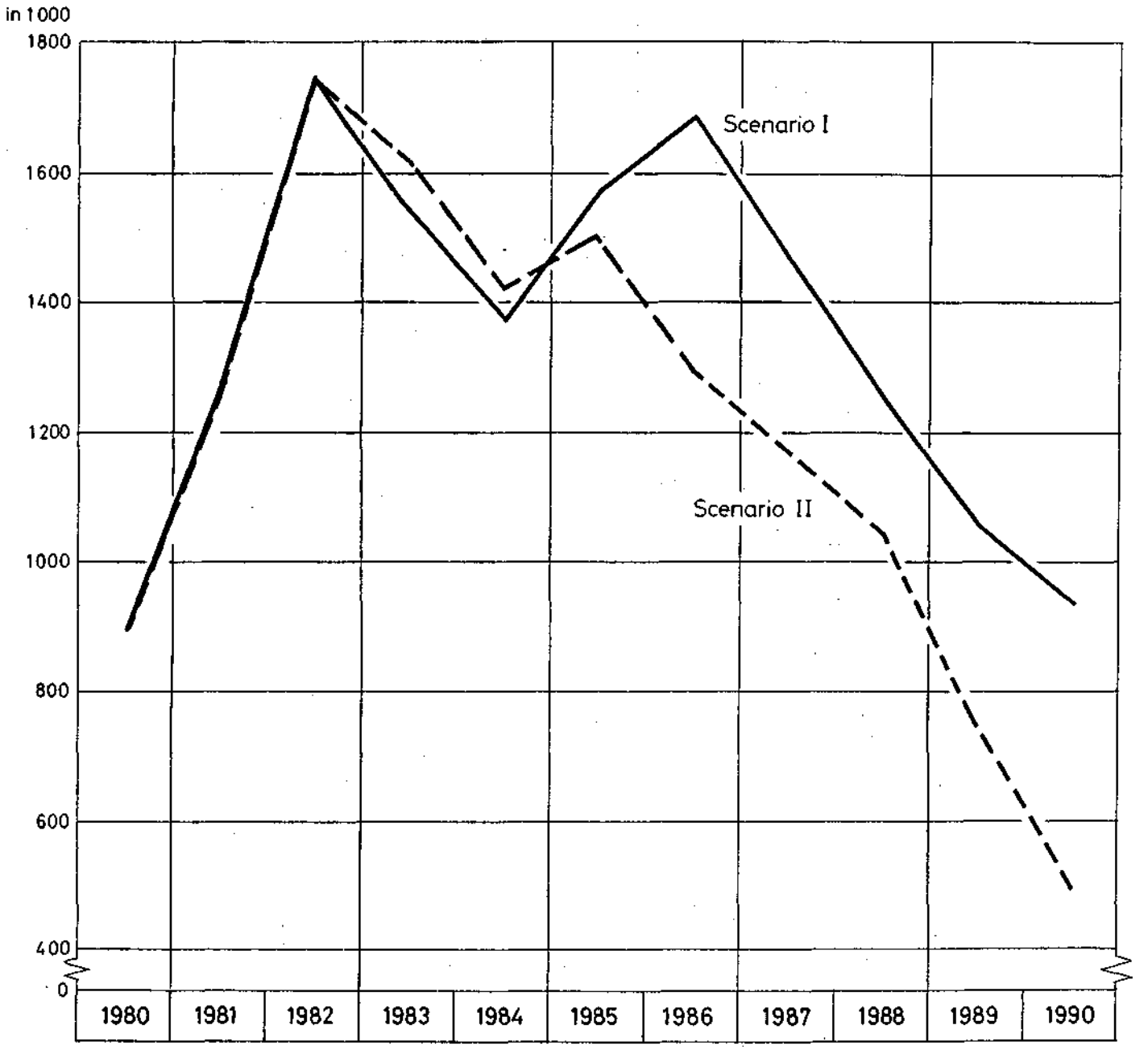
GNP deflator

% change from previous year and % change on average



Graph 22:

