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Study carried out by a Committee of independent experts
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FOREWORD

A European Conference on Social Security was organized by the Commission of the European Economic Community, with the co-operation of the High Authority of the European Coal and Steel Community and the Commission of the European Atomic Energy Community, and held in Brussels in December 1962. In the course of the preparatory work for the Conference, and during the conference itself, it was found necessary to resituate social security in the more general context in which it is developing, that of the economy, since no thorough study at Community level had yet been made in this field.

The conclusions of two of the main Working Parties of the Conference—"financing" and "benefits"—demonstrated this need, which was particularly strongly felt by the representatives of employers and workers. Their concern was shared by the senior government officials called together by the EEC Commission on 22 October 1963 to examine a programme of work for promoting the harmonization of social security systems.

In view of these various desires, and with the conviction that it would be advisable to obtain a thorough knowledge of the interconnections between social security and the economy, the Commission gave a Committee of independent experts, within which all the relevant disciplines were represented, especially economic and financial, the task of making a study of the economic impact of social security.

This study, carried out on the collective responsibility of the Committee of experts and directed by one of them, Professor Coppini, is one of a series of studies approaching from different angles, both general and by sector, the economic and financial problems of social security which the Council of Ministers of Social Affairs asked the Commission of the European Communities to examine in December 1966.

The methods followed by the experts, and the matters they dealt with, are described at length in Chapter I.

As indicated in the Conclusions, supplementary studies should be made. The Commission thinks, however, that the present one will be of use here and now at Community level, in each of the Member States, and at general international level, for it represents a contribution to the examination of a subject which is particularly complex and particularly disputed, and on which not many scientific studies have yet been published.

As it stands, the study constitutes a first survey at Community level not only of the problems of social security but also of the various elements of a social security policy and their impact on the economy as a whole (incomes, prices, consumption, employment, the economic situation and economic growth).

CHAPTER I

General considerations

I - Social security and the economy

1. The social security systems in force in various countries, and particularly in those of the European Economic Community, are continuously growing in importance both on the social plane, which is the specific field of operation of these systems, and on the economic plane.

Indeed, a redistribution of the national income is being achieved through the medium of social security which, by its scale and the manner in which it occurs, has probably quite significant effects on the economic system as a whole and on individual sectors. The scale of transfers in Community countries will be evident from some of the tables included in the present chapter. In the absence of final data for more recent years, it will suffice to note here that at present these transfers represent approximately 15 % to 20 % of the national income.

These initial figures already make it possible to deduce that the transfer of financial resources operated by the social security system through the methods of deductions and payments necessarily has repercussions on production as a result of the charges borne by enterprises, on public finance by reason of the State's contribution to these social security funds, and on consumption in connection with the different quantities of money made available to the various socio-occupational categories in the form of benefits.

2. There are also a whole series of other effects brought about by the system of social security which are less immediately apparent but which are certainly of no less importance. Mention should be made, for instance, of the effects on the demand and the supply of labour, and of the effects which certain benefits, such as family allowances and health care, have on the demographic trend and on the improvement of the citizens' health (leading to an increase in manpower). Mention should also be made of the consequences for collective saving of the systems of financial management, the effects that co-ordination of insurance systems could have on the mobility of labour and on competition, the effects resulting from an increase in social charges and their influence on the development process, etc.

3. It should also be noted that the incidence of social security becomes progressive in time. Indeed, if the elements relating to the period preceding the Second World War are compared with those relating to the periods of more recent date, it is easy to see how far the share of the national income redistributed by social security systems has increased in the last thirty or forty years.

To bring out the above point more clearly, the table below gives the percentages of national income devoted to social security in the countries of the Community for the years 1930, 1950, 1960 and 1964 respectively. It must be understood that the figures supplied for the earliest years, particularly for the period preceding the war, are considered to be very approximate, the evaluations made during those periods of the relevant data being extremely unreliable.

TABLE 1

Percentage of national income redistributed by social security systems

Countries	Years			
	1930	1950	1960	1965
Germany	9.3	13.3	17.4	19.1
France	4.9	13.9	15.3	19.5
Italy	1.7	8.5	13.4	17.7
Belgium		7.9	13.7	17.9
Luxembourg		12.6	15.9	18.4(1)
Netherlands		12.3	16.7	18.4

(1) Year 1964.

Sources: 1930: information furnished by the experts.
1950: "The Cost of Social Security" (ILO).
1960 and 1965: Statistical annex to the Report on the social situation in the Community (EEC).

4. It should be noted that the figures given in the preceding table have been taken from different sources for the various years and do not always agree with the national accounts. It must be further emphasized that in some cases the forms of social security in question do not quite agree with the definition of social security given later. Subject to this reservation, however, the figures in all countries show a substantial increase of expenditure

in relation to national income, and therefore tend to confirm the statements made above on the growing importance of social security in the national economies.

5. Here it must be remembered that social security expenditure presents features somewhat different from those of public expenditure. Indeed, an increase of this expenditure depends only partially on the extension of social security to the various categories of the population by virtue of an act which may be put into operation in its entirety or not and which is the result of political decisions taken successively. However, once a given system of social security has been adopted, it has a dynamism of its own which tends to increase expenditure in the course of subsequent years independently of any specific government decisions. This dynamism is most evident in the field of pensions, but other branches of social security also tend to develop, although to a lesser extent; this is particularly true of the early years, because of special provisions relating to waiting periods, transitional provisions, etc.

It is therefore evident that the desire of the various social groups in a country to benefit from ever fuller social security and the intrinsic development of each social security system have resulted in expenditure which is slowly absorbing more and more of the national income and so accentuating the direct and indirect effects on the economy referred to above.

The study of these effects is therefore coming to be of the greatest interest for those who have to co-ordinate the measures of social and of economic policy in a rational manner.

6. The importance of the questions briefly summarized in the preceding paragraphs led the European Economic Community to establish, as mentioned in the Foreword, a committee of experts to make an initial investigation of the problem and to report.

When, therefore, the Committee started the investigations with which it was entrusted, different kinds of difficulties had to be faced.

First of all, the literature on the methods used in social insurance and on its relationship with the economy contains no specialized studies dealing with the methodology to be adopted in investigations of this type.

7. Secondly, statistical data on the social security systems in the six countries and other available data of an economic character have so far been prepared for purely descriptive purposes in so far as the former are concerned, and for aims relevant to problems of another kind where the latter are concerned.

Finally, it should be emphasized that numerous questions included in a preliminary project submitted to the Committee did not at first sight seem to be such that replies could be given in quantified form; consequently, they could only have been studied from a qualitative point of view or perhaps, to be more precise, on the basis of more or less well-founded opinions to be gleaned from the few available works on the subject.

8. This being so, the Committee began by making a selection of the subjects in the project, with the aim of picking out the elements which could be the subject of a quantitative inquiry. Next, each expert was given the task of drafting a brief methodological note on each of the problems.

An examination of these notes showed first of all that much of the statistical data needed was not available, a point which had already been noted during the preliminary stage of the work. Moreover, some of the views on method could evoke a number of objections as to the validity of any conclusions drawn from them. Finally, a group of arguments put forward in the preliminary project—especially all those arguments relating to the effects on competition of an eventual co-ordination of social security systems in the six countries, and those bearing on determination of the percentage share of the national income that could be used for social security without harming economic development—have had, despite the fact that they have been touched on in certain chapters of the present report, to be left for systematic study at a later stage.

9. In spite of these difficulties, some of which (such as the lack of statistical data) cannot at present be overcome, the Committee deemed it useful to report at any rate on the initial investigations carried out both into problems of methodology and into concrete evaluations. On the latter point, the Committee of experts felt that, failing information which would render it possible to give concrete form to the methodological criteria suggested, it would be useful to report on certain subsidiary investigations made by the experts, even though these inquiries vary from one country to another or are totally lacking for some countries.

For each specific problem dealt with, the report aims at answering the following question of a general character: how does social security influence the economic system of a country?

To explain in the best possible manner the significance and importance to be attributed to the answers that will be given, some further observations must be made.

10. The first fundamental choice to be made in answering the question mentioned above relates to the type of economy with which it is proposed to compare the economies provided with social security systems, that is to say, it relates to the conditions to be taken as reference point in calculating the incidence of social security on the use of income.

11. There are a number of possibilities:

a) COMPARISON WITH A NATIONAL ECONOMY WHICH HAS NO SYSTEM OF SOCIAL SECURITY

This procedure would in itself be adequate to allow an evaluation of the global incidence of social security on the way income is used. But it is immediately evident that a national economy which has no system of social security whatever is inconceivable either from a political or economic point of view. Moreover, it is impossible to appraise human behaviour—if only approximately—in an economic system so radically removed from present-day reality.

b) COMPARISON WITH NATIONAL ECONOMIES HAVING DIFFERENT SYSTEMS OF SOCIAL SECURITY

12. A comparison with national economies which differ from economies actually in existence merely because of certain variations in systems of financing or in types of social benefit or owing to the absence of certain sectors of social security would be more modest but more realistic. It is proposed to deal more fully with the following alternatives:

Comparison with a national economy providing the same social security benefits but for which financing systems differ.

The specific incidence of the several financing systems on the use of income could be determined by taking one after another a number of hypotheses on the financing of existing benefits, financing drawn from workers' and employers' contributions and from direct and indirect taxes.

Comparison with a national economy in which the global amount of social benefits and the financing methods are identical, but in which the proportion of the various categories of benefit is different.

It would in this way be possible to evaluate successively the incidence of each category of benefit on the use of income.

An endeavour could thus be made to determine successively the combined incidence on the use of income of the financing method used and of the benefits offered by the different branches of social security. Except for certain considerations in connection with the first analysis of the problem of income redistribution (Chapter II), each of the quantitative studies presented below rests on one of these criteria, in accordance with the concrete possibilities.

13. The second fundamental choice relates to the method of analysis. Every change in the system of social security is likely to entail a state of disequilibrium which sets in motion a long process of adaptation; consequently, it is possible:

(*i*) To determine solely the immediate effect, that is to say, the first stage in the adaptation process;

(*ii*) To compare by means of a comparative statistical analysis the actual use of income with the use of income in the conditions of equilibrium hypothetically assumed for the economy used as reference;

(*iii*) To carry out a dynamic analysis of the process set in motion by the hypothetical change in social security in so far as the utilization of income is concerned.

14. Of course, the ideal would be to carry out a full dynamic analysis of the process, but, as will be seen, our information on the use of income is far from adequate, and the experts, realizing the difficulties, have ruled out the possibility of carrying out such a dynamic, qualified and full analysis of the various problems under consideration.

The fundamental observations set out above will have to be borne in mind when the whole report is read; but an attempt will in any case be made to explain at all stages the limits and the significance of the conclusions arrived at.

15. As already stated, the committee of experts was not able to develop all the arguments relating to every form of social security incidence on the economy. This is why the data appearing in this report relate to those questions on which, at the present stage, the committee was in a position to develop methodological ideas or to go a considerable way in qualitative and quantitative assessment; in order, however, to classify in some rational manner the material collected, the report is divided into the successive phases which traditionally form the course of the economic process.

This process is of course a circuit; consequently, any point can be considered as the beginning or the end of the circuit.

16. In order to study the effects of social security on the economic system, it was deemed advisable to begin at the stage of primary distribution of the income produced, after modification of this distribution by social security transfers of income between the various socio-economic categories and the various parts of the country. The first aspect of the subject dealt with in the present enquiry will be examined in Chapters II and III, which contain a review of the methods that can be used to determine the incomes redistributed by social security and a note on these incomes for some countries of the Community.

By changing the primary distribution of available resources of various socio-economic categories, the redistribution of incomes under the social security system exerts an influence on the level and structure of demand for consumer goods. Consequently, Chapter IV gives both brief indications of how the effects of social security on consumption can be measured and some significant data on this point.

17. Variations in the quantity and quality of consumption affect production and this in turn affects the factors of production, in particular employment, which will tend to adapt itself to the changing requirements of the production system. The various effects of social security on the supply and demand of labour are analysed in Chapter V.

The variations in consumption (demand) and production (supply) will bring about a price equilibrium at a level which will vary with the intensity and the direction of the different economic forces involved. Chapter VI is devoted to the problem of prices, although its treatment is fairly limited in scope; it develops a method by which to calculate the effect on prices of variations in contributions and of State intervention.

18. It is apparent that the distribution of incomes follows upon the production phase, thus closing the circuit which began with distribution.

The effects of social security can also be studied from another aspect. Since social security provides the State and the public bodies which administer it with a quite significant portion of resources, it is clearly suitable for use as an economic policy instrument by which the State may influence the economic cycle, stimulating business during periods of depression by increasing cash benefits, restraining it during periods of prosperity by increasing contributions. The effects of social security on the economic situation and, to a certain extent also, on long-term economic development are set out in Chapter VII.

19. In accordance with the criteria mentioned above, the report is divided into seven chapters:

Chapter I:	General considerations
Chapter II:	Primary redistribution of income through social security
Chapter III:	Transfer of social charges
Chapter IV:	Effects of social security on consumption
Chapter V:	Effects of social security on manpower supply and demand
Chapter VI:	Effects of social security on the price structure
Chapter VII:	Social security, the current economic situation and growth - reciprocal effects.

The report terminates with a series of conclusions.

20. It may be useful to recall that each chapter begins with an endeavour to summarize the methodological criteria applied to each question by the experts and, when possible, an evaluation based on these criteria is provided. This is followed in each chapter by a note on the subsidiary inquiries carried out by the experts in certain countries.

To conclude this brief review of the working methods used, it must be clearly pointed out that the Committee was unanimously of the opinion that the quantitative enquiries—those in which the methodological criteria put forward are used, and so even more those of a subsidiary character—can be looked upon as nothing more than examples, the main value of which is that they bring out a first pointer to the studies which it will be possible to undertake at a second stage, i.e. when the various objections of a theoretical character inherent in the methodologies already described can be eliminated by more detailed analyses and—even more important—when statistical data valid for the aims of the present research are available.

II - Definition of social security

21. The first problem to which the group of experts directed its attention was the definition of social security. In view of the purpose of this study, there appeared to be no need to define the concept exhaustively, but it was considered sufficient to determine clearly the boundaries of the field within which by and large the investigation will be made.

In this connection, the Statistical Office of the European Communities submitted to the Committee of experts a

lengthy report defining forms of "social expenditure" and suggestions for their classification. [1]

22. "Social expenditure", according to this document, includes "all expenditure the aim of which is to cover charges entailed for individuals (or households) by the occurrence or the existence of certain contingencies or needs, if this expenditure results in the intervention of a third party without there being at the same time an equivalent counterpart from the beneficiary".

The contingencies and needs taken into consideration in this definition are:

(i) sickness
(ii) old age, death and survival
(iii) invalidity
(iv) physical and psychological infirmity
(v) industrial accidents and occupational diseases
(vi) unemployment
(vii) family charges
(iix) war, political events and natural calamities.

23. As regards the classification of social expenditure, the report of the Statistical Office, basing itself on the system traditionally used in dealing with social security problems, goes thoroughly into the concepts of "systems", "institutions", "management", etc., and in particular states that "systems" of social intervention should be understood to mean "the whole body of social security provisions serving to protect the inhabitants of a country or a class of persons facing one or more contingencies".

Making use of a well conceived nomenclature which obviates the need for any closer definition—which is however available—the document subdivides these systems in the following manner:

(*a*) Social insurance systems:

the general system

special systems

systems based on statutes of service (for civil servants)

supplementary systems

voluntary systems

(*b*) Employers' voluntary benefits systems

(*c*) Systems offering benefits for victims of war, political events, etc.

(*d*) Systems of aid and social assistance.

24. The Committee of experts considered the definition of "social expenditure", as formulated by the Statistical Office, to be fully adequate and has therefore adopted it, but points out that in principle the study will be confined to those provisions which can be placed in systems (*a*) and (*b*) of the above list, to the exclusion of those in (*c*) and (*d*), which differ entirely from one country to another and for which data are not always available.

Regarding the other part of the classification made by the Statistical Office in respect of institutions, management, etc., the experts considered it inadvisable to be tied to so detailed a scheme, however great its value in the field of social security, since the purely economic aims pursued in the inquiry and the variety of problems entailed suggest rather different schemes for the redistribution of expenditure; these will in each case be indicated.

25. These brief observations are certainly not an absolutely rigid decision in the field to be studied, but the experts have accepted that the margins of doubt—which can never be delimited in an absolute manner when international data are confronted—will not make any significant difference to the findings in view—as we shall see later—of their purely indicative character.

There were, however, some manifestations of perplexity regarding particular forms to be found in certain countries.

In France, for example, certain social security expenditure, such as the economic benefits and family allowances for civil servants and the sickness insurance schemes of the French National Railways and of the autonomous Paris transport board, do not appear as such in the accounts; unemployment assistance, although given subject to particular conditions of residence, is however assimilated to social insurance in international comparisons.

26. Another example is furnished by Italy, where there are pension schemes run by individual enterprises, supplementing the general system. Only a small portion of these pensions is known to the public authorities, and both national and international statistics are correspondingly incomplete. In Italy, again, the statistics produced by the Communities apparently do not cover the mutual funds for sickness insurance in enterprises which replace the general system, or the allowances made to employees of the State and the public authorities to cover family charges.

[1] *Les comptes sociaux des Pays membres de la C.E.E.* (Social accounts of the EEC member countries) - Statistiques sociales, No. 5, 1967 - Statistical Office of the European Communities.

III - Preliminary description of demographic aspects and of the scale of social security transfers

A - GENERAL CONSIDERATIONS

27. The foregoing statements on the aims and limits of the present report could represent all that is really needed by way of general considerations.

However, before going into the substance of the various problems, it seemed that it would be useful to cover one of the primary requirements which, unfortunately, is not met in the available social security statistics. This consists essentially in providing for each country a description of the entire social security system, keeping in mind the specific aims of economic analysis which are of interest to us. From these descriptions should emerge:

(*a*) A suitable demographic table, giving a breakdown of the population on the basis of each individual's social security position;

(*b*) A suitable indication of the flow of incomes resulting from social security, for each of the conventional national accounting categories (households, enterprises, State) and for any subdivisions of these categories.

28. This information does not, of course, exhaust the description or the study of economic facts and of their connection with social security, but undoubtedly makes it possible to know the demographic and economic dimensions of the problem; without this knowledge it would not be possible to tackle the subject.

As has already been pointed out, it is unfortunately not possible with the statistics available to attain the aims set out above, for these statistics are in the main drawn from data of an administrative or fiscal character and are therefore frequently a source of misunderstandings, especially when comparisons are to be made at international level. It seems, therefore, that no time should be lost in promoting the preparation of suitable demographic and economic statistical studies that would describe social security clearly enough for comparisons to be made.

29. Such a task is, of course, outside the scope of the enquiry entrusted to the Committee of experts, both because of its scale and because it would mean calling on the various national statistical offices in order to harmonize the criteria used in the collection and presentation of data. In order, however, to highlight the overriding importance of this requirement the Committee of experts felt it should furnish a specimen of such an enquiry, which would at least bring out with greater precision the character of the data to be collected.

It is for this purpose and with this aim in view that the following paragraphs have been written. Their content, we repeat, does no more than indicate the problems which arise when an endeavour is made to arrive at a first valid description of social security activities in a given country.

B - DEMOGRAPHIC ASPECTS

30. To take the demographic aspects first, it seems evident that the main problems which arise in appraising a system of social security are:

(*a*) To know the breakdown of the population of a country into working and non-working population and into heads of family or other members of family;

(*b*) To know within each group the number requiring cover under each form of social security and the number who do not require such cover (either because they are not exposed to the risk in question or because they benefit from the cover afforded to the head of family on whom they depend economically);

(*c*) To know, for each form of social security, what proportion of the various groups in need of cover is potentially covered, what proportion is in fact in receipt of benefit and what proportion is without cover.

31. As a start the population could be divided into 10 groups, as given below:

1. Employed persons { Heads of family / Others }
2. Dependants of heads of family in group 1, not belonging to group 1 - 3 - 5 - 7
3. Self-employed persons { Heads of family / Others }
4. Dependants of heads of family in group 3, not belonging to groups 1 - 3 - 5 - 7
5. Rentiers { Heads of family / Others }
6. Dependants of heads of family in group 5, not belonging to groups 1 - 3 - 5 - 7
7. Persons unemployable because of invalidity or old age, not belonging to group 5 { Heads of family / Others }
8. Dependants of heads of family in group 7, not belonging to groups 1 - 3 - 5 - 7
9. Heads of family who do not belong to groups 1 - 3 - 5 - 7
10. Dependants of heads of family in group 9, not belonging to groups 1 - 3 - 5 - 7.

Of course, each heading in this classification would require suitable explanations which have, however, been omitted here, as the classification broadly reflects the criteria used in making general censuses of population.

32. On the other hand, it is more ticklish to define agreed rules for making within each group the breakdown referred to under (*b*), and the criteria according to which the problems mentioned under (*c*) are to be solved in cases where, for instance, there are double benefits or a person is both potentially covered and in receipt of benefit.

A discussion of all these problems would lead us very far and call for detailed and complete studies. In what follows we have confined ourselves to three examples, drawn from Italian statistics and supplemented by estimates; they deal with invalidity and old age insurance, the health services and family allowances. In order to indicate the manner in which the different tables have been compiled, they will be preceded by a brief note on the main criteria applied.

Invalidity and old age (Table 2)

33. It was agreed that invalidity and old age pensions should be provided only for heads of family who are not rentiers and for those who are economically active.

This means that persons belonging to groups 1, 3 and 9, excluding, in the latter group, heads of family who are widows of employed persons insured under a system with reversionary pension rights, should be considered to be persons in need of cover. On the other hand, it was decided to consider as persons not in need of cover

TABLE 2

Persons in need of cover (covered and not covered), persons not in need of cover, and persons in receipt of benefit, by population groups - Invalidity and old age

ITALY 1961

('000)

Groups		Census units	Persons in need of cover			Persons not in need of cover[1]	Persons in receipt of benefit
			Covered	Not covered	Total		
1. Employed persons	Heads of family	6 712					
	Others	6 453					
		13 165	13 165	—	13 165	—	?
2. Dependants of heads of family in group 1, not belonging to groups 1-3-5-7		13 600	—	—	—	13 600	—
3. Self-employed persons	Heads of family	3 906					
	Others	3 756					
		7 662	5 632	2 030	7 662	—	?
4. Dependants of heads of family in group 3, not belonging to groups 1-3-5-7		7 916	—	—	—	7 916	—
5. Rentiers	Heads of family	165					
	Others	36					
		201	—	—	—	201	?
6. Dependants of heads of family in group 5, not belonging to groups 1-3-5-7		133	—	—	—	133	—
7. Persons unemployable because of invalidity or old age, not belonging to group 5	Heads of family	2 498					
	Others	1 267					
		3 765	—	—	—	3 765	?
8. Dependants of heads of family in group 7, not belonging to groups 1-3-5-7		2 253	—	—	—	2 253	—
9. Heads of family, not belonging to groups 1-3-5-7		1 129	—	170	170	959	?
10. Dependants of heads of family in group 9, not belonging to groups 1-3-5-7		893	—	—	—	893	—
Total		50 717	18 797	2 200	20 997	29 720	4 906

(1) It is recalled that there is no need for cover where persons are not exposed to the risk in question or where they benefit from the cover given to the head of family on whom they depend economically.

heads of family who are widows (group 9) and persons in groups 5 and 7 (members of the latter group are no longer exposed to the relevant risk, since it has already overtaken them) and all dependants in similar groups.

34. In this and in all other forms of cover considered below, persons covered will be taken to mean those persons who are in need of cover and for whom the concrete provisions of their country provide cover against the risk in question, while persons not covered will be those persons who, although in need of cover, are not covered against the risk in question.

Finally, in the field of invalidity and old age insurance, it was agreed that all those persons who are paid a pension of this type should be considered as persons in receipt of benefit, whatever the group to which they belong.

35. It should be pointed out that in this form and other forms of insurance with continuing benefits the relevant claim is acquired during a period preceding that to which the table refers, and for this reason the persons in receipt of benefit may also be in groups which are not specifically defined in the classification. Thus, for instance, an employed person who has been granted a pension may subsequently move into the category of rentiers.

Health services (Table 3)

36. It is accepted that health services must be available to the entire population without discrimination between categories.

TABLE 3

Persons in need of cover (covered and not covered), persons not in need of cover, and persons in receipt of benefit, by population groups - Health services

ITALY 1961

('000)

Groups		Census units	Persons in need of cover			Persons not in need of cover	Persons in receipt of benefit (1)
			Covered	Not covered	Total		
1. Employed persons	Heads of family	6 712					
	Others	6 453					
		13 165	13 165	—	13 165	—	6 977
2. Dependants of heads of family in group 1, not belonging to groups 1-3-5-7		13 600	12 471	1 129	13 600	—	6 610
3. Self-employed persons	Heads of family	3 906					
	Others	3 756					
		7 662	7 162	500	7 662	—	3 796
4. Dependants of heads of family in group 3, not belonging to groups 1-3-5-7		7 916	6 752	1 164	7 916	—	3 579
5. Rentiers	Heads of family	165					
	Others	36					
		201	—	201	201	—	—
6. Dependants of heads of family in group 5, not belonging to groups 1-3-5-7		133	—	133	133	—	—
7. Persons unemployable because of invalidity or old age, not belonging to group 5	Heads of family	2 498					
	Others	1 267					
		3 765	3 199	566	3 765	—	1 695
8. Dependants of heads of family in group 7, not belonging to groups 1-3-5-7		2 253	1 397	856	2 253	—	740
9. Heads of family, not belonging to groups 1-3-5-7		1 129	959	170	1 129	—	508
10. Dependants of heads of family in group 9, not belonging to groups 1-3-5-7		893	554	339	893	—	294
Total		50 717	45 659	5 058	50 717	—	24 199

(1) Persons who were sick and to whom health service benefits were made available during the year.

Consequently, members of all ten groups should be considered to be persons in need of cover, while the values in the columns relating to persons not in need of cover will in each case be nil.

In view of the practical advantages and disadvantages of the various definitions, it was deemed useful to count as persons in receipt of benefit those who were sick and to whom health service benefits were made available during the year.

Family charges (Table 4)

37. It is agreed that family allowances must be available for all heads of families who are not rentiers.

This being so, heads of families in groups 1, 3, 7 and 9 can for this purpose be looked upon as persons in need of cover; the remainder of the population will of course be composed of persons not in need of cover.

It was deemed preferable to count as persons in receipt of benefit those members of a family who give rise to a claim for payment of allowances, as this makes possible a direct comparison with the corresponding number of dependants.

38. Clearly, the classification and the definitions proposed above are adapted in particular to the situation in Italy, which was taken as a basis in preparing the tables. They should therefore be re-examined in the light of the

TABLE 4

Persons in need of cover (covered and not covered), persons not in need of cover, and persons in receipt of benefit, by population groups - Family charges

ITALY 1961

('000)

Groups	Census units	Persons in need of cover			Persons not in need of cover	Persons in receipt of benefit
		Covered	Not covered	Total		
1. Employed persons { Heads of family	6 712					
{ Others	6 453					
	13 165	6 376	336	6 712	6 453	—
2. Dependants of heads of family in group 1, not belonging to groups 1-3-5-7	13 600	—	—	—	13 600	13 600
3. Self-employed persons { Heads of family	3 906					
{ Others	3 756					
	7 662	—	3 906	3 906	3 756	—
4. Dependants of heads of family in group 3, not belonging to groups 1-3-5-7	7 916	—	—	—	7 916	—
5. Rentiers { Heads of family	165					
{ Others	36					
	201	—	—	—	201	—
6. Dependants of heads of family in group 5, not belonging to groups 1-3-5-7	133	—	—	—	133	—
7. Persons unemployable because of invalidity or old age, not belonging to group 5 { Heads of family	2 498					
{ Others	1 267					
	3 765	2 123	375	2 498	1 267	—
8. Dependants of heads of family in group 7, not belonging to groups 1-3-5-7	2 253	—	—	—	2 253	424
9. Heads of family, not belonging to groups 1-3-5-7	1 129	959	170	1 129	—	—
10. Dependants of heads of family in group 9, not belonging to groups 1-3-5-7	893	—		—	893	402
Total	50 717	9 458	4 787	12 245	36 472	14 426

requirements of other countries in connection with any features peculiar to them.

If, for example, the relevant information is available for countries where the question is of importance, these tables could be arranged to show how many persons are in receipt of benefit under foreign systems or how many, although resident abroad, are a charge on the national system.

C - ECONOMIC ASPECTS

39. The other aim which is within the scope of a preliminary description of social security systems relates, as previously stated, to the extent of the movements engendered in different countries by the financing of these systems and by the relevant payments.

An enquiry on these lines could usefully form part of Chapter II, which deals in particular with the distribution of wealth entailed by the operation of a social security system. However, the immediate problem has a more limited and, in a way, more general objective, for the study of the distribution of incomes entailed by social security calls for the preparation of monographs on individuals or families while, as already stated, we propose at the present stage to confine ourselves to the broad categories used in national accounting (households, enterprises, State).

40. Moreover, it is not to be expected that an analytical study of the breakdown of incomes would be completed rapidly, nor could this question well become the subject of annual enquiries; but it is felt that there should be regular information on the scale of the movements entailed by social security in the main economic categories. It was therefore considered advisable to begin by setting out certain pointers which emerged from the discussions in the committee of experts and a number of examples taken from Italian and French data.

41. In addition to the basic breakdown into enterprises, households and the State—the three economic transactors —it was deemed advisable to subdivide social security receipts and expenditure into four economic sectors: agriculture, industry, tertiary activities and public administration; the non-working groups which absorb the main part of the cash benefits have been distributed, in accordance with the approximate criterion of the source of the benefits, among these four sectors so as to preserve one of the most significant comparisons in the sectoral budget of the system (it would not otherwise be possible to bring out the great difference between receipts and expenditure which will, one is sure, be found to exist in, for instance, agriculture).

It should be noted moreover that, especially in the case of pensions, the allocation of expenditure to a given economic sector can become purely conventional if in the country concerned there is great mobility of labour from sector to sector.

42. It should also be pointed out that when the tables were compiled it was not possible to distribute vertically the share of the State in financing or the sums received as income from capital; in numerous cases the institutions considered cover all four economic sectors, and State intervention generally appears as allocated to the various sectors.

In each sector an endeavour was made to separate employed persons from the self-employed among those insured (for revenue) and those in receipt of benefit (for expenditure); for employed persons, contributions are broken down into payments made by the employer (public or private) and those paid by the employee.

43. Receipts and expenditure have been classified as follows:

Receipts:

(*a*) social security contributions;

(*b*) other receipts (State or local authority transfers; income from capital and other resources).

Expenditure:

(*a*) the equivalent value of goods and services supplied in kind to individuals;

(*b*) cash transfers for compensation and allowances;

(*c*) cash transfers in refund of goods and services obtained by individuals;

(*d*) administration costs.

The Tables given below and limited to invalidity, old age and survival, health services and family allowances refer to the year 1962 for Italy (the data in question and those shown in Table 17 present some differences which are due to the methods used in the enquiries) and to the year 1963 for France.

44. The preceding paragraph contained pointers to the scale of the economic flows that are being set up within the various countries as a result of social security; but such flows are also being set up between countries as a result of the great mobility of labour today.

TABLE 5

Social budget of the social security institutions
Invalidity, old age and survival

ITALY 1962

(Bfrs. million)

Sectors	Expenditure					Receipts		
		Cash transfers						
	Goods and services supplied to individuals in kind	Compensation or allowances	Refunds for goods and services obtained by individuals	Administration costs	Total	Social security contributions	Other	Total
Agriculture	*234*	*19 581*	—	*777*	*20 592*	*2 436*	—	*2 436*
a) Enterprises	—	—	—	—	—	638	—	638
b) Families	234	19 581	—	777	20 592	1 798	—	1 798
1. employed persons	232	14 383	—	614	15 229	309	—	309
2. self-employed	2	5 198	—	163	5 363	1 489	—	1 489
Industry	*482*	*31 566*	*1*	*1 414*	*33 463*	*49 746*	—	*49 746*
a) Enterprises	—	—	—	—	—	33 242	—	33 242
b) Families	482	31 566	1	1 414	33 463	16 504	—	16 504
1. employed persons	481	30 978	1	1 380	32 840	15 732	—	15 732
2. self-employed	1	588	—	34	623	772	—	772
Tertiary activities	*280*	*20 905*	*26*	*904*	*22 115*	*26 244*	—	*26 244*
a) Enterprises	—	—	—	—	—	16 828	—	16 828
b) Families	280	20 905	26	904	22 115	9 416	—	9 416
1. employed persons	269	19 937	13	842	21 061	7 558	—	7 558
2. self-employed	11	968	13	62	1 054	1 858	—	1 858
Total private sector	*996*	*72 052*	*27*	*3 095*	*76 170*	*78 426*	—	*78 426*
a) Enterprises	—	—	—	—	—	50 708	—	50 708
b) Families	996	72 052	27	3 095	76 170	27 718	—	27 718
1. employed persons	980	65 299	14	2 837	69 130	23 599	—	23 599
2. self-employed	16	6 753	13	258	7 040	4 119	—	4 119
Public sector	*101*	*9 483*	—	*310*	*9 894*	*7 919*	—	*7 919*
a) Enterprises	—	—	—	—	—	5 907	—	5 907
b) Families (of employed persons)	101	9 483	—	310	9 894	2 012	—	2 012
State and local authority transfers	—	—	—	—	—	—	*17 931*	*17 931*
Income from capital and other resources	—	—	—	—	—	—	*4 272*	*4 272*
Total	**1 097**	**81 535**	**27**	**3 405**	**86 064**	**86 345**	**22 203**	**108 548**
Surplus or deficit	—	—	—	—	*22 484*	—	—	—
Balance struck at	—	—	—	—	*108 548*	—	—	*108 548*

TABLE 6

Social budget of the social security institutions
Social insurance, invalidity, old age

FRANCE 1963

(Bfrs. million)

Sectors	Expenditure						Receipts		
		Cash transfers							
	Goods and services supplied to individuals in kind	Compensation or allowances	Refunds for goods and services obtained by individuals	Administration costs	Other (transfers and other expenses)	Total	Social security contributions	Other (including transfers between schemes)	Total
Agriculture	—	*12 391*	—	*699*	*620*	*13 710*	*4 695*	*8 858*	*13 553*
a) Enterprises	—	—	—	—	—	—	1 950	—	—
b) Families	—	12 391	—	699	620	13 710	2 745	—	—
1. employed persons	—	3 582	—	266	163	4 011	775	—	—
2. self-employed	—	8 809	—	433	457	9 699	1 970	—	—
Industry and tertiary activities	—	*64 583*	—	*2 889*	*3 016*	*70 488*	*67 399*	*5 344*	*72 743*
a) Enterprises	—	—	—	—	—	—	32 231	—	—
b) Families	—	64 583	—	2 889	3 016	70 488	35 168	—	—
1. employed persons	—	56 241	—	2 191	2 726	61 158	23 884	—	—
2. self-employed	—	8 342	—	698	290	9 330	11 284	—	—
Total of private sector	—	*76 974*	—	*3 588*	*3 636*	*84 198*	*72 094*	*14 202*	*86 296*
a) Enterprises	—	—	—	—	—	—	34 181	—	—
b) Families	—	76 974	—	3 588	3 636	84 198	37 913	—	—
1. employed persons	—	59 823	—	2 457	2 889	65 169	24 659	—	—
2. self-employed	—	17 151	—	1 131	747	19 029	13 254	—	—
Public sector	—	*104 427*	—	*376*	*1 239*	*106 042*	*100 040*	*7 802*	*107 842*
a) Enterprises	—	—	—	—	—	—	84 881	—	—
b) Families	—	104 427	—	376	1 239	106 042	15 159	—	—
1. employed persons	—	104 427	—	376	1 239	106 042	15 159	—	—
2. self-employed	—	—	—	—	—	—	—	—	—
Various (1)	—	*9 771*	—	*50*	*2 239*	*12 060*	—	*12 508*	*12 508*
a) State	—	—	—	—	—	—	—	—	—
b) Families	—	9 771	—	50	2 239	12 060	—	—	—
Total	—	191 172	—	4 014	7 114	202 300	172 134	34 512	206 646
State and local authority transfers	—	—	—	—	—	—	—	—	*29 001*
Income from capital and other resources	—	—	—	—	—	—	—	—	*1 037*
Total	—	191 172	—	4 014	7 114	202 300	172 134	34 512	206 646
Surplus or deficit	—	—	—	—	—	*4 346*	—	—	*206 646*
Balance struck at	—	—	—	—	—	*206 646*	—	—	—

(1) Special fund for old age allowances and National Solidarity Fund.

TABLE 7

Social budget of social security institutions
Sickness, maternity and tuberculosis

ITALY 1962

(Bfrs. million)

Sectors	Expenditure					Receipts		
		Cash transfers						
	Goods and services supplied to individuals in kind	Compensation or allowances	Refunds for goods and services obtained by individuals	Administration costs	Total	Social security contributions	Other	Total
Agriculture	*7 755*	*420*	*172*	*1 024*	*9 371*	*2 422*	—	*2 422*
a) Enterprises	—	—	—	—	—	739	—	739
b) Families	7 755	420	172	1 024	9 371	1 683	—	1 683
1. employed persons	4 263	355	50	697	5 365	25	—	25
2. self-employed	3 492	65	122	327	4 006	1 657	—	1 657
Industry	*20 337*	*4 091*	*223*	*1 712*	*26 363*	*25 376*	—	*25 376*
a) Enterprises	—	—	—	—	—	24 436	—	24 436
b) Families	20 337	4 091	223	1 712	26 363	940	—	940
1. employed persons	19 638	4 091	223	1 597	25 549	398	—	398
2. self-employed	699	—	—	115	814	542	—	542
Tertiary activities	*7 972*	*1 082*	*1 063*	*1 293*	*11 410*	*10 215*	—	*10 215*
a) Enterprises	—	—	—	—	—	8 940	—	8 940
b) Families	7 972	1 082	1 063	1 293	11 410	1 275	—	1 275
1. employed persons	7 240	1 082	1 046	1 165	10 533	872	—	872
2. self-employed	732	—	17	128	877	403	—	403
Total of private sector	*36 064*	*5 593*	*1 458*	*4 029*	*47 144*	*38 013*	—	*38 013*
a) Enterprises	—	—	—	—	—	34 116	—	34 116
b) Families	36 064	5 593	1 458	4 029	47 144	3 897	—	3 897
1. employed persons	31 142	5 527	1 319	3 459	41 447	1 295	—	1 295
2. self-employed	4 922	66	139	570	5 697	2 602	—	2 602
Public sector	*3 031*	*262*	*3 058*	*1 244*	*7 595*	*5 761*	—	*5 761*
a) Enterprises	—	—	—	—	—	3 621	—	3 621
b) Families (of employed persons)	3 031	262	3 058	1 244	7 595	2 140	—	2 140
Total	39 095	5 855	4 516	5 273	54 739	43 774	—	43 774
State and local authority transfers	—	—	—	—	—	—	*1 658*	*1 658*
Income from capital and other resources	—	—	—	—	—	—	*638*	*638*
Total	39 095	5 855	4 516	5 273	54 739	43 774	2 296	46 070
Surplus or deficit	—	—	—	—	—	—	—	*8 669*
Balance struck at	—	—	—	—	—	—	—	*54 739*

TABLE 8

Social budget of social security institutions
Social insurance, sickness and maternity

FRANCE 1963

(Bfrs. million)

Sectors	Expenditure						Receipts		
		Cash transfers							
	Goods and services supplied to individuals in kind	Compensation or allowances	Refunds for goods and services obtained by individuals	Administration costs	Other (transfers and other expenses)	Total	Social security contributions	Other (including transfers between schemes)	Total
Agriculture	—	*719*	*12 977*	*1 260*	*235*	*15 191*	*8 820*	*6 073*	*14 893*
a) Enterprises	—	—	—	—	—	—	3 431	—	—
b) Families	—	719	12 977	1 260	235	15 191	5 389	—	—
1. employed persons	—	667	5 243	626	180	6 716	1 364	—	—
2. self-employed	—	52	7 734	634	55	8 475	4 025	—	—
Industry and tertiary activities	—	*21 160*	*73 452*	*5 260*	*4 661*	*104 533*	*102 513*	*1 257*	*103 770*
a) Enterprises	—	—	—	—	—	—	77 610	—	—
b) Families	—	21 160	73 452	5 260	4 661	104 533	24 903	—	—
1. employed persons	—	21 160	73 452	5 260	4 661	104 533	24 903	—	—
2. self-employed	—	—	—	—	—	—	—	—	—
Total private sector	—	*21 879*	*86 429*	*6 520*	*4 896*	*119 724*	*111 333*	*7 330*	*118 663*
a) Enterprises	—	—	—	—	—	—	81 041	—	—
b) Families	—	21 879	86 429	6 520	4 896	119 724	30 292	—	—
1. employed persons	—	21 827	78 695	5 886	4 841	111 249	26 267	—	—
2. self-employed	—	52	7 734	634	55	8 475	4 025	—	—
Public sector	—	*3 642*	*20 742*	*1 095*	*1 483*	*26 962*	*25 690*	*94*	*25 784*
a) Enterprises	—	—	—	—	—	—	19 282	—	—
b) Families	—	3 642	20 742	1 095	1 483	26 962	6 408	—	—
1. employed persons	—	3 642	20 742	1 095	1 483	26 962	6 408	—	—
2. self-employed	—	—	—	—	—	—	—	—	—
Various (1)	—	—	*1 398*	*71*	*17*	*1 486*	—	*1 490*	*1 490*
a) State	—	—	—	—	—	—	—	—	—
b) Families	—	—	—	—	—	—	—	—	—
Total	—	25 521	108 569	7 686	6 396	148 172	137 023	8 914	145 937
State and local authority transfers	—	—	—	—	—	—	—	—	*5 853*
Income from capital and other resources	—	—	—	—	—	—	—	—	*66*
Total	—	25 521	108 569	7 686	6 396	148 172	137 023	8 914	145 937
Surplus or deficit	—	—	—	—	—	—	—	—	*2 235*
Balance struck at	—	—	—	—	—	*148 172*	—	—	*148 172*

(1) Students and disabled soldiers.

TABLE 9

Social budget of social security institutions
Various insurance and assistance schemes

ITALY 1962

(Bfrs. million)

Sectors	Expenditure					Receipts		
		Cash transfers						
	Goods and services supplied to individuals in kind	Compensation or allowances	Refunds for goods and services obtained by individuals	Administration costs	Total	Social security contributions	Other	Total
Agriculture	—	*6 077*	—	*116*	*6 193*	*841*	—	*841*
a) Enterprises	—	—	—	—	—	841	—	841
b) Families	—	6 077	—	116	6 193	—	—	—
1. employed persons	—	6 077	—	116	6 193	—	—	—
2. self-employed	—	—	—	—	—	—	—	—
Industry	—	*25 251*	—	*482*	*25 733*	*34 220*	—	*34 220*
a) Enterprises	—	—	—	—	—	34 220	—	34 220
b) Families	—	25 251	—	482	25 733	—	—	—
1. employed persons	—	25 251	—	482	25 733	—	—	—
2. self-employed	—	—	—	—	—	—	—	—
Tertiary activities	—	*12 229*	—	*233*	*12 462*	*12 026*	—	*12 026*
a) Enterprises	—	—	—	—	—	12 026	—	12 026
b) Families	—	12 229	—	233	12 462	—	—	—
1. employed persons	—	12 229	—	233	12 462	—	—	—
2. self-employed	—	—	—	—	—	—	—	—
Total private sector	—	*43 557*	—	*831*	*44 388*	*47 087*	—	*47 087*
a) Enterprises	—	—	—	—	—	47 087	—	47 087
b) Families	—	43 557	—	831	44 388	—	—	—
1. employed persons	—	43 557	—	831	44 388	—	—	—
2. self-employed	—	—	—	—	—	—	—	—
Public sector	—	—	—	—	—	—	—	—
a) Enterprises	—	—	—	—	—	—	—	—
b) Families (self-employed)	—	—	—	—	—	—	—	—
Total	—	43 557	—	831	44 388	47 087	—	47 087
State and local authority transfers	—	—	—	—	—	—	*910*	*910*
Revenue from capital and other resources	—	—	—	—	—	—	*282*	*282*
Total	—	43 557	—	831	44 388	47 087	628	47 715
Surplus or deficit	—	—	—	—	*3 327*	—	—	—
Balance struck at	—	—	—	—	*47 715*	—	—	*47 715*

TABLE 10

Social budget of social security institutions
Family allowances

FRANCE 1963

(Bfrs. million)

Sectors	Expenditure						Receipts		
		Cash transfers							
	Goods and services supplied to individuals in kind	Compensation or allowances	Refunds for goods and services obtained by individuals	Administration costs	Other (transfers and other expenses)	Total	Social security contributions	Other (including transfers between schemes)	Total
Agriculture	—	*21 726*	—	*767*	*560*	*23 053*	*5 430*	*17 878*	*23 308*
a) Enterprises	—	—	—	—	—	—	1 842	—	—
b) Families	—	21 726	—	767	560	23 053	3 588	—	—
1. employed persons	—	10 385	—	367	227	10 979	—	—	—
2. self-employed	—	11 341	—	400	333	12 074	3 588	—	—
Industry and tertiary activities	—	*92 081*	—	*3 661*	*11 458*	*107 200*	*108 744*	*496*	*109 240*
a) Enterprises	—	—	—	—	—	—	101 320	—	—
b) Families	—	92 081	—	3 661	11 458	107 200	7 424	—	—
1. employed persons	—	84 862	—	3 086	11 223	99 171	—	—	—
2. self-employed	—	7 219	—	575	235	8 029	7 424	—	—
Total private sector	—	*113 807*	—	*4 428*	*12 018*	*130 253*	*114 174*	*18 374*	*132 548*
a) Enterprises	—	—	—	—	—	—	103 162	—	—
b) Families	—	113 807	—	4 428	12 018	130 253	11 012	—	—
1. employed persons	—	95 247	—	3 453	11 450	110 150	—	—	—
2. self-employed	—	18 560	—	975	568	20 103	11 012	—	—
Public sector	—	*32 850*	—	*83*	*1 763*	*34 696*	*33 596*	*1 100*	*34 696*
a) Enterprises	—	—	—	—	—	—	33 596	—	—
b) Families	—	32 850	—	83	1 763	34 696	—	—	—
1. employed persons	—	32 850	—	83	1 763	34 696	—	—	—
2. self-employed	—	—	—	—	—	—	—	—	—
Various (1)	—	*755*	—	—	*4 980*	*5 735*	—	*5 762*	*5 762*
a) State	—	—	—	—	—	—	—	—	—
b) Families	—	755	—	—	4 980	5 735	—	—	—
Total	—	147 412	—	4 511	18 761	170 684	147 770	25 236	173 006
State and local authority transfers	—	—	—	—	—	—	—	—	*9 680*
Income from capital and other resources	—	—	—	—	—	—	—	—	*42*
Total	—	147 412	—	4 511	18 761	170 684	147 770	25 236	173 006
Surplus or deficit	—	—	—	—	—	*2 322*	—	—	—
Balance struck at	—	—	—	—	—	*173 006*	—	—	*173 006*

(1) Disabled soldiers, maternity allowances for persons not economically active, and supplementary family allowances fund (Fonds national de surcompensation de prestations familiales).

Table 11 gives an idea of the scale of this international development; it is compiled from data given in a table to be found in the Fifth Annual Report (January-December 1965) drawn up by the secretariat of the Administrative Committee for the Social Security of Migrant Workers.

IV - Subsidiary elements in the preliminary description of the demographic and financial aspects

45. The preceding paragraphs have brought to light the requirements which, in the view of the Committee of experts, would have to be met before there can be regular statistics offering a general if preliminary demographic background to the study of social security and of the main flows resulting from it. They have also shown how very difficult it is to produce such statistics, and the need for a thorough and specialized study of the subject: the points made are therefore in the nature of a first approximation, and it did not prove possible to collect systematically the data needed for a complete table on the six countries. The studies contained in the present report are, as we have pointed out on several occasions, primarily methodological and their practical application must be postponed to a later date.

46. Since however one of the essential reasons for making the present study is the growth of social security and the importance it has assumed in the six countries of the Community, the committee of experts deemed it useful to conclude this Chapter with 9 tables from the "Social Statistics" published by the Statistical Office of the European Communities and brought up to date by this office to include the 1965 figures. Although the tables do not allow of such far-reaching deductions as could be derived from the data compiled on the basis of the criteria described under III above, they do provide preliminary pointers.

47. The first of these tables shows the number of persons covered by social security, the risks covered, the total population and the labour force (Table 12).

The second table gives the numbers in receipt of invalidity and old age pensions and the numbers in receipt of family allowances; other forms of insurance have been excluded, as it seemed that for the purpose of this exercise the numbers receiving benefit under them was of less interest (Table 13).

48. The remaining tables bring together data on social security receipts and expenditures broken down by the various schemes. The figures are given in Belgian francs to facilitate comparison and annual totals are shown as a percentage of the national income (Tables 14 to 19 and Table 20, which rounds off the preceding set of tables by showing the transfers between schemes in each country).

49. As the data used for the tables below were drawn from the statistics of the European Communities, readers should refer to the relevant publications if they wish to obtain fuller information on the methodological criteria adopted for their compilation.