Number of unemployed in scenario I and scenario II



F. Appendix: Tables

Table 1: Monetary indicators, Scenario I

Period	M_1 [a]	Yield on bonds	Central bank money [a]	Exchange rate DM/US-$
1960	.	6.3	.	4.17
1961	9.6	5.9	.	4.02
1962	11.1	6.0	9.7	4.00
1963	7.2	6.1	7.9	3.99
1964	8.5	6.2	8.1	3.97
1965	8.8	6.8	9.6	3.99
1966	4.6	7.8	7.1	4.00
1967	3.2	7.0	5.2	3.99
1968	7.8	6.7	7.6	3.99
1969	8.0	7.0	10.6	3.92
1970	6.4	8.2	7.3	3.65
1971	11.6	8.2	10.4	3.48
1972	13.7	8.2	12.6	3.19
1973	6.4	9.5	10.6	2.66
1974	5.0	10.6	6.1	2.59
1975	13.7	8.7	7.8	2.46
1976	10.6	8.0	9.2	2.52
1977	7.8	6.4	9.0	2.32
1978	13.1	6.1	11.4	2.01
1979	8.0	7.6	9.0	1.83
1980	2.4	8.6	4.9	1.82
1981	1.0	10.5	4.4	2.25
1982	5.0	8.4	.	.
1983	8.0	7.0	.	.
1984	7.5	7.3	.	.
1985	5.5	7.0	.	1.70
1986	5.0	6.7	.	.
1987	7.0	6.5	.	.
1988	8.5	6.6	.	.
1989	7.5	7.0	.	.
1990	6.0	6.8	.	1.25
1960-65	9.0	6.2	.	.
1965-70	6.0	7.3	.	.
1970-75	10.0	8.9	.	.
1975-80	8.3	7.6	.	.
1980-85	5.4	8.1	.	.
1985-90	6.8	6.8	.	.

[a] % change from previous year.

Table 2: Indicators[a] of fiscal policy, Scenario I

Period	Purchases of goods and services (1970 prices)	Government transfers (deflated by the private consumption deflator)	Purchases plus transfers
1961	7.3	10.4	8.6
1962	11.5	8.5	10.2
1963	8.2	-1.7	4.0
1964	5.0	8.0	6.2
1965	4.2	10.0	6.5
1966	2.0	1.8	1.9
1967	1.0	7.5	3.7
1968	1.3	6.5	3.5
1969	5.9	8.0	6.8
1970	6.1	5.8	6.0
1971	5.0	6.8	5.8
1972	3.3	9.4	6.1
1973	4.3	5.4	4.8
1974	4.9	6.0	5.4
1975	3.1	12.4	7.5
1976	1.1	4.7	2.8
1977	-0.4	4.7	2.1
1978	4.4	3.8	4.1
1979	3.7	2.2	3.0
1980	2.8	-0.2	1.3
1981	0.0	0.0	0.0
1982	-0.5	-0.2	-0.3
1983	2.6	0.8	1.7
1984	2.7	2.1	2.4
1985	2.5	2.5	2.5
1986	1.8	2.5	2.1
1987	1.5	2.0	1.8
1988	2.0	1.5	1.8
1989	2.0	1.5	1.7
1990	1.8	2.0	1.9
1960-65	7.2	6.9	7.1
1965-70	3.2	5.9	4.4
1970-75	4.1	8.0	5.9
1975-80	2.3	3.0	2.7
1980-85	1.5	1.0	1.2
1985-90	1.8	1.9	1.9

[a] % change from previous year.

Table 3: Potential labor force (in 1000), Scenario I

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1998	1990
Male														
15 up to 30 years	4472	4594	4709	4737	4792	4855	4920	4974	4997	4998	4970	4907	4814	4704
30 up to 55 years	9018	9049	9109	9150	9177	9192	9189	9178	9177	9195	9245	9318	9375	9430
55 up to 60 years	1037	1110	1145	1140	1144	1161	1211	1277	1326	1349	1346	1316	1302	1285
60 up to 65 years	535	419	347	329	344	368	396	409	407	402	409	426	449	476
65 up to 70 years	175	152	143	128	106	84	67	57	54	56	57	57	54	52
Total	15237	15324	15453	15484	15563	15660	15783	15895	15961	16000	16027	16024	15994	15967
Female														
15 up to 30 years	3407	3479	3603	3662	3707	3751	3786	3813	3820	3810	3778	3720	3620	3500
30 up to 45 years	3065	3061	3164	3155	3136	3107	3068	3018	2958	2914	2910	2932	2965	2999
45 up to 60 years	2565	2554	2570	2569	2559	2559	2581	2613	2651	2684	2693	2684	2676	2669
60 up to 65 years	234	185	154	140	146	154	159	158	149	135	123	114	105	97
65 up to 70 years	118	110	103	96	86	74	62	54	51	54	58	61	61	62
Total	9389	9389	9594	9622	9634	9645	9656	9656	9629	9597	9562	9511	9427	9327
Male and Female														
15 up to 70 years	24626	24713	25047	25106	25197	25305	25439	25551	25590	25597	25589	25535	25421	25294