The importance of Tables 12 to 20 is that they have brought to light the considerable increases that have taken place in all countries both in the number of persons insured and in receipt of benefit and in the scale of receipts and expenditure. This confirms earlier observations on the growing importance of social security within the European Economic Community.

TABLE 11

Summary table of benefits supplied by EEC countries on behalf of, or transferred to, other EEC countries, by type of benefit - 1964

(Bfrs. million)

	Belgium	Germany	France	Italy	Luxembourg	Netherlands	Total
I - BENEFITS IN KIND							
Countries having supplied benefits subject to refund (creditor countries)	Countries on whose behalf benefits have been supplied						
Belgium	—	1.6	53.2	0.5	1.9	0.4	57.6
Germany	1.1	—	1.4	0.3	2.8	3.2	8.8
France	8.2	7.6	—	4.6	0.9	0.5	21.8
Italy	25.6	416.5	47.6	—	7.7	3.4	500.8
Luxembourg	0.4	0.7	2.5	0.1	—	0.1	3.8
Netherlands	0.8	10.6	0.3	0.2	.	—	11.9
Total	36.1	437.0	105.0	5.7	13.3	7.6	604.7
II - INVALIDITY, OLD AGE OR SURVIVORS' PENSIONS							
Countries liable for benefits	Countries of residence of beneficiaries						
Belgium	—	12.0	64.7	303.5	4.5	26.0	410.6
Germany	71.7	—	130.7	118.9	6.8	283.8	611.8
France	324.8	219.3	—	285.5	30.8	2.0	862.4
Italy	17.1	6.7	70.8	—	0.9	0.2	95.8
Luxembourg	48.2	23.1	12.2	30.6	—	0.5	114.6
Netherlands	25.8	76.9	.	0.4	0.1	—	103.1
Total	487.6	337.9	278.3	738.9	43.1	312.5	2 198.3
III - PENSIONS PAYABLE FOR INDUSTRIAL ACCIDENTS AND DISEASES							
Countries liable for benefits	Countries of residence of beneficiaries						
Belgium	—	1.2	2.5	36.4	0.2	5.1	45.4
Germany	17.8	—	7.9	67.2	1.0	27.7	121.6
France	49.7	15.7	—	125.2	8.0	0.7	199.3
Italy	1.4	1.5	4.4	—	0.1	.	7.4
Luxembourg	9.1	6.4	4.1	10.6	—	0.1	30.3
Netherlands	1.6	3.7	0.1	0.4	.	—	5.8
Total	79.6	28.5	19.0	239.8	9.3	33.6	409.8
IV - FAMILY ALLOWANCES							
Countries liable for benefits	Countries where children are brought up						
Belgium	—	0.8	5.0	30.8	1.5	73.2	111.3
Germany	.	—	.	.	.	—	.
France	245.9	48.3	—	31.1	2.6	0.2	328.1
Italy	—	—	—	—	—	—	—
Luxembourg	19.9	5.4	5.1	13.9	—	.	44.3
Netherlands	41.0	5.3	0.1	2.3	—	—	48.7
Total	906.8	59.8	10.2	78.1	4.1	73.4	532.4

Total benefits supplied: 3 745.2

TABLE 12

Numbers covered by social security, by risk covered (1)

('000)

Risk covered	Year	Belgium	Germany (2)	France	Italy	Luxembourg (3)	Netherlands
1. Sickness, maternity	1958	3 008	26 150	17 820	21 629	145	4 463
	1959	3 048	26 315	18 030	22 286	144	4 517
a) Benefits in kind	1960	3 079	27 056	18 150	23 275	145	4 590
	1961	3 129	27 664	20 540	24 250	144	4 673
	1962	3 199	27 911	22 060	25 049	145	4 753
	1963	3 307	28 158	22 590	25 269	159	4 846
	1964	3 510	28 443	23 640	24 600	164	4 939
	1965	4 116	28 885	23 990	.	166	4 950
b) Cash benefits	1958	2 115	26 150	13 210	6 299	98	2 386
	1959	2 108	26 315	13 240	6 419	97	2 304
	1960	2 100	27 056	13 220	6 673	97	2 376
	1961	2 114	27 664	15 290	6 982	95	2 456
	1962	2 140	27 991	16 510	7 249	96	2 493
	1963	2 180	28 158	16 960	7 445	97	2 520
	1964	2 226	28 443	17 300	7 367	102	2 590
	1965	2 291	28 885	17 380	.	104	2 576
2. Invalidity, old age and survival	1958	3 219	22 300	18 260	17 815	122	6 914
	1959	3 215	22 400	18 220	18 126	130	6 975
	1960	3 268	22 600	18 135	20 285	135	7 041
	1961	3 324	22 700	18 210	21 311	134	7 198
	1962	3 393	22 300	19 245	21 497	135	7 346
	1963	3 438	22 300	19 605	21 523	136	7 500
	1964	3 501	22 200	19 995	21 752	138	7 600
	1965	3 571	22 100	19 930	20 817	140	7 700
3. Industrial accidents and occupational diseases	1958	2 564	26 200	12 515	12 716	129	2 692
	1959	2 536	26 300	12 520	12 853	129	2 754
	1960	2 555	26 350	12 565	13 167	131	2 852
	1961	2 595	24 600	12 665	13 323	132	2 919
	1962	2 644	24 900	13 695	13 308	142	3 016
	1963	2 693	25 800	14 165	13 230	139	3 040
	1964	2 764	26 100	14 595	13 623	138	3 080
	1965	2 788	25 800	14 815	12 339	134	3 200
4. Unemployment	1958	2 127	15 424	—	8 202	.	2 154
	1959	2 104	15 941	—	8 202	.	2 200
	1960	2 109	16 239	—	8 203	.	2 293
	1961	2 127	16 537	—	8 203	.	2 381
	1962	2 159	16 693	—	8 203	.	2 418
	1963	2 189	16 638	—	8 203	.	2 443
	1964	2 253	16 731	—	8 203	.	2 533
	1965	2 279	17 448	—	9 524	.	2 785
5. Family allowances	1958	3 330	.	17 580	5 883	.	3 164
	1959	3 321	.	17 590	6 623	.	3 214
	1960	3 327	.	17 495	6 630	.	3 265
	1961	3 396	.	17 585	7 219	.	3 337
	1962	3 426	.	18 570	7 635	.	3 432
	1963	3 450	.	19 010	7 727	.	7 500
	1964	3 492	.	19 370	7 776	.	7 600
	1965	3 457	.	19 300	7 517	.	7 700
Total population (1)	1958	9 053	53 279	44 789	49 189	311	11 278
	1959	9 104	53 845	45 240	49 523	313	11 417
	1960	9 153	55 433	45 687	49 760	315	11 556
	1961	9 184	56 175	46 163	50 045	319	11 721
	1962	9 221	56 938	46 998	50 336	323	11 890
	1963	9 290	57 588	47 853	50 857	326	12 042
	1964	9 378	58 266	48 416	51 382	330	12 212
	1965	9 464	59 041	48 390	51 767	333	12 377
Labour force (4)	1958	3 628	25 898	19 827	21 866	133	4 314
	1959	3 620	25 926	19 740	21 590	133	4 347
	1960	3 616	26 518	19 723	21 210	134	4 396
	1961	3 632	26 772	19 694	21 128	134	4 455
	1962	3 675	26 937	19 737	20 800	136	4 324
	1963	3 694	27 066	19 989	20 379	136	4 404
	1964	3 726	27 148	20 201	20 348	138	4 482
	1965	3 766	27 300	20 259	20 131	139	4 541

(1) Numbers on 30 June, except for Italy, Luxembourg and the Netherlands (for which, numbers on 31 December).
(2) For Germany (FR) incl. West Berlin; 1958 to 1959, excl. the Saar; from 1960, incl. the Saar.
(3) For unemployment there is assistance, but no insurance scheme. For family allowances the whole population is covered.
(4) Yearly average.

TABLE 13

Numbers in receipt of invalidity and old-age benefit and of family allowances

Class of beneficiary	Year	Belgium	Germany	France	Italy	Luxembourg	Netherlands
Old-age pensioners (1)	1958	247 012	2 603 921	1 932 942	2 863 715	24 410	765 000
	1959	252 309	2 847 710	1 947 249	3 047 920	25 270	788 000
	1960	256 038	3 044 928	1 980 421	3 257 778	26 209	814 000
	1961	263 513	3 180 981	2 008 431	3 336 413	27 105	830 000
	1962	264 119	3 301 582	2 045 823	3 374 352	26 495	854 000
	1963	259 972	3 436 716	2 086 418	3 393 283	28 773	874 000
	1964	258 256	3 609 800	2 180 855	3 443 152	29 590	900 300
	1965	256 501	3 958 000	2 260 200	.	31 018	925 000
Invalidity pensioners (1)	1958	78 685	1 459 166	186 104	976 955	.	120 024
	1959	84 269	1 527 608	192 996	1 093 484	.	125 460
	1960	100 778	1 589 787	198 388	1 285 248	.	132 970
	1961	109 645	1 598 091	202 066	1 362 696	.	139 032
	1962	114 908	1 608 930	207 831	1 484 885	.	145 832
	1963	119 761	1 595 960	215 901	1 658 037	.	153 615
	1964	115 897	1 586 297	227 009	1 875 159	.	172 900
	1965	118 730	1 506 000	238 783	.	.	190 500
Households entitled to family allowances (2)	1958	964 219	1 162 570	3 014 880	4 382 000	42 442	874 801
	1959	965 470	1 205 092	2 970 481	4 473 300	46 065	899 273
	1960	985 646	1 314 934	3 034 477	4 693 580	47 281	919 504
	1961	1 008 298	1 359 917	3 137 387	4 627 700	51 536	948 162
	1962	1 026 141	1 436 678	3 204 603	4 838 100	52 406	998 239
	1963	1 036 962	1 532 821	3 322 891	4 981 600	51 927	1 332 600
	1964	1 050 225	2 015 000	3 437 360	5 051 200	54 151	1 410 200
	1965	1 073 106	2 171 000	3 519 000	.		
Children benefiting from family allowances (2)	1958	1 872 915	1 737 717	7 091 319	6 558 105	73 547	2 076 182
	1959	1 880 119	1 842 603	7 204 416	6 653 119	81 878	2 019 988
	1960	1 944 987	2 027 293	7 426 198	6 977 228	84 271	2 178 086
	1961	2 003 243	2 167 064	7 696 296	7 106 000	93 247	2 262 368
	1962	2 055 170	2 333 622	8 003 898	7 382 900	95 846	2 330 405
	1963	2 095 082	2 541 239	8 344 236	7 587 300	95 616	3 137 100
	1964	2 141 391	3 675 000	8 688 556	7 641 200	100 882	3 330 500
	1965	2 204 674	4 827 000	8 909 000	.		
Husbands, wives and other persons entitled to family allowances (2)	1958	—	—	—	4 707 539	—	—
	1959	—	—	—	4 794 025	—	—
	1960	—	—	—	4 869 738	—	—
	1961	—	—	—	4 901 900	—	—
	1962	—	—	—	5 082 800	—	—
	1963	—	—	—	5 248 900	—	—
	1964	—	—	—	5 312 500	—	—
	1965	—	—	—	.	—	—

(1) Figures for 30 June, except for Italy, Luxembourg and the Netherlands (31 December).
(2) Figures for 30 June, except for Germany and Luxembourg (31 December).

TABLE 14

Social security receipts and expenditure (all schemes)

BELGIUM

(Bfrs. million)

Risks covered	Year	Receipts				Expenditure				
						Benefits				
		Total contributions	Grants from the State and other public authorities	Other receipts	Total receipts	in kind	in cash	Total	Other expenditure	Total expenditure
1. Sickness, maternity	1958	9 221	3 663	674	13 558	7 376	4 871	12 247	1 344	13 591
	1959	9 203	4 551	769	14 523	8 224	5 569	13 793	1 377	15 170
	1960	10 324	4 697	693	15 714	8 698	6 550	15 248	1 434	16 682
	1961	11 240	5 526	485	17 251	9 252	6 928	16 180	1 540	17 720
	1962	12 072	6 729	442	19 243	10 198	7 599	17 797	1 626	19 423
	1963	12 782	6 434	790	20 006	11 772	8 056	19 828	1 856	21 684
	1964	16 287	10 678	860	27 825	12 215	9 088	21 303	2 477	23 780
	1965	20 328	12 494	929	33 751	27 717	10 658	32 375	3 158	35 533
2. Disability, old age and survival	1958	20 770	6 194	4 587	31 651	—	25 928	25 928	799	26 727
	1959	20 752	6 923	4 525	32 200	—	28 970	28 970	824	29 794
	1960	22 662	7 212	4 567	34 441	—	29 805	29 805	1 529	31 334
	1961	25 297	7 372	3 580	36 249	—	31 859	31 859	1 550	33 309
	1962	26 297	8 167	3 465	37 929	—	35 287	35 287	1 353	36 640
	1963	28 923	9 096	3 807	41 826	—	37 055	37 055	1 471	38 526
	1964	33 535	9 938	4 049	47 522	—	40 018	40 018	1 965	41 893
	1965	38 078	10 921	4 406	53 405	347	44 304	44 651	1 875	46 526
3. Industrial accidents and occupational diseases	1958	3 989	1	622	4 612	555	1 962	2 517	1 006	3 523
	1959	3 826	1	693	4 520	543	2 022	2 565	1 034	3 599
	1960	4 008	1	731	4 740	559	2 357	2 916	1 088	4 004
	1961	4 258	155	751	5 024	613	2 424	3 037	973	4 010
	1962	4 505	2	795	5 302	652	2 665	3 317	1 050	4 367
	1963	5 129	1	870	6 000	728	2 949	3 677	1 132	4 809
	1964	6 318	1	997	7 316	800	3 065	3 865	1 466	5 331
	1965	6 508	56	1 101	7 665	861	3 242	4 103	1 704	5 807
4. Unemployment	1958	2 481	3 731	47	6 259	—	5 236	5 236	906	6 142
	1959	2 488	5 363	51	7 902	—	6 630	6 630	1 068	7 698
	1960	2 807	3 802	77	6 686	—	5 537	5 537	948	6 485
	1961	2 664	2 428	222	5 314	—	4 519	4 519	907	5 426
	1962	3 662	2 305	219	6 186	—	5 011	5 011	691	5 702
	1963	4 310	2 899	78	7 287	—	5 815	5 815	1 556	7 371
	1964	4 889	1 746	124	6 759	—	4 338	4 338	1 428	5 766
	1965	5 201	2 289	113	7 603	—	6 282	6 282	1 413	7 695
5. Family benefits	1958	12 130	766	75	12 971	—	12 746	12 746	347	13 093
	1959	12 129	817	122	13 068	—	13 053	13 053	573	13 626
	1960	13 694	818	193	14 705	—	14 094	14 094	648	14 742
	1961	15 675	849	148	16 672	—	15 691	15 691	649	16 340
	1962	17 353	901	164	18 418	—	16 977	16 977	684	17 661
	1963	19 841	1 140	196	21 177	—	19 365	19 365	710	20 075
	1964	21 873	1 153	284	23 310	—	20 854	20 854	1 146	22 000
	1965	26 242	1 425	331	27 998	—	25 059	25 059	842	25 901
6. Total	1958	48 591	14 355	6 005	68 951	7 931	50 743	58 674	4 402	63 076
	1959	48 398	17 655	6 160	72 213	8 767	56 244	65 011	4 876	69 887
	1960	53 495	16 530	6 261	76 286	9 257	58 343	67 600	5 647	73 247
	1961	58 134	16 190	5 186	80 510	9 865	61 421	71 286	5 619	76 905
	1962	63 889	18 104	5 085	87 078	10 850	67 539	78 389	5 404	83 793
	1963	70 985	19 570	5 741	96 296	12 500	73 240	85 740	6 725	92 465
	1964	82 902	23 516	6 314	112 732	13 015	77 363	90 378	8 482	98 860
	1965	96 537	27 185	6 880	130 422	22 925	89 545	112 470	8 992	121 462
7. Employers' and employees' contributions as percentage of share of households in the national income	1958	11.7								
	1959	11.5								
	1960	11.9								
	1961	12.6								
	1962	12.7								
	1963	13.1								
	1964	13.8								
	1965	14.6								
8. Benefits as percentage of national income	1958	13.8								
	1959	15.1								
	1960	14.8								
	1961	14.8								
	1962	15.2								
	1963	15.6								
	1964	14.6								
	1965	17.9								

TABLE 15

Social security receipts and expenditure

GERMANY

(Bfrs. million)

Risks covered	Year	Receipts				Expenditure				
						Benefits				
		Total contributions	Grants from the State and other public authorities	Other receipts	Total receipts	in kind	in cash	Total	Other expenditure	Total expenditure
1. Sickness, maternity	1958	77 755	2 035	17 826	97 616	54 062	30 821	84 883	7 378	92 261
	1959	84 225	2 308	17 270	103 801	60 757	32 806	93 563	7 355	100 918
	1960	95 417	2 536	18 071	116 024	68 997	37 303	106 300	8 348	114 648
	1961	113 564	3 102	20 824	137 490	80 106	45 222	125 328	9 593	134 921
	1962	129 605	2 851	25 809	158 265	90 673	50 174	140 847	10 557	151 404
	1963	135 333	2 852	29 274	167 459	100 606	51 741	152 347	11 634	163 981
	1964	144 581	4 507	33 654	182 742	112 630	51 332	163 962	12 307	176 269
	1965	161 689	4 562	35 276	201 527	129 583	56 022	185 605	13 735	199 340
2. Disability, old age and survival	1958	215 223	59 595	19 776	294 596	10 531	241 962	252 493	33 452	285 945
	1959	231 701	63 125	19 423	314 249	10 297	259 640	269 937	33 265	303 222
	1960	258 611	69 021	21 277	348 909	11 254	284 828	296 082	36 980	333 062
	1961	299 168	101 129	25 093	425 390	13 366	320 252	333 618	42 529	376 147
	1962	328 419	80 775	33 291	442 485	15 264	346 583	361 847	54 407	416 254
	1963	356 923	89 484	35 291	481 698	16 538	378 978	395 516	58 772	454 288
	1964	389 384	100 623	30 524	520 531	15 675	418 656	434 331	57 480	491 811
	1965	428 549	110 900	46 091	585 540	21 814	463 018	484 832	76 159	560 991
3. Industrial accidents and occupational diseases	1958	19 742	285	881	20 908	3 415	14 078	17 493	2 213	19 706
	1959	20 607	251	957	21 815	3 624	13 885	17 509	2 273	19 782
	1960	21 133	215	1 041	22 389	3 911	14 591	18 502	2 476	20 978
	1961	24 423	285	1 229	25 937	4 530	18 082	22 612	2 904	25 516
	1962	27 153	299	1 332	28 784	4 992	18 787	23 779	3 175	26 954
	1963	29 411	425	1 426	31 262	5 116	20 329	25 445	3 778	29 223
	1964	33 316	2 279	1 790	37 385	4 858	26 855	31 713	5 058	36 771
	1965	38 061	3 108	2 784	43 953	5 109	29 758	34 867	5 581	40 448
4. Unemployment	1958	17 124	4 439	2 915	24 478	—	16 791	16 791	8 401	25 192
	1959	18 526	3 014	2 906	24 446	—	12 881	12 881	7 989	20 870
	1960	21 145	1 495	3 851	26 491	—	7 571	7 571	7 392	14 963
	1961	15 686	732	3 165	19 583	—	5 982	5 982	7 086	13 068
	1962	12 599	511	3 262	16 372	—	8 889	8 889	7 495	16 384
	1963	19 165	551	3 490	23 206	—	15 200	15 200	8 219	23 419
	1964	19 106	538	3 656	23 300	—	10 905	10 905	8 288	19 193
	1965	20 149	410	4 077	24 636	—	10 590	10 590	8 639	19 229
5. Family benefits	1958	18 707	167	119	18 993	—	18 136	18 136	440	18 576
	1959	19 901	180	84	20 165	—	20 847	20 847	466	21 313
	1960	22 832	155	84	23 071	—	22 341	22 341	514	22 855
	1961	25 006	3 947	99	29 052	—	28 096	28 096	732	28 828
	1962	25 249	7 009	112	32 370	—	32 283	32 283	934	33 217
	1963	27 935	5 642	87	33 664	—	32 989	32 989	938	33 927
	1964	24 214	16 614	125	40 953	—	40 815	40 815	889	41 704
	1965	19 441	34 792	37	54 270	—	53 722	53 722	1 802	55 520
6. Total	1958	348 551	66 521	41 519	456 591	68 008	321 788	389 796	51 884	441 680
	1959	374 958	68 878	40 640	484 476	74 678	340 059	414 737	51 358	466 105
	1960	419 138	73 422	44 324	536 884	84 162	366 634	450 796	55 710	506 506
	1961	477 847	109 195	50 410	637 452	98 002	417 634	515 636	62 844	578 480
	1962	523 025	91 445	63 806	678 276	110 929	456 716	567 645	76 568	644 213
	1963	568 767	98 954	69 568	737 289	122 260	499 237	621 497	83 341	704 838
	1964	610 601	124 561	69 749	804 911	133 163	548 563	681 726	84 022	765 748
	1965	667 889	153 772	88 265	909 926	156 506	613 110	759 616	105 916	875 532
7. Employers' and employees' contributions as percentage of share of households in the national income	1958	17.0								
	1959	16.9								
	1960	16.6								
	1961	16.6								
	1962	16.7								
	1963	16.9								
	1964	16.6								
	1965	16.7								
8. Benefits as percentage of national income	1958	17.5								
	1959	17.2								
	1960	16.4								
	1961	16.5								
	1962	16.8								
	1963	17.2								
	1964	17.2								
	1965	18.0								

TABLE 16

Social security receipts and expenditure (all schemes)

FRANCE

(Bfrs. million)

Risks covered	Year	Receipts				Expenditure				
						Benefits				
		Total contributions	Grants from the State and other public authorities	Other receipts	Total receipts	in kind	in cash	Total	Other expenditure	Total expenditure
1. Sickness, maternity	1958	65 577	2 379	648	67 604	52 479	15 493	67 972	7 185	75 157
	1959	67 373	1 805	546	69 724	49 430	14 161	63 591	7 071	70 662
	1960	75 546	2 639	605	78 790	58 724	15 851	74 575	7 466	82 041
	1961	92 628	4 400	4 781	101 809	75 476	17 870	93 346	9 509	102 855
	1962	113 376	4 573	1 052	119 001	91 858	21 598	113 456	10 768	124 224
	1963	139 516	5 533	3 515	148 564	110 523	25 980	136 503	14 336	150 839
	1964	153 395	9 057	10 202	172 654	131 568	29 078	160 646	17 275	177 921
	1965	166 294	8 784	11 417	186 495	147 513	32 180	179 693	19 021	198 714
2. Disability, old age and survival	1958	109 253	26 868	9 840	145 961	—	125 315	125 315	11 347	136 662
	1959	109 562	11 959	5 475	126 996	—	119 643	119 643	6 220	125 863
	1960	115 254	16 060	5 476	136 790	—	126 687	126 687	8 340	135 027
	1961	133 266	18 255	5 899	157 420	—	140 350	140 350	13 026	153 376
	1962	152 250	17 921	8 522	178 693	—	162 962	162 962	7 857	170 819
	1963	175 232	21 730	13 403	210 365	—	194 613	194 613	11 328	205 941
	1964	201 514	24 472	20 273	246 259	—	224 221	224 221	18 039	242 260
	1965	226 836	25 670	23 612	276 118	—	254 352	254 352	18 952	273 304
3. Industrial accidents and occupational diseases	1958	22 535	—	1 061	23 596	2 805	16 033	18 838	3 518	22 356
	1959	21 560	—	979	22 539	2 685	15 882	18 567	3 114	21 681
	1960	23 210	—	947	24 157	2 978	17 767	20 745	3 264	24 009
	1961	26 945	—	1 079	28 024	3 570	19 968	23 538	3 773	27 312
	1962	30 491	—	1 473	31 964	4 222	23 257	27 479	4 298	31 777
	1963	35 097	—	1 543	36 640	4 926	27 496	32 422	4 693	37 115
	1964	39 219	—	2 603	41 822	5 880	31 390	37 270	6 306	43 576
	1965	44 544	—	4 166	48 710	6 113	35 382	41 495	8 267	49 762
4. Unemployment	1958	—	341	—	341	—	341	341	—	341
	1959	—	673	—	673	—	668	668	5	673
	1960	—	612	—	612	—	605	605	7	612
	1961	—	487	—	487	—	482	482	5	487
	1962	—	365	—	365	—	362	362	3	365
	1963	—	507	—	507	—	503	503	4	507
	1964	—	505	—	505	—	502	502	3	505
	1965	—	737	—	737	—	735	735	2	737
5. Family benefits	1958	116 277	770	21 872	138 919	—	110 869	110 869	14 004	124 873
	1959	98 156	669	20 424	119 249	—	100 593	100 593	14 301	114 894
	1960	106 342	1 692	17 260	125 294	—	109 740	109 740	12 569	122 310
	1961	121 141	892	23 278	145 311	—	118 167	118 167	18 783	136 950
	1962	132 592	4 468	20 508	157 568	—	133 088	133 088	16 894	149 982
	1963	150 430	768	24 922	176 120	—	150 065	150 065	23 691	173 756
	1964	169 316	1 586	27 985	198 887	—	162 255	162 255	32 604	194 859
	1965	182 192	3 395	26 507	212 094	—	171 160	171 160	34 309	205 469
6. Total	1958	313 642	29 358	33 421	376 421	55 284	268 051	323 335	36 054	359 389
	1959	296 651	15 106	27 424	339 181	52 115	250 947	303 062	30 711	333 773
	1960	320 351	21 004	24 288	365 643	61 701	270 650	332 351	31 648	363 999
	1961	373 979	24 034	35 038	433 051	79 046	296 837	375 883	45 097	420 980
	1962	428 709	27 327	31 555	487 591	96 080	341 267	437 347	39 820	477 167
	1963	500 275	28 538	43 383	572 196	115 449	398 658	514 107	54 052	568 159
	1964	563 444	35 620	61 063	660 127	137 448	447 446	584 894	74 227	659 121
	1965	619 866	38 586	65 702	724 154	153 626	493 809	647 435	80 551	727 986
7. Employers' and employees' contributions as percentage of share of households in the national income	1958	14.9								
	1959	15.2								
	1960	14.8								
	1961	16.0								
	1962	16.4								
	1963	17.2								
	1964	17.9								
	1965	18.2								
8. Benefits as percentage of national income	1958	14.5								
	1959	14.7								
	1960	14.4								
	1961	15.2								
	1962	15.8								
	1963	16.9								
	1964	17.7								
	1965	18.3								

TABLE 17

Social security receipts and expenditure (all schemes)
ITALY

(Bfrs. million)

Risks covered	Year	Receipts				Expenditure				
						Benefits				
		Total contributions	Grants from the State and other public authorities	Other receipts	Total receipts	in kind	in cash	Total	Other expenditure	Total expenditure
1. Sickness, maternity	1958	26 780	952	6 594	34 326	24 233	4 077	28 310	4 039	32 349
	1959	29 312	1 047	7 040	37 399	28 272	4 396	32 668	4 075	36 743
	1960	32 560	1 096	9 185	42 841	34 639	4 452	39 091	4 615	43 706
	1961	35 970	1 740	11 231	48 941	38 744	4 907	43 651	5 020	48 671
	1962	43 469	1 661	12 424	57 554	45 780	5 872	51 652	5 986	57 638
	1963	49 676	2 166	17 571	69 413	57 022	8 051	65 073	7 924	72 997
	1964	73 765	6 727	10 430	90 922	70 378	11 240	81 618	9 988	91 606
	1965	74 637	14 259	7 438	96 334	81 432	11 543	92 975	10 345	103 320
2. Disability, old age and survival	1958	51 512	7 139	8 122	66 763	137	61 440	61 577	5 818	67 395
	1959	59 636	7 593	7 567	74 796	142	71 941	72 083	9 184	81 267
	1960	75 510	29 133	8 295	112 938	154	78 253	78 407	9 468	87 875
	1961	85 591	16 509	10 291	112 391	190	85 019	85 209	9 272	94 481
	1962	104 106	18 116	12 891	135 113	180	103 044	103 224	16 540	119 764
	1963	138 412	24 690	12 705	175 807	590	131 894	132 484	19 175	151 659
	1964	152 278	25 497	17 726	195 501	298	143 556	143 854	12 808	156 662
	1965	154 387	65 881	115 131	335 399	376	196 087	196 463	102 675	299 138
3. Industrial accidents and occupational diseases	1958	6 964	44	1 103	8 111	1 333	3 604	4 937	2 117	7 054
	1959	7 337	49	1 184	8 570	1 431	3 942	5 373	2 185	7 558
	1960	8 050	49	1 319	9 418	1 569	4 269	5 838	2 318	8 156
	1961	9 625	42	1 425	11 092	1 679	4 706	6 385	2 618	9 003
	1962	12 368	47	1 600	14 015	1 983	6 221	8 204	2 964	11 168
	1963	16 199	248	1 972	18 419	2 331	8 764	11 095	3 437	14 532
	1964	19 460	16	2 380	21 856	2 653	9 072	11 725	4 939	16 664
	1965	18 932	43	2 787	21 762	2 718	11 333	14 051	4 186	18 237
4. Unemployment	1958	7 395	60	781	8 236	—	5 034	5 034	1 095	6 939
	1959	7 293	52	239	7 584	—	5 214	5 214	2 050	7 264
	1960	7 421	99	193	7 713	—	5 243	5 243	2 442	7 685
	1961	7 953	126	192	8 271	—	7 362	7 362	2 545	9 907
	1962	9 038	114	307	9 459	—	7 102	7 102	3 412	10 514
	1963	11 064	28	141	11 233	—	5 792	5 792	5 873	11 665
	1964	12 129	544	136	12 809	—	6 607	6 607	7 488	14 095
	1965	11 573	1 304	167	13 044	—	9 923	9 923	8 599	18 522
5. Family benefits	1958	31 400	479	536	32 415	—	31 898	31 898	1 310	33 208
	1959	34 047	1 349	20	35 416	—	33 822	33 822	1 252	35 074
	1960	36 267	914	24	37 205	—	36 114	36 114	1 219	37 333
	1961	39 382	914	22	40 318	—	39 050	39 050	1 256	40 306
	1962	47 205	913	26	48 144	—	43 666	43 666	1 354	45 020
	1963	52 159	913	28	53 100	—	45 069	45 069	1 614	46 683
	1964	53 763	907	275	54 945	—	45 265	45 265	1 995	47 260
	1965	53 230	904	707	54 841	—	51 873	51 873	1 778	53 651

Continuation of page 34

TABLE 17 (Continuation)

Risks covered	Year	Receipts				Expenditure				
						Benefits				
		Total contributions	Grants from the State and other public authorities	Other receipts	Total receipts	in kind	in cash	Total	Other expenditure	Total expenditure
6. Miscellaneous	1958	3 569	13	1 065	4 647	99	2 239	2 338	231	2 569
	1959	3 835	13	1 096	4 944	132	3 255	3 387	309	3 696
	1960	3 882	45	1 261	5 188	168	3 523	3 691	300	3 991
	1961	4 578	9	1 291	5 878	223	3 280	3 503	390	3 893
	1962	5 189	9	1 557	6 755	261	3 278	3 539	446	3 935
	1963	5 841	41	3 753	9 635	361	3 688	4 049	2 553	6 602
	1964	6 798	35	2 238	9 071	272	5 052	5 324	698	6 022
	1965	9 403	13	4 727	14 143	335	5 761	6 096	4 331	10 427
7. Total	1958	127 619	8 688	18 191	154 498	25 802	108 292	134 094	15 420	149 514
	1959	141 461	10 104	17 145	168.710	29 976	122 571	152 547	19 055	171 602
	1960	163 690	31 336	20 277	215 303	36 529	131 855	168 384	20 362	188 746
	1961	183 099	19 340	24 452	226 891	40 836	144 324	185 160	21 101	206 261
	1962	221 375	20 861	28 805	271 041	48 205	169 183	217 388	30 701	248 089
	1963	273 351	28 086	36 170	337 607	60 304	203 258	263 562	40 576	304 138
	1964	318 193	33 726	33 185	385 104	73 601	220 792	294 393	37 916	332 309
	1965	322 162	82 404	130 457	535 523	84 861	286 520	371 381	131 914	503 295
8. Employers' and employees' contributions as percentage of share of households in the national income	1958	.								
	1959	.								
	1960	.								
	1961	.								
	1962	.								
	1963	.								
	1964	.								
	1965	14.9								
9. Benefits as percentage of national income	1958	11.5								
	1959	12.2								
	1960	12.5								
	1961	12.4								
	1962	12.9								
	1963	13.6								
	1964	13.9								
	1965	16.4								

TABLE 18

Social security receipts and expenditure (all schemes)

LUXEMBOURG

(Bfrs. million)

Risks covered	Year	Receipts				Expenditure				
						Benefits				
		Total contributions	Grants from the State and other public authorities	Other receipts	Total receipts	in kind	in cash	Total	Other expenditure	Total expenditure
1. Sickness, maternity	1958	380	17	76	473	345	90	435	31	466
	1959	401	19	84	504	372	100	472	32	504
	1960	446	17	83	546	399	128	527	35	562
	1961	460	19	94	573	413	110	523	40	563
	1962	482	15	101	598	439	117	556	41	597
	1963	554	38	114	706	478	137	615	56	671
	1964	620	37	147	804	555	150	705	45	750
	1965	680	32	156	868	651	177	828	46	874
2. Disability, old age and survival	1958	1 505	502	248	2 255	3	1 664	1 667	112	1 779
	1959	1 511	565	270	2 346	3	1 750	1 753	124	1 877
	1960	1 602	581	297	2 480	4	1 788	1 792	130	1 922
	1961	1 645	619	319	2 583	4	1 845	1 849	145	1 994
	1962	1 669	819	379	2 867	4	1 994	1 998	151	2 149
	1963	1 860	747	415	3 022	3	2 219	2 222	176	2 398
	1964	1 955	1 220	445	3 620	4	2 742	2 746	182	2 928
	1965	2 297	1 252	475	4 024	3	3 096	3 099	202	3 301
3. Industrial accidents and occupational diseases	1958	335	29	26	390	30	255	285	30	315
	1959	356	30	30	416	31	269	300	33	333
	1960	366	38	33	437	30	291	321	43	364
	1961	364	31	43	438	30	291	321	36	357
	1962	370	30	49	449	29	290	319	36	355
	1963	371	36	54	461	30	309	339	46	385
	1964	400	37	55	492	33	328	361	45	406
	1965	414	46	61	521	37	359	396	46	442
4. Unemployment	1958	—	3	—	3	—	2	2	0	2
	1959	—	1	—	1	—	1	1	0	1
	1960	—	1	—	1	—	1	1	0	1
	1961	—	9	—	9	—	9	9	1	10
	1962	—	2	—	2	—	2	2	0	2
	1963	—	6	—	6	—	5	5	1	6
	1964	—	1	—	1	—	1	1	—	1
	1965	—	2	—	2	—	2	2	0	2
5. Family benefits	1958	341	50	0	391	—	380	380	31	411
	1959	351	78	1	430	—	424	424	8	432
	1960	368	95	2	465	—	465	465	10	475
	1961	388	97	2	487	—	479	479	11	490
	1962	405	111	2	518	—	493	493	11	504
	1963	432	111	2	545	—	523	523	15	538
	1964	475	154	1	630	—	614	614	13	627
	1965	489	209	1	699	—	687	687	12	699
6. Total	1958	2 561	601	350	3 512	378	2 391	2 769	204	2 973
	1959	2 619	693	385	3 697	406	2 544	2 950	197	3 147
	1960	2 782	732	415	3 929	433	2 673	3 106	218	3 324
	1961	2 857	775	458	4 090	447	2 734	3 181	233	3 414
	1962	2 926	977	531	4 434	472	2 896	3 368	239	3 607
	1963	3 217	938	585	4 740	511	3 193	3 704	294	3 998
	1964	3 450	1 449	648	5 547	592	3 835	4 427	285	4 712
	1965	3 880	1 541	693	6 114	691	4 321	5 012	306	5 318
7. Employers' and employees' contributions as percentage of share of households in the national income	1958	15.8								
	1959	16.0								
	1960	16.0								
	1961	15.8								
	1962	15.2								
	1963	15.5								
	1964	.								
	1965	.								
8. Benefits as percentage of national income	1958	16.6								
	1959	17.0								
	1960	16.1								
	1961	15.9								
	1962	16.6								
	1963	17.1								
	1964	.								
	1965	.								

TABLE 19

Social security receipts and expenditure (all schemes)

NETHERLANDS

(Bfrs. million)

Risks covered	Year	Receipts				Expenditure				
						Benefits				
		Total contributions	Grants from the State and other public authorities	Other receipts	Total receipts	in kind	in cash	Total	Other expenditure	Total expenditure
1. Sickness, maternity	1958	13 574	396	568	14 538	7 675	5 581	13 256	1 386	14 642
	1959	14 809	433	578	15 820	8 300	6 158	14 458	1 467	15 925
	1960	16 753	459	620	17 832	9 187	6 781	15 968	1 598	17 566
	1961	19 365	554	677	20 596	10 392	7 388	17 780	1 810	19 590
	1962	20 937	576	852	22 365	11 838	8 630	20 468	2 074	22 542
	1963	23 401	728	1 029	25 158	13 555	10 306	23 861	2 447	26 308
	1964	29 240	928	1 052	31 220	16 549	12 563	29 112	2 886	31 998
	1965	35 799	1 044	1 212	38 055	19 147	16 143	35 290	3 285	38 575
2. Disability, old age and survival	1958	30 417	3 913	5 294	39 624	—	24 852	24 852	795	25 647
	1959	31 170	3 669	6 363	41 202	—	25 937	25 937	879	26 816
	1960	33 839	3 263	6 757	43 859	—	30 177	30 177	1 175	31 352
	1961	39 463	7 377	8 155	54 995	—	34 569	34 569	1 261	35 830
	1962	43 763	6 826	8 652	59 241	—	38 486	38 486	1 456	39 942
	1963	56 741	6 141	9 720	72 602	—	47 963	47 963	1 602	49 565
	1964	67 140	6 641	10 589	84 370	—	58 041	58 041	1 804	59 845
	1965	85 923	9 039	12 354	107 316	—	74 307	74 307	2 000	76 307
3. Industrial accidents and occupational diseases	1958	1 932	124	208	2 264	203	1 130	1 333	353	1 686
	1959	2 076	104	228	2 408	209	1 192	1 401	372	1 773
	1960	2 256	94	250	2 600	214	1 219	1 433	397	1 830
	1961	2 576	107	280	2 963	247	1 406	1 653	438	2 091
	1962	2 255	124	304	2 683	273	1 545	1 818	471	2 289
	1963	2 885	123	334	3 342	332	1 605	1 937	491	2 428
	1964	3 206	200	367	3 773	345	1 889	2 234	571	2 805
	1965	3 210	230	440	3 880	386	2 063	2 449	632	3 081
4. Unemployment	1958	2 888	1 582	377	4 847	—	3 713	3 713	716	4 429
	1959	2 879	1 778	444	5 101	—	3 442	3 442	626	4 068
	1960	2 851	1 952	513	5 316	—	2 706	2 706	557	3 263
	1961	3 234	2 075	649	5 958	—	2 467	2 467	499	2 966
	1962	3 200	2 044	753	5 997	—	3 291	3 291	620	3 911
	1963	3 375	2 625	799	6 799	—	6 109	6 109	910	7 019
	1964	4 039	2 759	883	7 681	—	4 254	4 254	708	4 962
	1965	4 544	3 325	1 058	8 927	—	5 110	5 110	808	5 918
5. Family benefits	1958	8 158	345	204	8 707	—	8 871	8 871	136	9 007
	1959	8 630	330	197	9 157	—	9 195	9 195	142	9 337
	1960	10 362	203	423	10 988	—	10 421	10 421	161	10 582
	1961	11 267	206	453	11 926	—	11 489	11 489	165	11 654
	1962	11 773	218	523	12 514	—	11 701	11 701	178	11 879
	1963	15 297	201	727	16 225	—	15 527	15 527	342	15 869
	1964	18 648	237	705	19 590	—	19 325	19 325	372	19 697
	1965	20 255	269	736	21 260	—	21 528	21 528	442	21 970
6. Total	1958	56 969	6 360	6 651	69 980	7 878	44 147	52 025	3 386	55 411
	1959	59 564	6 314	7 810	73 688	8 509	45 924	54 433	3 486	57 919
	1960	66 061	5 971	8 563	80 595	9 401	51 304	60 705	3 888	64 593
	1961	75 905	10 319	10 214	96 438	10 639	57 319	67 958	4 173	72 131
	1962	81 928	9 788	11 084	102 800	12 111	63 653	75 764	4 799	80 563
	1963	101 699	9 818	12 609	124 126	13 887	81 510	95 397	5 792	101 189
	1964	122 273	10 765	13 596	146 634	16 894	96 072	112 966	6 341	119 307
	1965	149 731	13 907	15 800	179 438	19 533	119 151	136 684	7 167	145 851
7. Employers' and employees' contributions as percentage of share of households in the national income	1958	16.0								
	1959	16.0								
	1960	15.9								
	1961	16.5								
	1962	16.5								
	1963	18.5								
	1964	19.0								
	1965	20.7								
8. Benefits as percentage of national income	1958	13.4								
	1959	13.1								
	1960	13.1								
	1961	13.4								
	1962	13.9								
	1963	16.0								
	1964	16.2								
	1965	17.7								

TABLE 20

Receipts from and expenditure transferred to other schemes

(Bfrs. million)

Risks covered	Year	Receipts from other systems						Expenditure transferred to other systems					
		Belgium	Germany	France	Italy	Luxembourg	Netherlands	Belgium	Germany	France	Italie	Luxembourg	Netherlands
1. Sickness, maternity	1958	334	15 815	—	3 712	61	493	—	309	—	335	0	354
	1959	472	14 962	—	5 001	69	497	—	60	—	259	0	385
	1960	365	15 656	—	6 530	71	534	—	24	—	477	0	420
	1961	284	18 119	3 992	8 319	81	578	—	25	—	380	1	491
	1962	238	22 933	44	9 003	89	722	—	—	—	415	0	587
	1963	579	26 096	1 957	13 633	98	920	—	12	1 938	496	0	774
	1964	517	29 948	8 840	.	110	971	—	12	2 674	.	0	953
	1965	639	31 162	9 834	1 446	123	1 095	—	37	2 814	820	1	1 034
2. Invalidity, old age and survival	1958	8	11 043	5 348	1 430	16	34	9	24 169	6 737	3 281	77	—
	1959	10	10 345	867	1 940	16	34	0	23 286	1 869	6 517	84	45
	1960	11	11 386	514	2 442	17	32	11	25 846	4 331	6 392	89	271
	1961	23	12 522	1 267	2 277	18	30	54	29 685	7 972	5 770	97	309
	1962	24	18 999	1 388	3 080	19	35	58	40 711	2 447	12 176	107	319
	1963	60	19 804	3 045	3 397	21	75	60	43 685	5 100	13 097	116	326
	1964	12	14 085	7 194	.	10	52	12	41 366	10 805	.	118	358
	1965	11	28 328	7 673	102 223	12	13	11	56 780	10 696	96 956	134	333
3. Industrial accidents and occupational diseases	1958	—	12	425	—	—	—	—	12	426	131	1	—
	1959	—	12	278	—	—	—	—	12	278	139	1	—
	1960	—	12	265	23	—	—	—	12	265	323	1	—
	1961	—	12	283	—	—	—	—	12	283	173	1	—
	1962	—	12	365	—	—	—	—	25	365	206	2	—
	1963	—	12	296	—	—	—	—	338	296	255	1	—
	1964	—	12	1 119	.	—	—	82	1 240	1 119	.	2	—
	1965	.	833	2 322	—	—	—	—	1 280	2 322	—	2	—
4. Unemployment	1958	—	—	—	—	—	—	334	2 380	—	1 123	0	329
	1959	0	—	—	—	—	—	472	1 961	—	1 463	0	269
	1960	0	—	—	—	—	—	365	1 172	—	1 829	0	209
	1961	0	—	—	160	—	3	285	931	—	1 537	0	166
	1962	—	—	—	—	—	10	238	1 208	—	2 554	0	261
	1963	0	—	—	.	—	28	579	1 877	—	2 789	0	508
	1964	—	—	—	—	—	14	517	1 427	—	.	0	294
	1965	0	—	—	—	—	11	639	1 405	—	5 628	0	357
5. Family benefits	1958	1	—	7 503	—	—	121	—	—	6 114	—	—	16
	1959	1	—	8 611	—	1	134	—	—	7 606	—	1	19
	1960	1	—	9 255	—	2	353	—	—	5 451	—	2	20
	1961	1	—	13 000	—	2	371	—	—	10 287	—	2	15
	1962	3	—	8 719	—	2	421	—	—	7 704	—	2	21
	1963	4	—	15 331	—	2	609	—	—	13 295	—	2	24
	1964	9	—	18 292	.	1	568	—	—	20 847	.	1	—
	1965	11	—	17 786	—	—	605	0	821	21 783	0	—	—
6. Miscellaneous	1958	—	—	—	253	—	—	—	—	—	0	—	—
	1959	—	—	—	246	—	—	—	—	—	0	—	—
	1960	—	—	—	323	—	—	—	—	—	0	—	—
	1961	—	—	—	312	—	—	—	—	—	3	—	—
	1962	—	—	—	451	—	—	—	—	—	3	—	—
	1963	—	—	—	496	—	—	—	—	—	0	—	—
	1964	—	—	—	.	—	—	—	—	—	.	—	—
	1965	—	—	—	366	—	—	—	—	—	68	—	—
7. Total	1958	343	26 870	13 276	5 395	77	648	343	26 870	13 277	4 870	78	699
	1959	483	25 319	9 756	7 187	86	665	472	25 319	9 753	8 378	86	718
	1960	377	27 054	10 034	9 318	90	919	376	27 054	10 047	9 021	92	920
	1961	308	30 653	18 542	10 908	101	982	339	30 653	18 542	7 863	101	981
	1962	265	41 944	10 516	12 694	110	1 188	296	41 944	10 516	15 354	111	1 188
	1963	643	45 912	20 629	17 526	121	1 632	639	45 912	20 629	16 637	120	1 632
	1964	538	44 045	35 445	.	121	1 605	611	44 045	35 445	.	121	1 605
	1965	661	60 323	37 615	104 035	137	1 724	650	60 323	37 615	103 472	137	1 724

CHAPTER II

Primary redistribution of incomes through social security

I - General considerations

50. In view of the complexity of the subject it should from the outset be made clear that the present study covers solely the effects on the distribution of incomes produced by social security measures, and not the effects produced by other forms of State intervention in the economic and social life of the country in question (education, defence, etc.).

Moreover, it may be useful to point out that only the direct effects of these measures on the distribution of incomes will be examined in this chapter; their longer-term effects will be studied in the next chapter.

51. The study of the direct effects could be formulated as follows: "Given the initial distribution of the national income among the owners of the factors of production, resulting, by virtue of the relevant contracts or laws, from the allocation to each of his share, to make a statistical evaluation of the changes brought about in this distribution by the impact of social security measures." The study of longer-term effects could, in turn, be formulated as follows: "Given a system describing the analytical relations between production, distribution and use of income in a given country, with or without social security, to examine in accordance with certain hypotheses the effects which the introduction of a system of social security (or a change in the existing system) could have on the variables or the parameters of the system."

52. Finally, in order to avoid dangerous ambiguities, it may be useful to stress that the term "redistribution" used in the title of this chapter means the process by which social security bodies (the State or autonomous bodies) acquire through contributions or taxes (direct or indirect), part of the income earned by various categories of recipient and then transfer the monies thus acquired back to the same or other categories of person. In the statistical tables at the end of the chapter there will in general be no distinction between effects due to income transfers, i.e. from an unrequited transfer of income from one group of income recipients to another and effects resulting from a division in time of total remuneration and current pay (deferred income): this is not so much because the distinction is not worthy of attention, but because, with the statistics at present available, it is very difficult to make.

53. The effects of social security measures on the initial distribution of incomes can be examined by considering the incomes of different categories of persons classified according to one of the following criteria: the socio-economic status of income recipients, which gives rise to a distribution called horizontal; the amount of income received by each recipient, which gives rise to a distribution called vertical; and, finally, the region in which the recipients reside, which gives rise to a so-called territorial distribution.

54. When an analytical examination is being made of the factors which determine changes in the initial distribution of incomes, it may be useful to recall that social security has in the past been inspired by two different concepts: the one, very broad, may be ascribed to Beveridge and aims at protecting the individual as member of a community, while the other, more limited, aims at protecting the individual taking part in productive activity.

At present, however, there is no system of social security which is inspired solely by the one or the other of these concepts; the rigidity of the systems inspired by one concept only has little by little been tempered by measures based on the other.

55. When the factors which exercise an influence on the distribution of incomes are analysed, it is found that they can be divided into three groups: factors relating to the form of management, factors relating to the nature of the receipts which provide the means for social security to achieve its objectives, and factors relating to the nature of benefits.

It is also apparent that the distribution of derived incomes, i.e. the distribution which is brought about by the action of social security on the initial or primary distribution, is the result of the combined action of all these groups.