Table 4: Prices - % change from previous year, Scenario I

Period	Deflator for domestic demand[a]	Consumer price index	GNP deflator
1961	3.9	.	4.4
1962	4.1	.	4.2
1963	3.2	2.9	2.9
1964	2.9	2.3	3.0
1965	3.7	3.3	3.4
1966	3.5	3.5	3.7
1967	1.1	1.7	1.5
1968	2.0	1.7	1.7
1969	3.5	1.9	3.6
1970	6.6	3.3	7.3
1971	7.2	5.2	7.7
1972	5.3	5.6	5.6
1973	7.1	7.0	6.1
1974	7.9	7.0	6.9
1975	5.7	6.0	6.8
1976	3.8	4.3	3.2
1977	3.8	3.7	3.8
1978	3.1	2.7	3.8
1979	4.4	4.1	3.7
1980	6.1	5.5	4.9
1981	5.5	5.9	4.5
1982	3.9	4.4	4.7
1983	2.6	2.9	2.9
1984	3.4	3.2	3.3
1985	3.7	3.6	3.8
1986	4.0	4.2	4.1
1987	2.8	3.3	2.8
1988	4.2	3.8	4.0
1989	4.2	4.0	4.1
1990	3.0	3.2	3.3
1960-65	3.6	2.8	3.6
1965-70	3.4	2.4	3.5
1970-75	6.7	6.1	6.6
1975-80	4.2	4.1	3.9
1980-85	3.8	4.0	3.9
1985-90	3.6	3.7	3.7

[a] GNP minus net exports (NIA).

Table 5: Deflators according to NIA and terms of trade
- % change on average, Scenario I

Period	GNP minus net exports	Terms of trade[a]	GNP deflator
1960-1965	3.6	2.3	3.6
1965-1970	3.4	1.3	3.5
1970-1975	6.7	-0.1	6.6
1975-1980	4.2	-2.3	3.9
1980-1985	3.8	0.0	3.9
1985-1990	3.6	0.0	3.7
1960-1970	3.5	1.8	3.6
1970-1980	5.4	-1.2	5.2
1980-1990	3.7	0.0	3.8
1960-1980	4.4	0.3	4.4
1960-1990	4.2	0.2	4.2

[a] Index of export unit values divided by index of import unit values.

Table 6: Money supply, income velocity and yield bonds, Scenario I

Period	M_1 [a]	Income velocity [b]	Yield on bonds
1960	.	6.16	6.3
1961	9.6	6.18	5.9
1962	11.1	6.11	6.0
1963	7.2	6.02	6.1
1964	8.5	6.10	6.2
1965	8.8	6.20	6.8
1966	4.6	6.21	7.8
1967	3.2	5.98	7.0
1968	7.8	6.00	6.7
1969	8.0	6.25	7.0
1970	6.4	6.73	8.2
1971	11.6	6.72	8.2
1972	13.7	6.46	8.2
1973	6.4	6.69	9.5
1974	5.0	6.74	10.6
1975	13.7	6.32	8.7
1976	10.6	6.23	8.0
1977	7.8	6.17	6.4
1978	13.1	5.84	6.1
1979	8.0	5.98	7.6
1980	2.4	6.30	8.6
1981	1.0	6.42	10.5
1982	5.0	6.28	8.4
1983	8.0	6.17	7.0
1984	7.5	6.18	7.3
1985	5.5	6.14	7.0
1986	5.0	6.12	6.7
1987	7.0	6.09	6.5
1988	8.5	6.10	6.6
1989	7.5	6.15	7.0
1990	6.0	6.12	6.8
1960-1965	9.0	6.13	6.2
1965-1970	6.0	6.23	7.3
1970-1975	10.0	6.61	8.9
1975-1980	8.3	6.14	7.6
1980-1985	5.4	6.25	8.1
1985-1990	6.8	6.12	6.8
1960-1970	7.5	6.18	6.7
1970-1980	9.2	6.38	8.2
1980-1990	6.1	6.19	7.5

[a] % change from previous year. - [b] Nominal GNP minus net exports.