The effects on the distribution of incomes produced by the form of management of social security differ when the distribution is made under a single system, covering all the risks and allowing transfers of incomes from one form of insurance to another, and when the distribution is made through several systems which form so many

watertight compartments without possibility of transferring funds from one system to another.

56. The receipts which provide the social security system with the means to fulfil its purpose can come from contributions or from taxes; it is evident that the effects on the initial distribution of incomes will vary considerably. Indeed, the first system (contributions) affects only the insured, while the second (taxes) concerns all sections of the community. If taxation is used as a means of raising the money, its effects will differ with the use of direct or indirect taxes, and so a distinction can be made between economic systems where direct taxation prevails and those where indirect taxation is the prevailing source of revenue. In the first case, taxation can reinforce social security measures in the task of reducing inequalities in the distribution of incomes; in the second, it may cancel out some of the effects achieved.

57. A distinction should be made between benefits in kind and cash benefits. Benefits in kind do not change the monetary distribution of incomes, but they do change real distribution inasmuch as they lead to a different distribution of goods and services among the various sections of the community. The effect of cash benefits will differ when the benefits are directly or indirectly connected with the flow of income prior to the occurrence of the event which interrupted that flow (for example, contributory pensions) and when they are independent of the flow of income (for example, non-contributory pensions and family allowances).

II - Methods and criteria for computing the effects of social security measures on the distribution of incomes

58. There are two main methods by which the direct effects of social security measures on the distribution of incomes can be computed. The first could be termed macro-economic, and is identical with the method used in national accounting. It aims at determining the global flows which at national level or at the level of the largest possible number of economic transactors provide a basis for social security action. This method, however, cannot be used to ascertain the effects of social security measures on the initial distribution of incomes amongst those who dispose of the factors of production, and only brings out the total amounts of social security receipts and expenditure.

59. The second, or micro-economic, method aims at determining the effects of social security measures on the initial distribution of incomes, taking as a base a model in which the recipients of income are classified by the three criteria referred to in section 53 above.

On the other hand, it is evident that if the effects of social security measures are to be studied by this method, the tools of research used with the first method (accounting method) are no longer adequate. There will, therefore, have to be inquiries of a different nature, and the methods used will have to vary with the statistical material available.

60. Before proceeding to a more thorough examination of the methods of computing the effects of social security measures, three preliminary problems must be solved, namely, the form of financing social security, the definition of the economic nature of employer contributions, and, finally, the economic unit to be adopted for the classification of incomes.

As to the form of financing, it is noted that social security can be financed:

a) By contributions paid on behalf of or by the insured;
b) By budgetary subsidies or taxes assigned for the purpose;
c) By a combination of both the above methods.

61. If social security is administered by autonomous bodies, expenditure is generally covered by contributions from either workers or employers. The amount of this expenditure can be equal to the amount of contributions, higher or lower. In the first case, the whole of the income raised is distributed but no more; in the second case, the distributed income exceeds the income raised, and any deficit must be covered from other sources; and in the third case, the distributed income is lower than the income raised and the surplus represents savings for the institutions concerned.

If social security is administered by the State, expenditure is covered by a portion of the receipts of the State. As it is not possible to correlate directly State expenses with receipts, it is generally assumed that the various State receipts contribute proportionately to covering expenses. Finally, if social security is administered under a mixed system involving autonomous bodies and the State, the social security budget is constituted by the combined receipts and expenses of the autonomous bodies and a portion of State receipts and expenditure.

62. On the economic nature of employer contributions, it should be noted from the outset that reference to these contributions will be made simply from the angle of the problem investigated in this chapter; comparisons do not therefore indicate assumption of any ideological position. It is evident, on the other hand, that any study in this field calls for precise hypotheses, i.e. conventions on the nature of contributions.

63. In terms of these conventions, the employer's statutory contributions can be considered as a share of his income or as a share of the worker's remuneration; the effects will evidently differ widely with the convention adopted. Indeed, if the first convention is adopted, it will be found that income is being transferred from employers to employees, while if the second is adopted, the transfers will only be between the workers themselves. On this point it may be useful to recall that certain national accounting systems have settled the question by including employers' contributions in the remuneration of wage-earners, but this is not the practice in all countries.

For the purposes of this chapter, the first method has been adopted, as the majority of national accounting systems use it. Whenever it is necessary to deviate from this method in analysing the statistics of this or that country, the point will be expressly stated.

64. Finally, it should be noted that for specific purposes employers' contributions can be represented in a different way; for instance, in the enquiries carried out in France on the redistribution of incomes (see secs. 98 to 110), employers' contributions are assimilated to indirect taxes, this method being based on considerations valid for a study of the type found in Chapter III.

65. On the choice of the economic unit to be adopted in the classification of incomes, both theory and practice at present support adoption of the family or household. It has rightly been pointed out that the distribution of resources among the various occupations is related not to the needs of the individual, but of the household.

When the household is taken as unit of classification, transfers of income within the family will of course offset each other; this is an unavoidable disadvantage inherent in the very nature of the research, which in the economic-social field has to work on groups of units for the purpose of finding out what are the regular factors applying to living in a family and to inheritance.

66. As already mentioned, social security can be administered directly by the State or indirectly by autonomous bodies or jointly by a combination of both methods. If it is administered by autonomous bodies, social security receipts and expenditure may be in balance, may show a profit or may close with a deficit.

In studying the effects of social security, account may be taken of the profit or deficit, or it may be ignored. In this chapter, the second alternative has been adopted, as the first would have meant attributing the profit or the deficit to particular groups of income recipients on the basis of criteria which are not always plausible. Essentially, in this alternative the initial distribution of income is taken as a base and classified in accordance with one of the features already mentioned, social security contributions are deducted and benefits are added. It is evident that the number of income groups in the distribution will vary with the features on which the classification is to be made.

67. Generally, if social security is administered jointly by the State and autonomous bodies, for a given group or category of incomes, the equation will be:

$$\hat{H} = H - [(T_d+T_i) + (O_l+O_i)] + (S_f+T+S),$$

in which $\hat{H}$ represents the amount of income of a given group including the effects of social security measures, H indicates the amount of income of the group or category obtaining at the initial distribution; T_d is the amount of direct taxes, T_i the amount of indirect taxes; O_l the amount of employees' contributions, O_i the amount of employers' contributions, S_f benefits in kind, T cash benefits, and S payments for specific purposes (1).

68. While the problems relating to evaluation of the effects which social security measures have on the breakdown of incomes by class will be dealt with later, a word should be said on certain questions relating to assessment of the effects of social security measures on the breakdown of incomes by socio-economic categories and by regions.

(1) Here direct taxes are any taxes levied directly on incomes and which vary in amount with these incomes; indirect taxes are those which tax production of and dealings in goods and services, thus reducing indirectly the purchasing power of the taxpayer. Income from property consists of receipts in the form of interest, annuities, etc.
Benefits in kind are represented by goods and personal services, generally health services provided by social security bodies or the State to members of the community without any direct counterpart. Cash transfers consist of payments which increase the liquidity of the recipients who then decide upon their use. Finally, payments for specific purposes are transfers which are made to members of the community to pay for certain goods or services and which cannot therefore be used for other purposes.

For the breakdown of incomes by socio-economic categories a distinction must be made between cases where social security expenditure is covered by contributions (from employees and employers) and cases where it is covered by taxes (direct and indirect) or by a combination of both methods.

69. In the first case, steps must be taken to determine for each socio-economic category the amount of contributions paid by employees in that category. The amount of contributions which constitute a statutory charge on the employers must also be determined, and according to the hypothesis adopted in the present chapter this is included in the employees' incomes.

Indeed, on the assumption that employers' contributions are a share of the employees' income, the final income is arrived at by adding benefits to the initial income and subtracting the contributions paid by employees and employers. The criteria adopted in the French inquiries, on the other hand, lead to a lower final income, as benefits are added to and employees' contributions deducted from the initial income. This lower figure is justified by the French experts on the grounds that employers' contributions bring about a rise in prices which reduces the purchasing power of the members of the community.

70. Where the State covers social security expenditure from taxes, a distinction must be made between direct and indirect taxes. An evaluation of the burden of direct taxation on particular socio-economic categories could be carried out by an inquiry on the lines of the French inquiry. But, it is less easy to evaluate the indirect taxes affecting various socio-economic categories. This would, indeed, be possible only if information were available on the breakdown of consumption by socio-economic categories and groups of goods, and also on the portion of taxes affecting each category of goods. Data of this type could, however, be collected by inquiries on family budgets and by studies carried out within the framework of the construction of input-output tables.

71. Calculation of the effects of social security measures on the breakdown of incomes by regions serves to establish whether and how far one or more regions of the country under consideration are socially "active" or "passive" in the sense that the amounts they contribute exceed the benefits they draw, or vice versa. It should be pointed out in this connection that the evaluation is made on the hypothesis that the income formed in a given territory is paid out in full to the economic transactors of that territory.

In order to study the effects of social security measures on the regional breakdown of income, a distinction must be made—as was done in the evaluation of their effects on the breakdown of incomes by socio-economic categories—between cases where social security expenditure is covered by contributions, and cases where it is covered by taxes or by a combination of both methods.

72. In the first case, evaluation of the effects of social security on the breakdown of incomes by region does not present any great difficulties if, for example, there is a regular census similar to that operated in Italy. Indeed, it is possible to determine for Italy both the amount of employers' and workers' contributions for economic units operating in a given region, and the amount of benefits received by all beneficiaries residing in a given region.

73. In the second case, a distinction should be made according to whether expenditure is met from direct or from indirect taxes.

The evaluation of direct taxes which fall on physical persons of a given territory can be carried out without any great difficulties. The same may be said, on the basis of the general hypothesis taken for assignment of the incomes produced, of the direct taxes payable on company profits, that is to say, if it is accepted that these profits reduce by a corresponding amount the total incomes of the taxpayers who live in the territory where these companies have their headquarters.

In the case of indirect taxes, a distinction must be made between those which affect consumption and those which affect transfers of wealth. It is possible to evaluate taxes on consumption if information is available on consumption by categories of goods and by regions, together with the rates of tax on the individual categories of goods or services.

Taxes on transfers of wealth can, on the contrary, be found in tax statistics, and these usually give the yield by region.

III - Evaluation of elements for calculating the effects of social security measures on the breakdown of incomes by income brackets

74. Let us now define with greater precision the computational procedures that could, in accordance with the first criterion shown in secs. 66 and 67, be used to determine the elements which appear in the above equation (sec. 67). These procedures are formulated in connection with the breakdown of income by income

bracket, but they are also largely valid for studying its breakdown by socio-economic categories or by regions.
It should be pointed out from the start that the methods used to calculate the flows dealt with below depend essentially upon the availability of statistical data in the various countries. It is, therefore, only by way of example that reference is made to the procedures suggested by some authors on the basis of the statistical data available in their own countries.

75. The following aspects will be dealt with below:

(*a*) Initial distribution of incomes;

(*b*) Social security benefits;

(c) Social security levies.

INITIAL DISTRIBUTION OF INCOMES

76. First of all, it must be borne in mind that the term "initial" is used to designate the distribution of original factor incomes, i.e. of the incomes which go to the factors of production as remuneration for their contribution to production.
In countries in which an income tax system is in operation, the distribution of "incomes" by income group can be obtained from the statistics on taxation. It must however be borne in mind that this distribution is incomplete in that it does not include:

(*a*) Exempted income;

(*b*) Incomes other than personal incomes, mainly undistributed company profits;

(*c*) Incomes from "property" held by the public authorities.

77. It may be useful to note that the incomes given under (*b*) and (*c*) can be found in the statistics prepared in most countries for computation of the national accounts.

On the other hand, it should be noted that if incomes which actually accrued to economic transactors are taken as a criterion, incomes under (*c*) must be excluded from the calculation of initial distribution. The exempted incomes referred to under (*a*) must, on the other hand, be included.

78. It is arguable—as some maintain—whether incomes given under (*b*), i.e. undistributed company profits, should be excluded since, without actually giving rise to a flow from companies to individuals, they modify the wealth of the latter by altering the value of shares or other securities held by individuals.

It may be useful to recall the procedures used by some authors in the determination of exempted incomes. It should be noted first of all that the division of "persons in receipt of income" by income group, from a fiscal point of view, generally refers neither to the person in receipt of the income nor to the household taken as an "economic" or census unit, but to families taken as a "fiscal" unit.

79. The number of physical persons in each fiscal income group could be computed by multiplying the number of fiscal families in each group by the average size of families as shown on the tax returns. The amount of exempted incomes is then the difference between the total population and the fiscal population thus computed.
If it were subsequently found necessary to include the undistributed profits of companies in the distribution of fiscal incomes, they could be imputed to the various classes in proportion to the companies' ordinary shares held by individuals, extracting the information on the distribution from fiscal statistics which in certain countries record inherited wealth by type of property and by income group.

SOCIAL SECURITY BENEFITS

80. Before considering social security expenditure and receipts, it should be pointed out that their distribution by income group is frequently made on the basis of the distribution of wage-earners' income by wage group.

In view of the conventional classification of social security expenditure (cf. note 1, page 54), the first benefits in kind to be considered consist essentially of health benefits.

81. Some authors have suggested distributing the amount of those benefits between the different income groups in proportion to the number of workers in each pay group shown in the breakdown of income from labour, thus assuming that the incidence of sickness and the health benefits per worker are the same for each class. The hypotheses implied in this criterion do not however always correspond with the facts, and it must consequently be considered at least inadequate.

It is also difficult to find a suitable criterion for the allocation of "subsidies" or refunds, in the sense of money transfers for the purchase of goods or certain services, generally accommodation or foodstuffs.

82. Cash benefits formed from monetary transfers which increase the recipients' liquidity consist basically of:

(*a*) Invalidity, old age and survivors' pensions;

(*b*) Family allowances;

(*c*) Unemployment benefit;

(*d*) Sickness benefit;

(*e*) Public assistance (in cash).

Regarding the distribution of the benefits shown under (*a*), the suggestion by certain authors that all the pensions or an important part thereof be assigned to the lowest income group is somewhat perplexing. This criterion must, therefore, be adopted with considerable reservations or rejected out of hand if statistical data are available which render possible a distribution more in line with the facts.

83. Similar reservations will apply to the suggestion that family allowances be distributed between the different pay groups in proportion to the number of workers, a criterion which implies that the number of dependent persons per worker and the allowance per dependent person are identical in each group.

Unemployment benefit could be allocated to the various groups in proportion to income from work, on the assumption that unemployment is uniform in the various classes.

What has been said on health benefits applies equally to sickness benefits.

Finally, all expenditure on public assistance (cash transfers) can rightly be assigned to the lowest income group, since public assistance is generally given only to the most needy.

SOCIAL SECURITY RECEIPTS

84. In accordance with the classification previously adopted (secs. 66 and 67), social security receipts are divided below into two categories: the first, C_1, comprises workers' and employers' contributions and direct taxes; the second, C_2, comprises indirect taxes.

C_1 — Workers' and employers' contributions, direct taxes

85. Employers' contributions are generally directly or indirectly proportional to remuneration (percentage basis) or are a fixed sum per day of work; the breakdown of earned incomes by pay group may be a valid base for their distribution—which could prove difficult owing to the existence of maxima and minima. But the wealth of statistical material available on the subject means that it will be possible to overcome the difficulties.

Once the amount of the workers' contributions is known, there will be no great difficulty in computing the amount of the employers' contributions, seen as a supplement to remuneration.

On direct taxes, it should be noted that regulations on these vary from one country to another. In some countries they are based fundamentally on a single tax, the income tax, while in others they are based on a number of different taxes.

86. Let us for the moment leave aside the latter case and consider the countries which operate a single income tax. It is found that allocation of the yield from tax on personal income by income group does not present any great difficulties, since fiscal statistics furnish the requisite information. Even tax on income other than personal income can easily be distributed, thanks to the criteria adopted for the allocation of undistributed and non-personal income.

In countries in which a single income tax is in operation, inheritance tax is also of some importance. For its allocation by group, it should be remembered that in some countries tax statistics make it possible to distinguish between incomes coming from work and those drawn from capital, i.e. earned and unearned income.

87. From these statistics it is possible to make a breakdown by unearned income group of hereditary wealth and to determine the corresponding yield from the tax on wealth. It is then easy to assign to each income group of the initial distribution the corresponding yield from inheritance tax.

C_2 — Indirect taxes

88. Two categories must be distinguished in the allocation of indirect taxes by income groups:

(*a*) Indirect taxes on physical units or the unit value of certain goods and services (specific taxes on consumer goods);

(*b*) Indirect taxes on total output, which become part of the aggregate cost of the relevant goods and services.

On the allocation of indirect taxes in the first of these categories, it should be noted that data on indirect taxes classified by type of goods or services, and also data on consumer expenditure by income group and by type of goods or services, are available in a number of countries.

89. For the second category, on the other hand, a breakdown by groups of goods or services is available. It could, however, be worked out without too much difficulty, especially for countries where there are input-output tables. From these it is possible to find the amounts spent on wages and salaries, on motor fuels, on transport, etc. in the several sectors (formed of homogeneous goods or services), and thence to proceed to allocation of the taxes by products or by services.

On the basis of the distribution of consumption by income group and by type of goods or services, it will also be possible to work out the allocation by class of income of the taxes in the second category.

90. The results of the investigation can be tabulated as follows:

Effects of social security measures on distribution of incomes

Income groups	Initial income	Benefits	Contributions or taxes	Benefits less payments (3) — (4)	Final income (2) + (5)
(1)	(2)	(3)	(4)	(5)	(6)
.....					
.....					
.....					
Total, all groups					

IV - Attempts to measure effects of social security measures on distribution of income in EEC countries

91. Unfortunately, few EEC countries have available the statistical material needed to measure the effects of social security on the lines shown in the preceding pages. Only for Germany, France and Italy are data available on the transfers operated by social security, i.e. vertical, horizontal and geographical transfers—and even this material is still too general. The material has in any case been drawn from inquiries for which different methods were used in various countries, and they are not therefore fully comparable.

92. For Germany, a study has been published on the redistribution of both family and individual incomes under the impact of social security measures; redistribution is looked at on the basis of socio-economic categories and of income groups.
The data used in the tables are drawn from a study made by the Institute for Applied Economic Research, Tübingen. (1)

It should be pointed out that the social security expenditure taken into consideration for the inquiry referred to above includes expenditure for war victims and victims of political events and of natural calamities, as well as expenditure on social assistance which, according to the definition adopted by the working party, should on the contrary have been excluded.

93. The method used to determine the contributions and direct and indirect taxes levied on various categories of income, classified by socio-economic categories or by income groups, and the benefits transferred, is substantially similar to that stated earlier in the present chapter.

For the determination of benefits in kind, as specific information was not available, a method of computation was used which was based essentially on the number of persons in receipt of benefit, worked out in the light of the provisions in force.

94. Benefits in kind given as part of social assistance were allocated mainly to the lowest three income groups (from DM 0 to DM 2,400 per year), in proportion to the number of persons or families in each group.

Benefits in kind given as part of sickness insurance were allocated to the 10 groups whose average income does not exceed DM 15,000 per year, proportionately to the number of families or of persons in receipt of benefit in each group.

Finally, the remaining benefits in kind were distributed among all the groups of income in proportion to the number of families or of persons in receipt of an income in each group.

(1) Klaus-Dieter Schmidt, Ursula Schwarz, Gerhard Thiebach: *Die Umverteilung des Volkseinkommens in der Bundesrepublik Deutschland 1955 und 1960* (Redistribution of national income in the Federal Republic of Germany, 1955 and 1960) - Institut für angewandte Wirtschaftsforschung, Tübingen, Schriftenreihe Vol. IV, Tübingen, 1965.

TABLE 21

Redistribution of family incomes through social security in the Federal Republic of Germany, by socio-economic categories - 1955 and 1960

Socio-economic categories (1)	Number of households ('000)		Initial distribution of incomes (DM '000 000)		Benefits (DM '000 000)		Contributions and taxes (DM '000 000)		Excess of benefits over contributions (DM '000 000)		Final distribution of incomes			
											Absolute figures (DM '000 000)		Final as % of initial incomes	
	1955	1960	1955	1960	1955	1960	1955	1960	1955	1960	1955	1960	1955 (12:4) 100	1960 (13:5) 100
	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Wage-earners	5 640	5 925	40 580	65 450	5 943	10 900	10 251	18 724	— 4 308	— 7 824	36 272	57 626	89	88
2. Salaried employees and civil servants	3 310	3 650	31 200	53 900	2 635	3 600	7 464	13 255	— 4 829	— 9 655	26 371	44 245	85	82
3. Self-employed	2 830	2 840	46 290	64 340	1 615	2 140	6 724	7 279	— 5 109	— 5 139	41 181	59 201	89	92
4. Others (2)	4 590	5 000	7 560	13 300	14 847	24 620	2 481	4 068	+ 12 366	+ 20 552	19 926	33 852	264	255
Total	16 370	17 415	125 630	196 990	25 040	41 260	26 920	43 326	— 1 880	— 2 066	123 750	194 924	—	—

Source: Schmidt, Schwarz, Thiebach, *op. cit.*, pp. 153-156 and 171-175.
(1) Those persons whose income is mainly drawn from social benefits.

TABLE 22

Redistribution of family incomes through social security in the Federal Republic of Germany by income groups - 1955 and 1960

Gross income in DM per annum	Number of households ('000)		Initial distribution of incomes (DM '000 000)		Benefits (DM '000 000)		Contributions and taxes (DM '000 000)		Excess of benefits over contributions (DM '000 000)		Final distribution of incomes			
											Absolute figures (DM '000 000)		Final as % of initial incomes	
	1955	1960	1955	1960	1955	1960	1955	1960	1955	1960	1955	1960	1955 (12 x 4) 100	1960 (13 x 5) 100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0 to < 1 200	3 360	2 876	1 144	1 274	8 628	11 699	98	115	+ 8 530	+ 11 584	9 674	12 858	846	1 009
1 200 to < 2 400	376	651	792	1 118	1 687	3 697	243	236	+ 1 444	+ 3 461	2 236	4 579	282	410
2 400 to < 3 600	904	421	2 701	1 263	1 591	2 494	766	351	+ 825	+ 2 143	3 526	3 406	131	270
3 600 to < 4 800	1 596	421	6 702	1 767	2 127	2 164	1 903	565	+ 224	+ 1 599	6 926	3 366	103	191
4 800 to < 6 000	1 896	450	10 231	2 428	2 408	1 827	2 758	1 026	— 350	+ 801	9 881	3 229	97	133
6 000 to < 7 200	1 688	1 169	11 140	7 709	2 110	1 734	3 006	2 412	— 896	— 678	10 244	7 031	92	91
7 200 to < 8 400	1 328	1 271	10 358	9 915	1 733	2 001	2 799	2 916	— 1 066	— 915	9 292	9 000	90	91
8 400 to < 9 600	1 085	1 426	9 769	12 844	1 247	2 425	2 524	3 550	— 1 277	— 1 125	8 492	11 719	87	91
9 600 to < 12 000	1 454	2 244	15 699	24 245	1 593	3 910	3 715	6 672	— 2 122	— 2 762	13 577	21 483	87	89
12 000 to < 15 000	1 112	2 298	14 960	30 960	913	3 410	3 074	7 914	— 2 161	— 4 504	12 799	26 456	86	86
15 000 to < 18 000	608	1 562	9 872	25 702	479	1 954	1 932	5 415	— 1 453	— 3 461	8 419	22 241	85	87
18 000 to < 24 000	500	1 458	8 877	30 539	245	1 964	1 512	5 632	— 1 267	— 3 668	7 610	26 871	86	88
24 000 and over	463	1 168	23 385	47 226	279	1 981	2 590	6 522	— 2 311	— 4 541	21 074	42 685	90	90
Total	16 370	17 415	125 630	196 990	25 040	41 260	26 920	43 326	— 1 880	— 2 066	123 750	194 924	—	—

Source: Schmidt, Schwarz, Thiebach, *op. cit.*, p. 153 and p. 171.

95. Table 21 below shows the breakdown of family incomes by socio-economic categories for the years 1955 and 1960. It is apparent that, as a result of the transfers due to social security measures, the incomes of the first three socio-economic categories (wage-earners, salaried staff and civil servants, and the self-employed) have suffered an appreciable reduction (columns 12 and 13) which is heavier for salaried staff and civil servants than for wage-earners and the self-employed; conversely, the income of the last category, the "Others" (persons living on private means, pensioners, etc.), has increased substantially (about 1 1/2 times).

96. Table 22 shows the redistribution of family incomes by income group for the years 1955 and 1960. It shows that the income groups which benefited from transfers are, for 1955, the four lowest, with incomes not exceeding DM 4,800, and for 1960 the five lowest, with incomes not exceeding DM 6,000.

In general, it is apparent that on passing from the lowest to the highest income groups the benefit decreases or the reduction becomes more pronounced.