Table 7: Imports and import elasticity, **Scenario I**

Period	Real GNP plus real imports	Import elasticity	Real imports
1960-1965	5.5	1.75	9.6
1965-1970	5.2	1.69	8.8
1970-1975	2.6	2.04	5.3
1975-1980	4.4	1.70	7.5
1980-1985	1.8	2.00	3.6
1985-1990	3.2	1.38	4.4
1960-1970	5.3	1.74	9.2
1970-1980	3.5	1.83	6.4
1980-1990	2.5	1.60	4.0

Table 8: Real GNP and its components[a] (1970 prices), Scenario I

Period	Private consumption	Government consumption	Investment in machinery and equipment	Investment in construction	Exports	Imports	GNP
1961	6.0	6.5	12.0	4.9	3.6	9.3	4.9
1962	5.4	10.4	8.0	2.9	3.2	10.9	4.4
1963	2.9	6.7	0.5	1.6	7.6	4.5	3.0
1964	5.0	1.1	8.0	12.9	8.1	9.0	6.6
1965	6.9	5.1	7.7	3.5	6.5	14.2	5.5
1966	2.9	2.4	-1.2	2.4	10.3	2.9	2.5
1967	1.0	3.6	-7.4	-6.5	7.3	-1.4	-0.1
1968	4.5	0.1	7.3	2.5	13.3	12.1	6.5
1969	7.9	5.1	23.0	4.3	10.9	16.2	7.9
1970	7.3	4.6	17.7	6.7	7.2	15.5	5.9
1971	5.2	6.3	5.9	6.8	6.1	8.9	3.3
1972	4.0	4.6	-1.0	6.3	6.4	6.9	3.6
1973	2.5	5.5	0.8	-0.2	11.5	3.1	4.9
1974	0.3	4.3	-10.2	-9.8	11.8	3.6	0.4
1975	3.1	4.5	0.4	-6.9	-5.9	3.9	-1.8
1976	3.4	2.0	6.5	3.6	11.5	11.1	5.3
1977	3.5	0.5	7.7	1.3	4.3	4.7	2.8
1978	4.0	4.2	8.2	2.9	4.1	5.2	3.6
1979	3.3	3.3	9.5	7.6	5.8	11.0	4.4
1980	1.7	2.6	2.9	4.4	5.9	5.8	1.8
1981	-1.4	1.7	-3.5	-4.1	5.8	1.4	-1.0
1982	-0.3	0.8	-4.5	-5.0	1.9	2.3	-1.1
1983	2.3	1.6	6.0	2.9	4.6	5.1	3.2
1984	3.2	2.4	8.0	5.5	5.5	5.5	4.2
1985	0.6	2.1	5.0	3.5	3.0	3.5	1.0
1986	1.0	2.1	0.0	-2.0	1.0	1.5	0.5
1987	3.8	1.6	5.0	2.5	3.5	4.8	3.2
1988	2.6	2.0	10.0	5.0	6.0	7.0	3.9
1989	3.4	1.9	9.0	4.5	5.0	5.5	3.9
1990	2.7	1.8	6.0	2.5	4.0	3.5	2.7
1960-65	5.2	5.9	7.1	5.1	5.8	9.6	4.9
1965-70	4.7	3.1	7.3	1.8	9.8	8.8	4.5
1970-75	3.0	5.0	-1.0	-1.0	5.8	5.3	2.1
1975-80	3.2	2.5	6.9	3.9	6.3	7.5	3.6
1980-85	0.9	1.7	2.0	0.5	4.1	3.6	1.2
1985-90	2.7	1.9	5.9	2.5	3.9	4.4	2.8

[a] % change from previous year and % change on average.

Table 9: Population, potential labor force, employed and unemployed persons (in 1000); Scenario I

Year	Population	Potential labor force[a]			Employed persons	Unemployed persons	
		Germans	Foreigners	Total		registered	non-registered
1970	60 651	25 010	.	.	26 668	149	0
1971	61 284	24 872	.	.	26 725	185	92
1972	61 669	24 763	.	.	26 655	246	147
1973	61 976	24 639	2 502	27 141	26 712	273	156
1974	62 054	24 528	2 475	27 003	26 215	582	206
1975	61 829	24 515	2 362	26 877	25 323	1 074	480
1976	61 531	24 556	2 211	26 767	25 088	1 060	619
1977	61 400	24 626	2 137	26 763	25 044	1 030	689
1978	61 327	24 713	2 120	26 833	25 230	993	610
1979	61 359	25 047	2 220	27 267	25 573	876	818
1980	61 566	25 106	2 290	27 396	25 795	889	712
1981	61 433	25 197	2 280	27 477	25 537	1 265	675
1982	61 248	25 305	2 290	27 595	25 099	1 750	746
1983	61 053	25 439	2 300	27 739	25 333	1 540	866
1984	60 864	25 551	2 310	27 861	25 606	1 376	879
1985	60 679	25 590	2 320	27 910	25 406	1 578	926
1986	60 499	25 597	2 330	27 927	25 282	1 693	952
1987	60 319	25 589	2 340	27 929	25 577	1 458	894
1988	60 141	25 535	2 350	27 885	25 800	1 251	834
1989	59 961	25 421	2 360	27 781	25 998	1 052	731
1990	59 782	25 290	2 370	27 660	26 142	941	577