97. Examination of the effects which social security measures have on the various income groups rearranged by socio-economic categories shows (comparison with Table 23) that, as in the case of family incomes (Table 21), it is in the first three socio-economic categories that incomes are reduced, while in the last category namely "Others", income rises in the ratio of one to eight.
Finally, an examination of the data in Table 24, which gives individual incomes by income group for 1960, leads to the same conclusions as those drawn from Table 22, already commented upon in connection with family incomes.

98. Two examples of horizontal and geographic transfers are given for France. For social security transfers (in the broad meaning of the term) by occupational categories, use was made of the main elements of a study (1) based on an extensive inquiry into the average means of households located in France in 1962, classified according to the occupational categories of the heads of families. The figures in this inquiry do not take into account employers' contributions to social security or the indirect taxes allocated to social security. Consequently, it was not possible to use the methods suggested in secs. 62 and 63. In addition, the shortcomings of the sources and the approximate character of certain computations mean that the conclusions are given only with considerable reservations.

99. Tables 25 and 26 give an evaluation of the primary incomes per household (Table 25) as produced by the "market economy", and the weighted incomes which take into account the average number of persons per household (Table 26). Social transfers (assistance, subsidies and social benefits, gross and net of the contributions paid by the insured) are shown in lines 3 to 6 (Table 5).

It is found that the initial weighted incomes (Table 26, line 2 p) vary in the proportion of 1 to 5.75 (from the

(1) The basic study, giving method and sources, was published in *"Etudes et Conjoncture"* - INSEE, July 1966.

TABLE 23

Redistribution of individual incomes through social security in the Federal Republic of Germany by socio-economic categories - 1960

Socio-economic categories	Number of persons in receipt of incomes ('000)	Initial distribution of incomes (DM '000 000)	Benefits (DM '000 000)	Contributions and taxes (DM '000 000)	Excess of benefits over contributions (DM '000 000)	Final distribution of incomes	
						Absolute figures (DM '000 000)	Final as % of initial incomes (7 : 8) 100
1	2	3	4	5	6	7	8
1. Wage earners	12 970	80 340	11 300	22 064	— 10 764	69 576	87
2. Salaried employees	4 795	59 010	2 740	13 698	— 10 958	48 052	81
3. Civil Servants	1 395						
4. Self-employed	3 175	54 300	1 640	5 658	— 4 018	50 282	93
5. Others (1)	6 535	3 340	25 580	1 906	+ 23 674	27 014	809
Total	28 870	196 990	41 260	43 326	— 2 066	194 924	—

Source: Schmidt, Schwarz, Thiebach, *op. cit.*, p. 9.
(1) Cf. note to Table 1.

TABLE 24

Redistribution of individual incomes through social security in the Federal Republic of Germany by income groups - 1960

Yearly Gross Income	Number of persons in receipts of incomes ('000)	Initial distribution of incomes (DM '000 000)	Benefits (DM '000 000)	Contributions and taxes (DM '000 000)	Excess of benefits over contributions (DM '000 000)	Final distribution of incomes	
						Absolute figures (DM '000 000)	Final as % initial incomes
1	2	3	4	5	6	7	8
0 to < 1 200	2 952	3 238	21 495	472	+ 21 023	24 261	749
1 200 to < 2 400	488	2 407	4 097	504	+ 3 593	6 000	249
2 400 to < 3 600	411	4 500	1 428	1 001	+ 427	4 927	110
3 600 to < 4 800	481	7 712	1 256	1 762	— 506	7 206	93
4 800 to < 6 000	670	11 796	1 400	2 915	— 1 515	10 281	87
6 000 to < 7 200	2 627	23 078	2 267	5 581	— 3 314	19 764	86
7 200 to < 8 400	2 295	20 133	1 828	4 956	— 3 128	17 005	85
8 400 to < 9 600	2 099	20 709	1 912	5 055	— 3 143	17 566	85
9 600 to < 12 000	2 879	33 168	3 480	8 245	— 4 765	28 403	86
12 000 to < 15 000	1 156	16 577	974	4 262	— 3 288	13 289	80
15 000 to < 18 000	558	9 732	365	2 503	— 2 138	7 594	78
18 000 to < 24 000	600	13 372	376	2 404	— 2 028	11 344	85
24 000 and over	594	30 568	382	3 666	— 3 284	27 284	89
Total	17 810	196 990	41 260	43 326	— 2 066	194 924	—

agricultural labourer to higher supervisory staff, and that the range narrows only moderately (from 1 to 4.55) when social transfers and direct contributions are taken into account (line 7 p).

The limited importance of the transfers operated by social security is explained by lines 11 a, m, f, r and t of Table 6, which show the average gross benefits in France per head.

100. Except for persons not economically active (and it is they who constitute the main body of persons in receipt of pensions, which are more often than not proportional to previous contributions, and so are very much a form of "deferred wage"), the highest benefits in absolute value go to members of households with the highest resources. Line 11 m shows clearly the divergences, well known since the study by the Centre for Research and Documentation on Consumption, between sickness benefits which increase with the standard of living of urban insured wage-earners (heavy demand for medical services, benefits in kind proportional to contributions) but diminish in scale for the self-employed (not compulsorily insured in 1962) and for the rural population (where the demand for medical services was lowest).

101. If, however, account is taken of the compulsory contributions paid by the insured, some redistribution becomes apparent. Except for the first three categories, in which the heads of families are subject to special systems of social insurance (which, for better or for worse, cut them off from the rest of the nation), the net benefits diminish fairly regularly (but moderately) with the incomes of the persons concerned, both in absolute value (lines 5 c and 11 a) and, more surprisingly, in relative value (line 6).

The Table also shows (line 10) that under the combined effect of the social security benefits, of the contributions paid by the insured and of direct taxes, the apparent incomes of persons not economically active are increased by 96 %, those of agricultural labourers by 31 % and those of workers by 25 %. Only the higher grades and the self-employed would lose by these transfers, the former 3 % and the latter 7 %.

102. Even for column 1, "Total households", derived resources (line 9) are found to be 14 % higher than initial incomes (lines 2 m and p).

As there were only transfers without the creation of wealth, the difference can only reflect the impact of the employer contributions, subsidies and indirect taxes allocated to social security and social assistance and which could not be imputed to the various categories of households in Table 25, but of which it is certain the insured bear at least partially the burden.

103. By way of exercise an endeavour was made to determine what would have been—approximately and

TABLE 25

Resources - of French households - 1962

(Money values in FF)

Occupation of head of family	Total of "ordinary" households	Farmers	Agricultural labourers	Self-employed	Higher grades	Medium grades	Salaried employees	Wage-earners	Not economically active
Number of households (in thousands)	14 786	1 513	411	1 477	520	1 444	1 299	4 104	4 018
Average amount of income per household:									
2a - Gross wages (net + workers' social security contributions)	8 130	940	6 163	3 210	34 362	19 390	11 468	10 343	2 000
2b - Interest, dividends, farm rents	646	599	119	2 293	2 686	346	275	107	626
2c - Gross income of one-man businesses and operational receipts	6 371	19 202	1 202	33 692	3 515	1 407	919	539	1 898
2d - Less: depreciation and self-financing (net)	424	1 926	—	— 2 272					
2e - Receipts from abroad	203	34	—	127	1 319	819	156	50	122
2m - Total of initial receipts per household	14 926	18 849	7 484	37 050	41 882	21 962	12 818	11 030	4 646
2 - Index	100	126	50	248	280	145	86	74	31
3 - Assistance per household	507	462	509	413	310	316	409	516	673
4 - Subsidies and distributions	188	90	100	355	323	209	188	141	191
5a - Social security benefits received	3 144	1 425	2 328	1 523	4 121	3 287	2 784	3 327	4 224
5b - Contributions of insured	— 690	— 488	— 380	— 1 149	— 2 275	— 1 300	— 760	— 680	— 150
5c - Net social security benefits per household	2 454	937	1 948	374	1 846	1 990	2 019	2 647	4 097
6 - Ratio of benefits to primary income (5c : 2m)	16.5 %	5 %	26 %	0.98 %	4.4 %	9 %	15.6 %	24 %	88 %
7m - Total income per household	18 075	20 347	10 041	38 192	44 361	24 477	15 434	14 343	9 607
7i - Index	100	112	55	210	244	135	85	73	53
8 - Less: Direct taxes	905	536	191	3 323	3 821	1 027	529	213	484
Rate of income tax (7 m)	5 %	2.6 %	1.9 %	8,7 %	8.6 %	4.2 %	3.4 %	2.2 %	5.1 %
9 - Income net of direct taxes									
m - per household	17 170	19 811	9 850	34 870	40 540	23 450	14 905	14 030	9 123
index	100	115	57	200	235	137	87	83	53
10 - Ratio net intome (9 m) to primary income (2 m)	114 %	105 %	131,3 %	93 %	97 %	107 %	116 %	125 %	196 %

TABLE 26

Resources - of French households - 1962

(Money values in FF)

Occupation of head of family	Total of "ordinary" households	Farmers	Agricultural labourers	Self-employed	Higher grades	Medium grades	Salaried employees	Wage-earners	Not economically active
Total numbers shown in socio-occupational categories	45 853	6 006	1 541	4 925	1 885	4 868	3 793	14 599	8 236
(Average number per household)	3.10	3.97	3.75	3.33	3.63	3.37	2.92	3.56	2.05
2p - Initial income per person	4 800	4 750	2 000	11 100	11 500	6 500	4 400	3 120	2 250
Index	100	99	42	233	239	137	92	66	47
3 - Assistance per person	(164)	(197)	(135)	(123)	(85)	(93)	(139)	(145)	(329)
7p - Total income per person	5 700	5 050	2 678	11 220	12 221	7 263	5 286	4 029	4 686
Index	100	89	47	206	215	127	93	71	82
9p - Income per person net of direct taxes	5 500	5 000	2 627	10 220	11 170	6 960	5 100	3 940	4 443
Index	100	91	48	185	202	126	93	72	80
11 - Analysis of average social security benefits per person									
11a - Aggregate value	1 012	360	620	455	1 130	970	950	936	2 070
Value as % of income less direct taxes	18.5	7.2	23	4.4	10.2	13.9	18.6	23.8	46.5
of which									
11m: Sickness insurance	257	93	173	132	393	360	305	284	300
11f: Family allowances	276	170	370	146	405	366	320	415	62
11r: Old-age and other pensions	394	81	57	146	292	141	246	82	1 670
11t: Accidents at work	56	9	15	18	10	74	35	113	25
11b - Benefits net of contributions from insured persons	790	235	520	112	505	585	680	745	1 980
Index	100	30	66	14	64	74	85	94	250

subject to all reservations—the standard of living of the various categories of households under the following two hypotheses:

a) If employer contributions are treated as part of the total wage bill, so that, if they were suppressed, there could be a linear increase in all wages (Case 1). The suppression of the taxes which are imputed to social security would result in a fall in prices and so improve the standard of living (Case 2).

b) If employer contributions and indirect taxes imputed to social security are both assumed to have an impact on prices, their suppression, too, would cause a fall in prices.

104. On the assumption that within each of the socio-occupational categories studied there were internal arrangements to offset the social risks at present covered globally by social security in the broad sense, and that social assistance remains unchanged, the standard of living of the various categories would be increased or reduced (as a percentage of the estimated incomes in line 9) in the following proportions:

	Total households	Farmers	Agricultural labourers	Self-employed	Higher grades	Medium grades	Salaried employees	Wage-earners	Not economically active
Hypothesis *a*	+ 1.5	+ 0.2	− 0.1	+ 5.7	+ 20.5	+ 15.5	+ 8.8	+ 2.1	− 37
Hypothesis *b*	+ 1.5	+ 11.9	− 6.6	+ 17.4	+ 13.6	+ 7.9	+ 1.4	− 5.2	− 36

105. It is hardly necessary to insist on the unrealistic character of a hypothesis leading to the disappearance of more than one third of the resources of all persons who are not economically active, these being all too frequently inadequate as it is. In addition, those at work would have to ensure, within each category, that the necessary pensions were available, and this would perceptibly reduce (or reverse) the apparent benefits reaped by some and increase the losses borne by others.

This exercise at least makes it clear that—with due allowance for the sums paid into social security by third parties and no matter who really foots the bill in the long run—social security is very probably responsible for more transfers than would appear from a mere balance between the advantages and the direct charges which accrue for the various categories of insured persons. But it is difficult to evaluate the real scale of these social transfers, since it varies in time and space, depending upon the manner in which the various elements which contribute to production succeed in shifting on to other elements the apparent social charges (see Chapter III).

"GEOGRAPHICAL" TRANSFERS DUE TO SOCIAL SECURITY MEASURES

106. Comparisons between average benefits and contributions for various regions of France arranged according to the average income of their inhabitants may not lead to final conclusions, but they do at least bring out interesting points. Tables 27 and 28 (1) show that social security benefits are not at all in inverse proportion to incomes (columns 4 to 6) whilst contributions (2) (except for some notable exceptions) appear, on the contrary, to be almost progressive. On the whole, social security transfers (columns 10 and 11) are not a function of regional incomes, as shown by column 14 (in which the index of contributions over benefits is close to the index of regional incomes).

107. If the aim of social security were to reduce discrepancies in incomes by ensuring their effective redistribution, to take from the inhabitants of the Paris region 5.5 % of the average income (which even after taxes and transfers would still be half as high again as the general average) in order to improve by 4.1 % the income of the Bretons (which would still be 78 % less than of the Parisians) may of course seem to be a very modest measure, especially when it is realized that at the same time a much greater advantage in absolute value is being given to the inhabitants of Languedoc, where incomes are already very close to the average.

108. These apparent regional distortions are due in part, no doubt, to the shortcomings of the statistical sources used, but also, it would seem, to the coexistence of special social security schemes. In the miners' scheme, for instance, contributions and average benefits are higher than in the general system, and those covered by this scheme are particularly numerous in the North and the East. On the contrary, benefits—and more so con-

(1) Determined, subject to the usual reservations, from the "tentative regional economic accounts", published by INSEE in September 1966, and an article in Statistiques et Etudes Financières, December 1964.

(2) Including all contributions from employers, the persons insured and the social security system, as defined for the French National Accounts.

TABLE 27

Average yearly aggregate incomes, social security benefits and contributions, by regions - 1962

FRANCE

Regions		Average yearly aggregate income per head		Average social security benefits per head			Total social security contributions per head			Benefits minus contributions per head				Col. (12) over Col. (13)	Rank
		FF	Index	FF	% of (2)	Index	FF	% of (2)	Index	FF	% of (2)	Reverse index (7)/(4)	Rank of participation in soc. sec.		
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Paris region	1	9 200	151	970	10.5	118	1 475	16	180	− 505	− 5.5	153	1	101	8
Provence-Côte d'Azur	2	6 080	101	842	13.8	104	680	11.20	82	+ 162	+ 2.7	81	14	53	21
Rhône-Alps	3	6 050	100	806	13.3	98	844	14	103	− 38	− 0.63	105	2	103	4
Languedoc	4	5 800	96	786	13.5	96	531	9.1	65	+ 255	+ 4.1	68	20	70	20
Alsace (1)	5	5 730	95	891	15.5	109	862	15	105	+ 29	+ 0.5	97	4	102	7
Upper Normandy	6	5 700	94	823	14.4	102	797	13.9	97	+ 26	+ 0.45	97	4 b.	103	4
Franche-Comté	7	5 650	93	757	13.4	92	742	13.1	90	+ 15	+ 0.25	98	3	105	2
Champagne	8	5 600	93	854	15.2	105	762	13.5	93	+ 92	+ 1.6	89	8	105	2 b.
Auvergne	9	5 560	92	720	13	88	590	10.6	72	+ 130	+ 2.3	82	12	89	13
Loire	10	5 500	91	695	12.8	85	549	10	67	+ 146	+ 2.6	79	15	87	14
Burgundy	10 b.	5 500	91	770	13.9	94	663	12	81	+ 107	+ 1.9	86	9	95	9
Lorraine (1)	12	5 450	90	947	17.4	116	919	16.8	126	+ 28	+ 0.5	97	4	108	1
Aquitaine	13 b.	5 430	90	726	13.2	88	551	10.2	68	+ 175	+ 3.3	76	16	84	15
North	14	5 400	89	929	17	114	862	15.9	105	+ 67	+ 1.2	92	7	103	4
Centre	14 b.	5 400	89	730	13.4	89	594	11	73	+ 136	+ 2.5	83	11	93	11
Picardy	14	5 400	89	816	15	99,9	687	12.6	84	+ 29	+ 0.5	84	10	95	9 b.
Lower Normandy	17	5 300	87	642	12.1	78	522	9.8	64	+ 120	+ 2.2	81	13	93	11 b.
South Pyrenees	17	5 300	87	680	12.8	83	487	9.2	60	+ 193	+ 3.6	72	17	83	17
Limousin	17	5 300	87	680	12.8	83	483	9.1	59	+ 197	+ 3.7	71	19	82	18
Poitou-Charente	20	5 150	85	685	13.3	84	488	9.4	60	+ 197	+ 3.8	72	17 b.	84	15 b.
Brittany	20 b.	5 150	85	646	12.5	79	434	9.4	53	+ 212	+ 4.1	67	21	79	19
Whole of France		6 050	100	817	13.5	100	819	13.5	100	+ 2		100			

(1) In Alsace and part of Lorraine (Moselle) the rates of contributions and benefits of the general system are higher than in the rest of the country.

Source: 1962 Regional Economic Accounts.

TABLE 28

Comparison of various benefits, by social security region (general social security system only - 1962)

FRANCE

Social security region	Average number of dependent children per 100 contributors		Family allowances over contributions (Index)	(4) : (3)	Average contributions (Index)	Average sickness benefits		Average old age benefits per contributor (Index)	Ratio of pensioners to contributors	Average amount of pensions (Index)
	per 100	(Index)				per contributor	(Index)			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Paris	48	71	59	0.82	117	800	102	95	0.21	109
Lille	78	116	129	1.12	95	771	98	92	0.23	95
Nancy	80	118	126	1.07	95	774	99	93	0.23	96
Strasbourg	75	110	112	1.02	103	944	120	200	0.33	145
Dijon	77.5	114	121	1.06	97	687	88	84	0.22	92
Orleans	68	100	119	1.19	87	613	78	75	0.21	88
Rouen	81	119	137	1.15	92	752	96	88	0.21	99
Rennes	82	120	182	1.48	81	690	88	100	0.28	85
Nantes	85	125	155	1.23	89	640	82	100	0.25	95
Limoges	73	107	146	1.36	81	662	84	104	0.29	87
Clermont-Ferrand	66	97	116	1.19	90	788	101	110	0.29	91
Lyon	69	101	99	0.98	99	773	99	82	0.22	90
Marseilles	72	106	111	1.04	94	986	126	99	0.25	94
Montpellier	72	106	137	1.28	85	949	121	128	0.35	89
Toulouse	59	76	132	1.77	87	763	97	103	0.26	95
Bordeaux	67	99	123	1.24	84	745	95	107	0.30	85
Whole of France		100	100	1.00	100		100	100	0.24	100
National average	68					785		375		1 561

tributions—are distinctly lower in the agricultural scheme. But the ratio of agricultural population to total labour force is particularly high in the West and the South, where incomes are low (for the good reason that value added per person working in agriculture is limited).

But allowance must also be made for regional differences in the "technical" risks which still play a part despite the law of large numbers. These differences are far from negligible, to judge from available statistics—which, unfortunately, are those of the general system and are still imperfect.

109. Table 28 shows the regional variations in the average number of dependent children (columns 2 and 3) and the sickness benefits by contributor (colums 7

TABLE 29

Redistribution of income through social security in Italy by area, 1960-1964

(Lit. thousand million)

Year	Area income at factor cost	Contributions	Benefits						Excess of benefits and transfers over contributions (9) — (3)	Area income at factor cost, incl. soc. sec. (2) + (10)	(11) as % of (2)
			Benefits in kind	Transfers				Total			
				Annuities	Family allowances	Various	Total				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
						1st territory					
1960	5 675.1	814.4	155.3	295.9	143.1	6.0	445.0	600.3	— 214.1	5 461.0	96
1961	6 109.6	921.3	166.2	287.6	157.8	8.4	453.8	620.0	— 301.3	5 808.3	95
1962	6 858.3	1 135.1	223.8	311.7	177.8	10.7	500.2	724.0	— 411.1	6 447.2	94
1963	7 777.7	1 447.8	247.1	497.1	184.8	10.2	692.1	939.2	— 508.6	7 269.1	93
1964	8 481.0	1 560.4	295.3	536.3	184.3	11.0	731.6	1 026.9	— 533.5	7 947.5	94
						2nd territory					
1960	5 699.1	642.9	222.0	300.9	147.7	12.7	461.3	683.3	+ 40.4	5 739.5	101
1961	6 212.9	720.3	235.8	277.8	161.4	16.6	455.8	691.6	— 28.7	6 184.2	100
1962	7 093.5	870.0	273.4	393.6	182.5	18.6	594.7	868.1	— 1.9	7 091.6	100
1963	7 982.5	1 098.4	398.6	524.8	189.3	17.4	731.5	1 130.1	+ 31.7	8 014.2	100
1964	8 931.5	1 193.2	473.4	566.4	188.7	18.9	774.0	1 247.4	+ 54.2	8 985.7	101
						3rd territory					
1960	3 382.8	305.6	168.4	204.1	154.1	24.0	382.2	550.6	+ 245.0	3 627.8	107
1961	3 877.5	330.7	178.8	190.8	162.6	34.8	388.2	567.0	+ 236.3	4 113.8	106
1962	4 332.2	384.2	191.5	275.5	180.6	36.2	492.3	683.8	+ 299.6	4 631.8	107
1963	5 061.8	472.1	249.6	358.9	187.6	39.2	585.7	835.3	+ 363.2	5 425.0	107
1964	5 456.5	516.7	297.6	389.1	187.0	42.5	618.6	916.2	+ 399.5	5 856.0	107
						ITALY					
1960	14 757	1 762.9	545.7	800.9	444.9	42.7	1 288.5	1 834.2	+ 71.3	14 828.3	100
1961	16 200	1 972.3	580.8	756.2	481.8	59.8	1.297.8	1 878.6	— 93.7	16 106.3	99
1962	18 284	2 389.3	688.7	980.8	540.9	65.5	1 587.2	2 275.9	— 113.4	18 170.6	99
1963	20 822	3 018.3	895.3	1 380.8	561.7	66.8	2 009.3	2 904.6	— 113.7	20 708.3	99
1964	22 869	3 270.3	1 066.3	1 491.8	560.0	72.4	2 124.2	3 190.5	— 79.8	22 789.2	100

and 8). The first figure depends not only on the birth rate but also on the proportion of female employment and the school-leaving age. The second varies with the incidence of sickness, which is no doubt of relative importance, and much more with the collective habits of the community and the medical facilities available.

The cost of old-age pensions in relation to the total labour force also varies considerably (column 9). They are particularly high in regions where birth rates are low and young people tend to go away. (Strasbourg provides an example of a "matured" pension system, since social security was in existence there earlier than in the rest of the country.)

110. From these various observations it may be concluded that—even in so homogeneous a nation as France —social security is not a satisfactory instrument for levelling out standards of living between the various regions.

111. To conclude, we now reproduce the results of an Italian inquiry into the effects of social security on the geographical distribution of incomes for the years 1960 to 1964. This inquiry determined, for each of the three major areas into which Italy is at present subdivided (area I: North-west Italy; area II: North-east and central Italy; area III: Southern Italy and the islands), both workers' and employers' contributions per unit of labour, and the benefits and transfers to those covered by social security. With the statistics at present available for Italy, it is possible to make the calculations without resorting to any particular hypotheses. They show that in area I the contributions paid exceed by far the benefits and transfers, that in area II contributions and benefits are approximately equal and, finally, that in area III benefits and transfers substantially exceed contributions. In other words, there is a transfer of income from area I to area III amounting to Lit. 245,000 million in 1960 and Lit. 400,000 million in 1964.

CHAPTER III

Transfer of social charges

I - General considerations (1)

112. If increased social security benefits are financed by increased contributions and taxes, the contributors and taxpayers directly concerned will modify their economic plans. In general, it may be assumed that they will endeavour to pass this additional burden on to others. As a result of the interdependences inherent in the income flow, the transfer processes thus initiated will change all the magnitudes which are decisive for the formation, distribution and utilization of the national product. Consequently, knowledge of the problems of the passing-on of charges is a *sine qua non* of any investigation of the economic impact of social security on magnitudes influenced by the economic circuit.

113. The systematic character of an analysis of these effects which takes account of the different possible processes of transfer is clearly apparent if it is compared with the method of evaluating the redistributing effects of social security which was applied and elucidated in detail in Chapter II. To evaluate a redistribution of income, two types of income distribution must be compared; in the present case, the distribution of income in a situation where no social security system is in operation, and its distribution when a social security system is in operation, whose influence is to be investigated. Only the latter distribution can be statistically evaluated; the distribution in the former, fictitious, initial situation cannot. However, if calculations are nevertheless to be made, one or other hypothesis will have to be formulated on the distribution of income in the fictitious initial situation.

114. The method chosen in Chapter II also implies, of necessity, such a hypothesis, which is given below:

The value of the total national product and the factor incomes for each of the income groups under consideration, and all public expenditure and transfer income which are not due to social security, are independent of social security measures. For only then does the redistribution operated by social security for each income group exactly correspond with the balance of social benefits received and social contributions paid, as assumed in Chapter II. This hypothesis is, however, hardly realistic, since the quantities which are here assumed to be constant vary, as a rule, owing to the introduction of social benefits and social contributions; the reasons for this are as follows:

115. The levying of contributions for social security—irrespective of whether contributions for this specific purpose, or general taxes, are involved—prompts those directly bearing the burden to endeavour to offset the reduction in their disposable income by an equivalent increase in their factor income. The workers try to pass the contributions on to their gross wages and salaries. The entrepreneurs try to pass the resulting increases in wages and employers' contributions on in the form of higher prices.

116. This two-tier process may succeed partially or fully if:

a) the wages policy cannot prevent the offsetting wage increases;

b) the monetary policy cannot prevent an inflationary expansion in demand, or does not want to prevent such an expansion because of concurrent economic objectives;

c) the government and investors do not offset an expansion of private consumption by limiting investments and public consumption;

d) redistribution entails an increased propensity to consume throughout the economy;

e) the policy of full employment does not allow a reduction in profits which would involve a drop in the level of employment.

117. If these conditions are fulfilled—and they must, at any rate, be largely taken into account in real situations—the hypotheses of our statistical study on the redistribution of income are not accurate as regards the initial situation with which we compare the distribution of income under the system of social security that is being studied. However, this does not mean that this statistical method has no value.

(1) See page 73 for an explanation of the mathematical symbols used in this chapter.

It provides important information on the share that social security contributions and benefits represent in the income actually formed during a given period; but it must not be expected to provide any indications as to what the incomes would have been in a system without social security. To obtain this information an econometric analysis of the transfer processes, referred to above, would have to be carried out.

118. In order to show the great importance of these adaptation processes for the distribution effects, and that of the conditions mentioned above, we shall give below, by means of a simple econometric circular-flow model, the main transfer phenomenona which can be set going by an increase in social security contributions and pensions.

II - Basic circular-flow model and assumed initial situation

119. Our examination must be based on a simple circular-flow model of an economy, represented by the matrix given below. The columns show the expenditure of each of the seven sectors in the other six sectors, and the rows show the receipts of each sector from the other six sectors.

Receipts \ Expenditure	W	A	N	U	R	F	K
W	—	X	C_N	C_U	C_R	C_F	I
A	M	—	—	—	—	—	—
N	L	—	—	—	—	—	—
U	Q	—	—	—	—	—	—
R	—	—	—	—	—	V	—
F	T_I	—	T_N	T_U	—	—	—
K	—	S_A	S_N	S_U	S_R	S_F	—

120. The columns of the matrix mean that:

(1) the value added (W) absorbs the imports (M) and distributes the net domestic product at market prices as wages and salaries (L) to the non-self-employed workers (N), as profits (Q) to the entrepreneurial sector (U), and as indirect taxes (T_I) to the State (F).

(2) Foreign countries absorb exports (X) and supply the capital-forming sector with savings (S_A) equal to the import surplus (M—X). (S_A = the deficit of the balance on current account. If the balance on current account is favourable ($X—M > 0$), S_A is preceded by the minus sign — ($S_A < 0$).

(3) The dependent working population uses its gross income (N) for consumption (C_N), for direct taxes including social insurance contributions (T_N), and for saving (S_N).

(4) The entrepreneurs use their receipts (U) for consumption (C_U), direct taxes (T_U), and saving (S_U).

(5) The pensioners divide their income (R) between consumption (C_R) and saving (S_R). To simplify, it is assumed that they have no direct taxes to pay.

(6) Public expenditure, including social security (F), is divided into public consumption (C_F), transfers to pensioners (V_R), and public savings (S_F). Public investments are not included in the fiscal sector but in the capital-forming sector (K). To simplify, transfers to workers and entrepreneurs are excluded.

(7) The capital-forming sector devotes all its receipts (K) to investments (I). The demand for credit from other sectors is offset by savings from those sectors.

121. The rows of the matrix mean that:

(8) The value added obtains receipts from exports (X), consumption of the private sectors (C_N, C_U, C_R) and public sectors (C_F), as well as from investments (I).

(9) Workers' receipts (N) are identical with their factor incomes, the possibility of other sources of income being disregarded.

(10) The gross incomes of entrepreneurs consist solely of gross profits (Q), since, to simplify, other resources have not been taken into account.

(11) The receipts of pensioners' households consist of government transfer payments (V_R). Here too, for the sake of simplicity it is assumed that these households have no other income.

(12) Fiscal receipts (F) consist of various taxes, including social security contributions (T_I, T_N, T_U). Receipts from credits granted are considered as public dissaving in the capital sector.

(13) Capital formation comprises the import surplus (S_A), and savings by the private sector (S_N, S_U, S_R) and the fiscal authorities (S_F). Since the credits granted to the various sectors are covered by gross savings, each of the sectors may show a negative net savings balance.

122. For a practical economic policy a model with only seven sectors would be too highly aggregated (it would

be desirable, for instance, to break down the value added in an input/output table) and too simple (it excludes, for example, income transfers between private sectors). But for our purpose—namely, to highlight the main factors affecting the distribution resulting from social security provisions—this model is adequate, and is even to be preferred to more complex models, since any additional variable introduced into the model would only render the results less clear and more difficult to interpret.

123. A model as simple as this one also has the advantage that most member countries of the European Economic Community can henceforth determine econometrically the majority of behavioural functions which—as will be shown below—are of the greatest importance for an economically fruitful application of this model. The saving and taxation functions merit particular mention here. Such models could therefore be applied with no great difficulty for approximate calculations of concrete changes in the social security systems of member countries, instead of more complex models which, though perhaps more satisfactory in theory, would not be econometrically calculable. But in future it would at any rate be desirable to construct less highly aggregated models.

124. In order to show that additional information can be obtained on the problems under examination by subdividing the sector "State" which appears in our model into two subsectors, i.e. "Social security" and "Other public budgets", we have constructed such an expanded model, which is given and discussed in Annex I to the present chapter.

In Annex II another, similar model is given, (1) in which econometric formulae for the Federal Republic of Germany are used for the purpose of calculating some of the important behavioural functions dealt with in the present exposition.

The circuit shown in the above table can thus be represented by the following system of 14 equations:

$$(1)\ W = M + L + Q + T_I$$
$$(2)\ A = X + S_A$$
$$(3)\ N = C_N + T_N + S_N$$
$$(4)\ U = C_U + T_U + S_U$$
$$(5)\ R = C_R + S_R$$
$$(6)\ F = C_F + V + S_F$$
$$(7)\ K = I$$
$$(8)\ W = X + C_N + C_U + C_R + C_F + I$$
$$(9)\ A = M$$
$$(10)\ N = L$$
$$(11)\ U = Q$$
$$(12)\ R = V$$
$$(13)\ F = T_I + T_N + T_U$$
$$(14)\ K = S_A + S_N + S_U + S_R + S_F$$

125. The circular-flow relations given by the definitions of the models are expressed by these 14 linear equations with 25 variables. It should be noted that, owing to the equality of the totals appearing in the columns and rows of the matrix, each of the equations can be derived from the rest. Hence, a linear relation exists between the 14 equations. The matrix therefore presents only 13 independent linear equations. To solve the system of equations, that is to say, to determine the numerical value of each variable and, consequently, the distribution of income, the remaining 10 unknowns must be eliminated by using an additional 12 independent linear equations.

126. As additional equations it is necessary to introduce here, for the initial situation, hypotheses which admittedly do not rest on econometric calculations valid for one, several or all the countries of the Common Market but which are chosen in such a manner that they approximately reflect the magnitude of the relations of the circular flows as ascertained in various national economies in the Common Market. Here it must be borne in mind that, in reality these relations—for example, the relative share of imports and exports in the domestic product or the ratios of direct to indirect taxes—differ considerably from country to country.

127. For statistical reasons, among others, we could not proceed with econometric calculation of the necessary hypotheses for our model in respect of the six countries of the Common Market. We only set out to show the main determining factors and the qualitative trends in the effects which changes in social security have on the flow of incomes. But these factors depend solely on the general form of the chosen behavioural functions. The numerical value of the function parameters only decides the extent, not the trend, of the effects produced. We therefore think that, in order to achieve our aims, for the initial situation we could work in our model with the following freely chosen hypotheses approximating to real conditions: (1)

$$(15.0)\ X = \bar{\bar{X}} - x\,(W-M) = 40 - \frac{1}{5}\,(W-M)$$

$$(16.0)\ M = mW - \frac{1}{6}\,W$$

(1) Dietrich Lüdeke: *Ein einfaches ökonometrisches Modell für die Einkommensumverteilung in der Bundesrepublik Deutschland,* Jahrbücher für Nationalökonomie und Statistik (A simple econometric model of income redistribution in the Federal Republic of Germany, Yearbook of National Economy and Statistics), Vol. 177, No. 5 (1965), p. 410 *et seq.*

(1) The symbols superscribed with a dash always designate exogenous magnitudes which are independent of other variables in the model; for example, $\bar{\bar{X}}$ = the share of exports independent of income = autonomous exports.

$$(17.0)\quad L = \bar{L} = 60$$

$$(18.0)\quad Q = \bar{Q} = 30$$

$$(19.0)\quad T_I = t_i\,(W-M) = 0{,}1\,(W-M)$$

$$(20.0)\quad T_N = t_N L = \frac{1}{6} L$$

$$(21.0)\quad T_U = t_n Q = \frac{1}{3} Q$$

$$(22.0)\quad S_N = s_n\,(N-T_N) = \frac{1}{10}\,(N-T_N)$$

$$(23.0)\quad S_u = s_u\,(U-T_u) = \frac{3}{4}\,(U-T_U)$$

$$(24.0)\quad S_R = s_R V = 0{,}05\ V$$

$$(25.0)\quad S_F = \bar{S}_F = 5$$

$$(26.0)\quad V_R = \bar{V} = 15$$

128. It is assumed that (17.0), (18.0) and (26.0) represent the incomes of the three private income groups. (19.0), (20.0) and (21.0) show the tax functions:

Indirect taxes are considered to be proportional to the national product (19.0)—which is more or less in accordance with reality. In order to arrive at simple linear equations it is assumed, deviating from real conditions, that direct taxes are proportional to factor incomes (20.0) and (21.0) for the various groups.

This simplification can be justified by the fact that our object is to indicate trends and not to furnish exact figures, although, if slight changes are made in them, the simplifying hypotheses of linearity also lead to usable approximations to real conditions. But the progressiveness of taxation is taken into account in so far as a much higher average and marginal tax burden is postulated for entrepreneurs' profits than for workers' incomes—which, considering that incomes per head are higher for entrepreneurs, will lead to an approximation of the results that could be expected under progressive taxation.

129. The savings functions for various sectors are also taken as given: (22.0), (23.0) and (24.0). In accordance with numerous econometric computations they may be considered as linear and, in line with real conditions, it was further assumed that the marginal savings ratio was distinctly higher for entrepreneurs than for workers and lowest for pensioners. The export function (15.0) is based on the assumption that exports are a function of the average price level p:

$$(I)\quad X = a - bp$$

It is also assumed that the price level is a function of total demand for a domestic value added W and imported goods M:

$$(II)\quad p = c\,(W-M)$$

so that any increase in demand W, with M constant, brings about a rise in prices, and any increase in imports, with demand W constant, causes a fall in prices. This simple hypothesis can only be approximately valid in conditions of full employment. If this is the case, by introducing II into I, it is possible to arrive at any rate at an export function:

$$(III)\quad X = a - bc\,(W-M)$$

that is to say, a function of the form adopted in (15.0).

130. The export function assumes that exports are solely dependent on incomes and prices in the exporting country, whereas, in reality, they also depend—according to the elasticity of incomes and prices vis-à-vis demand in the importing countries—on the development of incomes and prices in the countries for which the exports are destined. Equation (15) can, therefore, at best be used for given incomes and prices in the economies of trading partners.

As is frequently recognized in the literature of the subject, the import function (16.0) assumes linear dependence of imports on total demand W. This assumption, too, is highly simplified in comparison with real conditions. For the small Common Market countries, which are strongly dependent upon imports, the marginal propensity to import $\frac{dM}{dW}$ would certainly have to be assumed as higher than in (15.0). Like the export function (15), the import function (16) ignores the influence exerted on imports by any variations in prices and income occurring simultaneously abroad.

131. In this case, for the initial situation, the numerical system of equations presents the following solution incorporated in the circular-flow matrix.

	W	A	N	U	R	F	K	
W	—	20	45	5	14.25	10	25.75	120
A	20	—	—	—	—	—	—	20
N	60	—	—	—	—	—	—	60
U	30	—	—	—	—	—	—	30
R	—	—	—	—	—	15	—	15
F	10	—	10	10	—	—	—	30
K	—	0	5	15	0.75	5	—	25.75
	120	20	60	30	15	30	25.75	

It should be noted that, for the given income relations, equilibrium is only established when investments adjust to the sum of voluntary savings. Consequently, after

deduction of taxes and addition of public transfer payments, the following picture emerges for the initial situation:

	Disposable income in absolute value and as a percentage of the net domestic product at market prices
Workers	50
Entrepreneurs	20
Pensioners	15

132. This situation now changes through the introduction of additional social security contributions and benefits. The distribution of incomes in the resulting new equilibrium must be compared with the equilibrium in the initial situation, described above. The difference between disposable incomes in the old and the new equilibrium must be considered as the redistribution effected by social security.

Naturally, this is only a statistical comparison of equilibria and not a dynamic analysis of the process. In the absence of dynamic functions, we cannot say whether or when this equilibrium is actually reached, or whether it is stable or unstable.

III - Analysis of redistribution processes caused by changes in social security

133. The following model calculations are based on the fact that the financing of increased social benefits for pensioners amounting to $\Delta V = 15$ is assured by an increase in receipts by the State (including social security) of an equivalent amount, i.e. $\Delta \bar{T} = \Delta V = 15$. These additional receipts can be obtained by increasing:

A. Workers' social security contributions;

B. Employers' social security contributions;

C. Workers' direct taxes;

D. Taxes on entrepreneurs' profits;

E. Indirect taxes.

A - FINANCING OF INCREASED SOCIAL BENEFITS BY INCREASING WORKERS' CONTRIBUTIONS

134. The various modes of financing may have different effects on distribution. However, the following calculations must be based, first and foremost, on the assumption that the workers' contributions will be increased.

Workers' contributions are a componement of gross wages and salaries and they reduce first of all workers' direct disposable incomes.

It is frequently assumed that the employed population will try to offset this burden by a corresponding increase in gross wages and salaries.

135. Account must, however, be taken of the fact that increases in contributions need not necessarily be felt as a real reduction in income if they are offset by improved future individual benefits. Generally speaking, it is not possible to say whether the insured consider increased cover against the insured risk as exactly counterbalancing the direct withdrawal of enjoyment by a reduction in their present freely disposable income. The fact that many people make use of the facility to contract optional insurances or higher insurances within social insurance, or take out supplementary private insurance cover, shows that these people attach great importance to their social contributions as a source of future income. It is equally certain that other insured persons, if they were in a position to decide for themselves upon the extent of protection offered by insurance, would make smaller sacrifices than those entailed by the present compulsory contributions, if only because they systematically underestimate their future requirements through economic shortsightedness (Böhm-Bawerk), or because they do not know the magnitude of the insured risk.

136. Thus, although the pressure for contributions to be reflected in workers' wages may well be less than the pressure against levying general taxes with no specific benefits in view, allowance must nevertheless be made for the attempt to have these increases reflected in increased wages.

The pressure will certainly be much more intense if social security receipts increase as a result of a rise in contributions or taxation rates than if the increase is due to a rise in wages, salaries and other incomes, made possible by economic expansion, while contribution and tax rates remain stable; for the contributors and taxpayers are less conscious of the increased burden in the latter case than in the first case.

It may, of course, be asked whether and to what extent this attempt to pass on the increases will succeed. The factors on which success depends are analysed in the following seven examples.

Hypothesis 1: No passing-on when the nominal national product remains constant

137. Let us assume that the workers fail in their attempt to reflect in wages the increase in contributions $\Delta \bar{T}_N = \Delta V = 15$, and that $L = \bar{L} = 60$ continues to obtain.

This hypothesis will be especially close to real conditions when the labour force is not fully employed, but also when, in spite of full employment, the market situation, profits, and prospective profits are so bad for entrepreneurs that they, for their part, do not feel they can pass the increases in wages on in prices. In such conditions, entrepreneurs will offer keen resistance to any claims for higher wages. In conditions of full employment, a distinctly anti-inflationary monetary policy is therefore necessary. Such a policy is the only one that would prevent prospective inflationary profits for entrepreneurs and forbid any inflationary financing of wage rises.

138. The speed of technical progress is also important in this connection. If the pressure appears at a time when the real cost of production per unit product is rapidly decreasing, entrepreneurs will be more inclined to yield to it than when productivity is growing more slowly.

In our first example we shall therefore assume that the nominal value of the net domestic product at market prices is kept constant (W—M = 100), this being a condition for gross wages to remain stable. In relation to the initial situation, the system of equations changes as follows:

Instead of:

(20.0) we have (20.1) $T_N = t_n L + \Delta V = 1/6L + 15$, and instead of:

(26.0) we have (26.1) $V = \bar{V} = 30$.

In addition, there is the limiting condition for stabilization of the domestic product (27.1) $W - M = 100 =$ constant.

But then, the limiting condition (18.0) $Q = \bar{Q} = 30$ disappears.

139. For a quantitative analysis of the effects of the observed autonomous change in social benefits V, it is recommended that the system of equations should be given in its reduced form so that every other variable Z_i appears there as a function of exogenous variables V. From this reduced form of the system it is possible, by differentiating the Z_i's in relation to V, to form a ratio $\frac{dZ_i}{dV}$ in which the variation of variables Z_i is linked with the autonomous change in contributions and social benefits.

For the hypothesis developed above, the following system of "multipliers" $\frac{dZ_i}{dV}$ is obtained with the chosen function parameters:

Z_i	$\frac{dZ_i}{dV}$	Z_i	$\frac{dZ_i}{dV}$	Z_i	$\frac{dZ_i}{dV}$	Z_i	$\frac{dZ_i}{dV}$
L	0	C_N	− 0.9	S_N	− 0.1	T_N	1
Q	0	C_U	0	S_U	0	T_U	0
		C_R	+ 0.95	S_R	0.05	T_t	0
W	0	C_F	0	S_F	0	X	0
Y	0	C	+ 0.05	S_A	0	M	0
				J = S	− 0.05		

140. For the assumed value of $\Delta V = \Delta \bar{T}_N = 15$, the solution of the new system of equations is furnished by the following matrix:

	W	A	N	U	R	F	K	
W	—	20	31.5	5	28.5	10	25	120
A	20	—	—	—	—	—	—	20
N	60	—	—	—	—	—	—	60
U	30	—	—	—	—	—	—	30
R	—	—	—	—	—	30	—	30
F	10	—	25	10	—	—	—	45
K	—	0	3.5	15	1.5	5	—	25
	120	20	60	30	30	45	25	

141. The distribution of incomes under the new equilibrium can now be compared with the distribution under the old equilibrium.

	Disposable income in absolute value and as a percentage of the net domestic product at market prices		
	Initial conditions	New equilibrium	Change
Workers	50	35	− 15
Entrepreneurs	20	20	0
Pensioners	15	30	+ 15

142. In this case, we arrive for redistribution at the result we would have obtained by the method used in Chapter I for the statistical calculation of redistribution. The workers alone bear the full increase in contributions, and the pensioners are the only beneficiaries. The entrepreneurs' position remains unaltered. It should be noted that, when the national product remains unchanged, the new equilibrium can only be reached by reducing investments and the share of gross investments in the national product, since the pensioners show less propensity to save.

Hypothesis 2: Passing the burden of contributions on to wages when the nominal value added is constant

143. Let us now discard the hypothesis according to which the workers are unable to secure an increase in wages when employment is stable, and let us assume that they obtain $\Delta L = \Delta \bar{T}_N = \Delta V = 15$, but that employers are not successful in passing wage increases on in the form of increased prices because restrictive monetary and credit policies keep the nominal value added stable.

144. In reality, of course, such a situation never completely occurs. It presupposes a high level of employment and also that the entrepreneurs are prepared to maintain their offers of employment unchanged despite their reduced profits. A certain similarity with these conditions is, however, sometimes found during the economic phase when the wages and salaries ratio frequently increases with full employment: the main factors behind expansion are already weakening, but have not yet become factors making for recession; the monetary policy is still restrictive in order to prevent inflationary tendencies; the "price climate" hardly permits price increases; order books are still rather full following a boom; and, finally, the profits from the preceding boom are so high that the entrepreneurs consider a reduction not unacceptable.

145. The system of equations which is applicable in this case differs from the initial situation as follows:

(17.0) is replaced by (17.2)
$L = \bar{L} + \Delta V = 75$

(20.0) is replaced by (20.1)
$T_N = t_N L + \Delta V = 1/6\, L + 15$

(26.0) is replaced by (26.1)
$V = \bar{V} = 30$

To this must be added the limitation for the net domestic product (27.1) $W - M = 100 =$ constant;

The determination of profit (18.0) $Q = \bar{Q} = 30$ disappears.

146. With the new system of equations in its contracted form, the "multipliers" of the changes in social security transfers and social benefits can be calculated in the following manner:

Z_i	$\frac{dZ_i}{dV}$	Z_i	$\frac{dZ_i}{dV}$	WZ_i	$\frac{dZ_i}{dV}$	Z_i	$\frac{dZ_i}{dV}$
L	1	C_N	− 0.15	S_N	− 0.017	T_N	+ 1.16
Q	− 1	C_U	− 0.167	S_U	− 0.5	T_U	− 0.33
W	0	C_R	+ 0.95	S_R	+ 0.05	T_i	0
Y	0	C_F	− 0.170	S_F	0	X	0
		C	+ 0.47	S_A	0	M	0
				J = S	− 0.47		

147. New equilibrium values are obtained for the value $\Delta V = \Delta T_N = 15$, as shown in the following matrix.

	W	A	N	U	R	F	K	
W	—	20	42.75	2.5	28.5	7.5	18.75	120
A	20	—	—	—	—	—	—	20
N	75	—	—	—	—	—	—	75
U	15	—	—	—	—	—	—	15
R	—	—	—	—	—	30	—	30
F	10	—	27.5	5	—	—	—	42.5
K	—	0	4.75	7.5	1.5	5	—	18.75
	120	20	75	15	30	42.5	18.75	

148. A comparison of the distribution of incomes in the initial situation with the redistribution resulting from the new equilibrium conditions gives the following table:

	Disposable income in absolute value and as a percentage of the net domestic product at market prices		
	Initial situation	New equilibrium	Change
Workers	50	47.5	− 2.5
Entrepreneurs	20	10	− 10
Pensioners	15	30	+ 15

149. In this case, therefore, the workers were able to offset the major part of the increase in contributions by

an increase in wages. Since, however, they have to pay, in addition to social contributions, higher direct taxes as a result of the increase in their gross income, their new disposable income does not quite reach the old level. It is the entrepreneurs who bear by far the greatest share of the burden of redistribution, though their net income diminishes less rapidly than their gross profits, because their taxes on profits diminish sharply. The pensioners' share in the net national product at market prices has again increased by the entire increase in contributions.

150. It should be noted that the new equilibrium for $W - M = 100$ is only reached because public consumption was reduced by the amount of diminished receipts from taxation excluding social security contributions and because investments were reduced to the level of voluntary savings, which also diminished. The "multipliers" table shows that, by and large, in the new equilibrium the overall consumption ratio must have increased in spite of the decline in public consumption ($\frac{dC}{dV} = + 0.47$), while the overall investment ratio must have diminished ($\frac{dI}{dV} = - 0.47$). If public consumption and investments had been maintained at their old level, an inflationary increase in the nominal value added and another distribution of income could not have been avoided.

151. Theoretically, the same result would have been achieved if it were still assumed that the nominal value added remains constant but that, furthermore, the reduction in profits would entail the closure of marginal enterprises. In this case, the slight loss in the disposable income suffered by the workers as a whole would conceal the fact that a number of persons hitherto employed would lose their entire income and, moreover, that the real value of each income would be lower than before as a result of a decrease in real production. In such conditions, a redistribution of incomes for the benefit of recipients of social security pensions, made solely at the cost of profits from enterprises, would only be possible by a distortion of the aims of full employment and of economic growth consistent with real possibilities.