[a] 1970 to 1976 data according to the Institut für Arbeitsmarkt- und Berufsforschung; 1976 to 1990 data according to own calculations.

Table 10: Monetary indicators, Scenario II

Period	M_1^a	Yield on bonds	Exchange rate DM/$
1981	1.0	10.5	2.25
1982	5.0	8.4	.
1983	6.5	7.2	.
1984	6.0	7.0	.
1985	5.0	6.5	1.70
1986	4.5	6.0	.
1987	4.5	5.0	.
1988	4.5	4.5	.
1989	4.5	4.0	.
1990	4.5	3.8	1.25
1980-1985	4.7	8.0	.
1985-1990	4.5	5.0	.

[a] % change over previous year and % change on average.

Table 11: Government[a] purchases of goods and services and government[a] transfers; Scenario II - % change from previous year and % change on average

Period	Government purchases of goods and services (1970 prices)	Government transfers deflated by the private consumption deflator	Purchases plus transfers
1981	0.0	0.0	0.0
1982	1.3	0.0	0.6
1983	1.6	0.5	1.1
1984	1.5	0.5	1.0
1985	1.4	0.5	1.0
1986	1.3	0.5	0.9
1987	1.1	0.4	0.8
1988	1.1	0.3	0.7
1989	1.0	0.2	0.6
1990	1.0	0.0	0.5
1980-1985	1.2	0.3	0.7
1985-1990	1.1	0.3	0.7
1980-1990	1.1	0.3	0.7

[a] Including social insurance.

Table 12: Real GNP and GNP deflator, Scenario II
- % change from previous year and % change on average

Period	Real GNP	GNP deflator
1981	-1.0	4.5
1982	-1.1	4.7
1983	3.0	3.0
1984	4.1	3.0
1985	1.3	2.8
1986	2.0	2.0
1987	2.6	1.2
1988	3.4	0.5
1989	4.3	0.0
1990	4.5	0.0
1980-1985	1.2	3.6
1985-1990	3.4	0.7
1980-1990	2.3	2.2

Table 13: Real GNP and its components, Scenario II
- % change from previous year and % change on average

Period	Private consumption	Government consumption	Investment in machinery and equipment	Investment in construction	Exports	Imports	GNP
1981	-1.4	1.7	-3.5	-5.5	4.9	0.0	-1.0
1982	-0.2	0.8	-4.5	-5.0	1.4	2.0	-1.1
1983	2.0	1.3	5.5	4.3	5.5	6.7	3.0
1984	3.2	1.3	9.6	6.7	5.6	5.7	4.1
1985	0.8	1.2	4.5	2.6	3.6	3.9	1.3
1986	2.5	1.1	0.9	1.5	1.3	1.4	2.0
1987	3.0	1.0	2.5	2.8	4.0	4.1	2.6
1988	2.0	1.0	10.5	5.8	6.4	6.7	3.4
1989	3.7	1.0	9.5	5.6	5.5	5.6	4.3
1990	3.6	1.0	12.8	4.9	4.4	4.9	4.5
1980-1985	0.9	1.3	2.2	0.5	4.2	3.6	1.2
1985-1990	2.9	1.0	7.1	4.1	4.3	4.5	3.4
1980-1990	1.9	1.1	4.6	2.3	4.3	4.1	2.3

Table 14: Number of unemployed in Scenario I and Scenario II (in 1000)

Year	Unemployed	
	Scenario I	Scenario II
1980	889	889
1981	1265	1265
1982	1750	1750
1983	1540	1620
1984	1376	1420
1985	1578	1500
1986	1693	1300
1987	1458	1170
1988	1251	1040
1989	1052	750
1990	941	490