Hypothesis 3: Passing increases in contributions on to wages when public consumption and investments remain constant

152. The hypothesis we have used up to the present (according to which monetary policy would succeed in completely preventing an inflationary increase of the nominal national product through the endeavours of workers or employers to pass on any increase in social security charges in the form of higher wages or prices) is not very realistic. As a rule, monetary policy can undoubtedly check inflationary tendencies, but it cannot stop them entirely. The reduction in public consumption and investments, which is necessary for non-inflationary development, is also problematic in its effects. Let us therefore set aside these conditions and consider what does happen when workers pass increases in contributions on to wages ($\Delta L = \Delta V = \Delta \bar{T}_N = 15$) while public consumption and investments are maintained at the initial level.

153. The following new system of equations then results:

(17.0) is replaced by (17.1)
$L = \bar{L} + \Delta V = 75$

(20.0) is replaced by (20.1)
$T_N = t_N L + \Delta V = 1/6\, L + 15$

(26.0) is replaced by (26.1)
$V = \bar{V} + \Delta V = 30$

To this are added the new equations:

(28.3) $C_F = 10 =$ constant

(29.3) $I = 25.75$ constant

while

(25.0) $S_F = \bar{S}_F = 5$, the condition of the stability of public saving, disappears, together with (18.0) $Q = \bar{Q} = 30$.

154. In this case the following "multipliers" for social charges and social benefits are obtained:

Z_i	$\frac{dZ_i}{dV}$	Z_i	$\frac{dZ_i}{dV}$	Z_i	$\frac{dZ_i}{dV}$	Z_i	$\frac{dZ_i}{dV}$
L	+ 1	C_N	− 0.15	S_N	0.017	T_N	+ 1.16
Q	− 0.55	C_U	− 0.09	S_U	0.27	T_U	− 0.9
W	+ 0.6	C_R	+ 0.95	S_R	+ 0.05	T_i	+ 0.05
Y	+ 0.5	C_F	0	S_F	+ 0.03	X	− 0.1
		C	+ 0.7	S_A	+ 0.2	M	+ 0.1
				J	0		

155. For $\Delta V = \Delta \bar{T}_N = 15$, this yields:

	W	A	N	U	R	F	K	
W	—	18.5	42.75	3.6	28.5	10	25.75	129
A	21.5	—	—	—	—	—	—	21.5
N	75	—	—	—	—	—	—	75
U	21.7	—	—	—	—	—	—	21.7
R	—	—	—	—	—	30	—	30
F	10.8	—	27.5	7.2	—	—	—	45.5
K	—	3	4.75	10.9	1.5	5.5	—	25.75
	129	21.5	75	21.7	30	45.5	25.75	

156. In relation to the initial situation, the following redistribution results from the above:

	Disposable income in absolute value		
	Initial situation	New equilibrium	Nominal change
Workers	50	47.5	— 2.5
Entrepreneurs	20	14	— 6
Pensioners	15	30	+ 15

	Disposable income as a percentage of the net domestic product at market prices	
	Initial situation	New equilibrium
Workers	50	44.1
Entrepreneurs	20	13
Pensioners	15	27.9

157. Since, in this case, the expansion of private consumption has not been offset by a reduction in public consumption and investments, a process of inflationary expansion takes place (i.e. under conditions of a constant real domestic product). This process is admittedly checked by the resulting deficit in the balance on current account, but on the whole it does bring about an inflationary increase in the net nominal domestic product. (1)

158. The entrepreneurs are thus enabled to pass part of the wage increases on in higher prices. The real value of workers' and employers' available income decreases, as well as their respective shares in the net domestic product at market prices. As a result of the inflationary trend, part of the real improvement in the pensioners' income is lost. If it is assumed that exports and imports remain stable, "exported inflation" would fail in its checking effect, the inflationary process would grow, and the entrepreneurs could pass a larger proportion of the rise in wages or in prices and, consequently, on to the pensioners and workers. On the other hand, the anti-inflationary checking effect of a deterioration in the balance on current account is very great in those countries of the Common Market, such as the Benelux States, which have extremely close ties with other countries and hence have a positive marginal import ratio m and a negative marginal export ratio x that reach very high levels. In such countries it is therefore relatively more difficult to pass on increases in social contributions and benefits which are confined to them. This problem will be dealt with further in hypothesis 7.

159. We find that, in a reflection process of this nature, the consumption ratio increases and the investment ratio decreases, although the deterioration in the balance on current account with foreign countries offsets, on the capital formation side, part of the decrease in private domestic saving.

A deterioration in the balance of payments of the country affected by the reflection processes examined will naturally release expansionist tendencies among its trading partners, whose balance on current account will improve at the same rate. Where import and export functions for individual countries are known, it is possible to quantify, in particular, the effects of hypothetical changes in social security in one, several or all the member countries of the Common Market by the "multi-sector multiplier" method of analysis developed by John S. Chipman (2)

(1) The extent of the change in the net domestic product Y depends on the marginal savings and taxation ratios as well as on the marginal import and export ratios, in accordance with the following formula:

$$\frac{dY}{dV} = \frac{c_R - c_N t_N \quad c_U\ (1 - t_U)}{\dfrac{1}{1 - m} + x - c_U\ (1 - t_i)\ (1 - t_U)}$$

(2) John S. Chipman: *The Theory of Inter-Sectoral Money Flows and Income Formation,* Baltimore, 1951.

and R.M. Goodwin. (1) A check would have to be made to see whether such "multipliers" of foreign trade for several countries can be calculated in order to analyse the effects of measures for the co-ordination of social security systems in the Common Market.

Hypothesis 4: Passing the entire increase in contributions on to wages and prices

160. In the preceding example, entrepreneurs have only succeeded—with investments and public consumption remaining stable—in passing on to prices a portion of the rise in wages brought about by increases in social security contributions. Let us, therefore, ask ourselves to what extent must public consumption and investments be expanded to enable not only increases in contributions but also rises in wages to be passed on entirely to prices in such a way that gross profits remain unchanged. The system of equations will then have to be modified in the following manner:

(17.0) is replaced by (17.2)

$$L = \bar{L} + \Delta V = 75$$

(20.0) is replaced by (20.1)

$$T_N = t_N\bar{L} + \Delta V = 1/6\,L + 15$$

(26.0) is replaced by (26.1)

$$V_R = \bar{V} = 30.$$

161. For the rest, the equations of the initial situation remain valid. From the reduced form of the new system of equations the following table of "multipliers" can be derived:

Z_i	$\frac{dZ_i}{dV}$	Z_i	$\frac{dZ_i}{dV}$	Z_i	$\frac{dZ_i}{dV}$	Z_i	$\frac{dZ_i}{dV}$
L	+ 1	C_N	− 0.15	S_N	− 0.017	T_N	1.16
Q	+ 0	C_U	0	S_U	0	T_U	0
W	+ 1.33	C_R	+ 0.95	S_R	+ 0.05	T_i	0.111
Y	+ 1.11	C_F	+ 0.27	S_F	0	X	− 0.22
		C	+ 1.07	S_A	+ 0.44	M	0.22
				I	+ 0.47		

(1) R.M. Goodwin: *The Multiplier as Matrix,* Economic Journal, Dec. 1949.

162. Solution of the system of equations for $\Delta V = \Delta T_N = 15$ gives the following matrix:

	W	A	N	U	R	F	K	
W	—	16.7	42.75	5	28.5	14.2	32.85	140
A	23.3	—	—	—	—	—	—	23.3
N	75	—	—	—	—	—	—	75
U	30	—	—	—	—	—	—	30
R	—	—	—	—	—	30	—	30
F	11.7	—	27.5	10	—	—	—	49.2
K	—	6.6	4.75	15	1.5	5	—	32.85
	140	23.3	75	30	30	49.2	32.85	

163. The effect of redistribution is shown in the following table:

	Disposable income (absolute value)		
	Initial situation	New equilibrium	Nominal change
Workers	50	47.5	− 2.5
Entrepreneurs	20	20	0
Pensioners	15	30	+ 15

	Disposable income as a percentage of the net domestic product at market prices	
	Initial situation	New equilibrium
Workers	50	40.8
Entrepreneurs	20	17.2
Pensioners	15	25.8

164. It can be seen that, if the full amount of the increase in contributions is to be passed on to prices, it will not be sufficient for public consumption and investments to remain stable: they will both have to increase, in a process of expansion that will lead to a sharp deficit in the balance on current account. The assumption that this would take place during such repercussion processes is in no way unrealistic, considering the limited possibilities of a restrictive monetary and credit policy, and

the inadequate discipline observed by the State financial authorities in short-term economic and price policy matters. If the trend is favourable, investors will endeavour, in accordance with inflationary developments, at least to maintain the real volume of their planned investments; or, owing to the increasing use of available capacity, they will even consider increasing their real investments, in conformity with the accelerator theory. Public consumption in the form of services automatically follows the assumed increases in wages, and the other forms of public consumption also adapt themselves rapidly, as a rule to sharply rising prices.

165. If the share of investments and public consumption used in the national product for increases in wages equal to the amount of increased social security contributions is assumed to be constant, a distribution of income is obtained which corresponds approximately to that resulting from hypothesis 4.

In this case, the workers must actually bear the major part of the increase in pensions, but the entrepreneurs also contribute to the redistribution of income for the benefit of the pensioners as the real value of their nominal fixed income diminishes. The latter are hit by inflationary developments even more than in the preceding example. Attention should be given to the fact that such a hundred-per-cent transfer of burdens increases the deficit in the balance on current account even more than the partial transfer envisaged in hypothesis 3.

Hypothesis 5: Effects of the redistribution of accumulated capital by social security bodies

166. It is important for the results of the redistribution process that social security bodies should be in a position to make use of receipts from contributions for the formation of capital.

In order to analyse the significance of this factor in isolation, let us make the unrealistic assumption that the workers could not reflect in their wages an increase in contributions of $\Delta \bar{T}_N = 15$, and that this increase in contributions would be fully utilized by social security bodies for the formation of reserves. It may be assumed that investments and public consumption are stable. The following changes then take place in our system of equations:

(20.0) is replaced by (20.1)

$T_N = t_N L + \Delta \bar{T}_N = 1/6\, L + 15$

(18.0) $Q = \bar{Q} = 30$ and (25.0) $S_F = \bar{S}_F = 5$ disappear, while the following are added:

(28.3) C_F = constant = 10 and (29.3) I = constant = 25.75.

167. In this case the table given below is obtained:

Z_i	$\frac{dZ_i}{d\bar{T}_N}$	Z_i	$\frac{dZ_i}{d\bar{T}_N}$	Z_i	$\frac{dZ_i}{d\bar{T}_N}$	Z_i	$\frac{dZ_i}{d\bar{T}_N}$
L	0	C_N	− 0.9	S_N	− 0.1	T_N	1
Q	− 0.65	C_U	− 0.11	S_U	− 0.31	T_U	− 0.21
W	− 0.87	C_R	0	S_R	0	T_i	− 0.07
Y	− 0.72	C_F	0	S_F	+ 0.7	X	+ 0.15
		C	− 1.01	S_A	− 0.29	M	− 0.15
				I	0		

168. The following results as a new numerical equilibrium when $\bar{T}_N = 15$:

	W	A	N	U	R	F	K	
W	—	22.1	31.5	3.4	14.25	10	25.75	107.0
A	17.8	—	—	—	—	—	—	17.8
N	60	—	—	—	—	—	—	60
U	20.3	—	—	—	—	—	—	20.3
R	—	—	—	—	—	15	—	15
F	8.9	—	25	6.8	—	—	—	40.5
K	—	4.3	3.5	10.2	0.75	15.5	—	25.75
	107.0	17.8	60	20.4	15	40.5	25.75	

169. A comparison of the distribution of income shows:

	Disposable income				
	In absolute value			As a percentage of the net domestic product at market prices	
	Initial situation	New equilibrium	Change	Initial situation	New equilibrium
Workers	50	35	− 15	50	39.4
Entrepreneurs	20	13.5	− 6.5	20	15.0
Pensioners	15	15	0	15	16.7

170. It is apparent that a reduction in workers' consumption which is not offset by any other additional expenditure initiates a contractive multiplier process

which first brings about a new equilibrium via a substantial decline in the national product; this new equilibrium will probably be one of underemployment. (1) The shrinking process is checked by improvement of the current account balance. If exports and/or imports were stable, the fall in national product and entrepreneurs' profits would be even more noticeable. Thus, just as imports and exports dependent on income check inflationary processes, so they also mitigate the deflationary consequences of isolated increases in social security contributions.

171. In the conditions of this model hypothesis, the balance of payments improves and the investment ratio rises.

The pensioners perhaps really benefit from the fall in prices. Their share in the shrinking national product increases.

Naturally, this analysis is only valid within the narrow and seldom wholly fulfilled terms of the multiplier process, in particular, on the assumption that investments and public expenditure are constant. In real conditions, such processes will never be more than one component of a complex adaptation process.

Hypothesis 6: Redistribution when employment is dependent on profits and under a full employment policy

172. We have repeatedly had to draw attention to the fact that social policy redistribution measures will possibly or probably influence employment.

Experience shows that there is a positive correlation between profits and the demand for manpower. (2)

If total economic profits fall, enterprises or sections of enterprises which formerly just managed to break even (marginal enterprises) will only be able to operate at a loss and will consequently have to shut down. However, the fall in profits affects first and foremost the propensity to invest and the demand for manpower by enterprises which is necessary for investments.

173. The great importance of expected or realized profits in private investors' decisions has been sufficiently proved by econometric calculations. (3) Accordingly, if the workers succeed in getting considerable increases in contributions reflected in their wages, and if the entrepreneurs for their part cannot pass the additional costs on in increased prices, a decrease in possibilities of employment is to be expected.

174. But it so happens that, whether explicitly or not, full employment is one of the main objectives of economic policy in all modern economies. In spite of affirmations to the contrary, slight inflation with a high level of employment will generally be preferred to perfect price stability accompanied by fairly high unemployment. This is, however, of considerable importance for the redistribution effects of social security measures. First of all, the Central Bank and the State may resist any attempt at passing higher social security charges on in prices. But if the fall in entrepreneurs' profits involves more and more dismissals of labour, the restrictive measures will frequently be relaxed, and this will lead to an expansion in demand which will ultimately enable increased costs to be reflected in prices all the same. In order to investigate this in our model, let us assume that the following simple functional relation exists between employment (B), profits, and costs consisting of wages and indirect taxes:

$$(30)\quad B = k + \frac{Q}{L+T_i} \cdot n = 25 + \frac{Q}{L+T_I} \cdot 175$$

(1) The change in income is:

$$\frac{dY}{dT} = \frac{c_N}{\frac{1}{1-m} + x - c_U\,(1-t_U)\,(1-t_i)}$$

(2) On the theory of correlation between profits and the demand for manpower, see:
Carl Föhl: *Kreislaufanalytische Untersuchung der Vermögensbildung in der Bundesrepublik und der Beeinflussbarkeit ihrer Verteilung* (An investigation, by means of analysis of the economic circuit, of capital formation in the Federal Republic and of the ways in which its distribution can be influenced); Publications of the Institut für angewandte Wirtschaftsforschung, Tübingen, Vol. 2, 1964, in particular p. 10 *et seq.*

(3) Jan Tinbergen: *Statistical Testing of Business Cycle Theories* Vol. I: A Method and its Application to Investment Activity, Geneva, 1939.
The author has calculated an investment function according to which profits are of greater importance for investments than all other variables.
A positive correlation has also been established between profits and investments through econometric calculations by Colin Clark: *National Income at its Climax,* in The Economic Journal, Vol. 47, 1937, pp. 308-320, and by Lawrence R. Klein and A.S. Goldberger: *An Econometric Model of the United States 1929-52,* Amsterdam, 1955.
Written and oral inquiries carried out in Germany by the IFO—Institut für Wirtschaftsforschung, Munich, empirically established a degree of dependence of private decisions in matters of investment on the self-financing possibilities of enterprises, which possibilities themselves depend on profits (cf. Thomas Oursin: *Probleme industrieller Investitionsentscheidungen* (Problems of industrial investment decisions), publications of the IFO—Institut für Wirtschaftsforschung No. 49, Berlin and Munich, p. 57 *et seq.*).

175. Any increase in the ratio of gross profits to costs increases employment, and any decline in this ratio reduces employment. (1)

If the values Q, L and T_I given in the numerical model for the initial situation are introduced into the employment equations, a figure B = 100 is obtained for employment. Let us assume that full employment is thus realized, and that those responsible for the economic policy are willing and able to maintain the level of full employment B = 100 under all circumstances. For $B = \bar{B} = 100$, the following economic aim function is obtained:

(30.6) $B = 25 + \frac{Q}{L+T_I} \cdot 175 = 100$, or in another form:

(30.6) $7\,Q - 3\,L - 3\,T_I = 0.$

176. Let us assume further that the workers succeed in getting the increase in contributions reflected fully in their wages and salaries ($\Delta L = \Delta \bar{T}_N = \Delta V = 15$). Investments and public consumption can remain stable. If the entrepreneurs could not pass the increase in costs on to prices, the distribution of incomes of the second hypothesis would at first be obtained, with the entrepreneurs' profits sharply reduced. However, according to employment function (30) the entrepreneurs would then proceed to dismiss workers. In the case of the second hypothesis, employment would fall from 100 to 39. The function expressing the objective of full employment (30.6) would be adversely affected, and economic policy would then have to initiate an expansion of incomes and profits until (30.6) is realized.

177. Let us examine the result to which this process should lead. In relation to the initial situation, the system of equations changes as follows:

(17.0) is replaced by (17.2)
$L = \bar{L} + \Delta V = 75$

(20.0) is replaced by (20.1)
$T_N = t_N L + \Delta V = 1/6\,L + 15$

(26.0) is replaced by (26.1)
$V = \bar{V} = 30$

The limitation of profits (18.0) $Q = \bar{Q} = 30$ disappears and the condition of full employment
(30.6) $7\,Q - 3\,L - 3\,T_I = 0$
is added.

The resulting "multiplier" table is as follows:

Z_i	$\frac{dZ_i}{dV}$	Z_i	$\frac{dZ_i}{dV}$	Z_i	$\frac{dZ_i}{dV}$	Z_i	$\frac{dZ_i}{dV}$
L	+ 0.1	C_N	− 0.15	S_N	− 0.02	T_N	1.163
Q	+ 0.5	C_U	+ 0.13	S_U	+ 0.25	T_U	0.17
W	+ 2.0	C_R	+ 0.95	S_R	+ 0.05	T_i	0.17
Y	+ 1.67	C_F	+ 0.5	S_F	0	X	− 0.33
		C	+ 1.43	S_A	+ 0.67	M	0.33
				J	+ 0.95		

178. For $\Delta V = 15$, this solution is obtained:

	W	A	N	U	R	F	K	
W	—	15	42.75	6.25	28.5	17.5	40	150
A	25	—	—	—	—	—	—	25
N	75	—	—	—	—	—	—	75
U	37.5	—	—	—	—	—	—	37.5
R	—	—	—	—	—	30	—	30
F	12.5	—	27.5	12.5	—	—	—	52.5
K	—	10	4.75	18.75	1.5	5	—	40
	150	25	75	37.5	30	52.5	40	

179. The distribution of incomes has thus changed as follows:

	Disposable income				
	In absolute value			As a percentage of the net domestic product at market prices	
	Initial situation	New equilibrium	Change	Initial situation	New equilibrium
Workers	50	47.5	− 2.5	50	38
Entrepreneurs	20	25	+ 5	20	20
Pensioners	15	30	+ 15	15	24

(1) More complex models of employment and distribution theory, furnishing basically similar results, have been developed and elucidated by:
Carl Föhl: *op. cit.* p. 8 *et seq.*, and by:
Hans Joachim Rüstow: *Die Entwicklung der Lohn- und Gewinnquote in der Industriegesellschaft — ihre Bedeutung für das Warhstum, die Einkommensverteilung und konjunkturelle Steuerung der Wirtschaft,* 1965 (typescript—The development of the wages and salaries and profits ratios in industrial society—its importance for the growth, distribution of incomes and planned direction of the economy).

180. In conditions of full employment a new equilibrium is therefore only reached by a growth multiplier process (1) with increasing investments and public consumer expenditure and an adverse balance on current account. This process will only stop when the relation obtaining in the initial situation between the level of gross profits and the level of the costs of wages and indirect taxes is reached again. Entrepreneurs can maintain intact their share of net profits, after deduction of taxes, in the national product at market prices; workers must suffer a reduction in their share of the national product, despite the increase in their wages by the amount of the increase in social security contributions; and the real income of the pensioners, as well as their share in the national product, increases considerably less than if the nominal national product had remained constant.

To achieve this new equilibrium, maintaining the level of employment, the investment ratio must not remain constant but must rise, especially to offset the contraction of demand caused by a sharp deterioration in the balance on current account.

Hypothesis 7: Policy of equilibrium of the balance on current account and redistribution

181. The balance of payments policy is very important for the results of the process of redistribution caused by an increase in social security contributions and benefits. In all the hypotheses leading to a change in the national product or in the receipts of the value added sector, a disequilibrium in the balance on current account resulted from our assumption that imports and exports depend on these income quantities.

182. If, however, economic policy is directed to maintaining the balance on current account in permanent equilibrium, the following equations are obtained, assuming that our model hypotheses on the import and export functions are valid:

Equilibrium condition

(31) $X = M$

Export function

(15.0) $X = \bar{X} - x\,(W-M) = 40 - \frac{1}{5}\,(W-M)$

Import function

(16.0) $M = mW = \frac{1}{6}\,W$

(1) In this case:

$$\frac{dY}{dV} = \frac{1}{\frac{n}{n+B-k} - t_i}$$

Equilibrium values

$$W = \frac{X}{m(1-x)+x} = 120$$

$M = X = 20$

$Y = W - M = 100$

183. Accordingly, in this case economic policy cannot afford a change in nominal incomes or to have social security charges passed on to prices.
The results of hypotheses 3 to 6 would then be excluded and it would be possible to conceive, with constant income, redistribution results between the extremes of the hypothesis 1 (constancy of workers' gross wages) and the hypothesis 2 (reduction of entrepreneurs' gross profits by the rise in contributions reflected in wages).

184. In practice, no policy could be expected that would give such undue prominence to the aim of maintaining the equilibrium of the current account. In any case, the more energetic the fight against the deterioration of the balance of payments (for example, because of a shortage of foreign exchange), the more difficult the expansive passing-on processes will become.

It should, however, be recalled here that the positive correlation of imports and the negative correlation of exports with demand or domestic product, assumed in the model, is only valid under the restrictive conditions that "real" production costs are constant and inflationary processes are confined to one single country.

185. The nominal costs per unit of output and the prices need not necessarily rise if the increase in the nominal costs per factor of production unit caused by passing on social security charges are offset by a corresponding reduction in the real factor cost per unit of output. In this case no decline in exports need be expected either, while a rise in imports would seem only likely in so far as these are a function of real income.

186. If the hypothetical passing-on processes in a country take place in the context of the slight inflation (less slight after wars) which has prevailed throughout the world for the last hundred years, domestic income may increase even in countries whose economies are closely bound up with those of foreign countries, without the balance of trade tending to become unfavourable. In this case the equilibrium of the balance of payments and the passing-on of social security expenditure are no longer mutually exclusive.

B - OTHER FORMS OF FINANCING

187. Increased social security contributions by employers. We can treat employers' contributions in exactly

the same manner as workers' contributions, namely, as a component of gross wages and salaries. Quite apart from the fact that by far the greater part of employers' contributions are assessed on the basis of wages and salaries, such an approach is justified on the practical grounds that these contributions are paid by the employers on behalf of their workers, who thereby acquire the right to social security benefits, and also because, in wage negotiations, employers consider these contributions as a component of wages and calculate their demand for manpower accordingly.

188. However, in various empirical studies employers' contributions have been regarded as indirect taxes. (1) This hypothesis was taken as basis for the statistical example concerning France in Chapter II. Formally, it is also justifiable to consider them as a charge on entrepreneurs' profits, like all other costs.
As regards the effective incidence of employers' contributions it is not, of course, their formal classification which is decisive, but the process of transfer which they set in motion.

189. The entrepreneurs may endeavour to pass the increases in contribution either "back" on to wages or "forward" on to the prices of goods. In the present-day conditions of fixed minimum wages, it would be very difficult to pass the increases in employers' contributions back on to wages, i.e. to maintain fixed overall wage costs including employers' social security contributions. Thus, the redistribution resulting from our first hypothesis is improbable. However, in the longer term it may perfectly well be assumed that there would be a stronger resistance to wage and salary increases, i.e. a slowing-down in the growth of wages and salaries minus the amount of the employers' contributions. And this would involve in the longer run some "passing-back" to the workers of increased social charges.

190. The entrepreneurs will try very hard to pass the additional costs on to prices. The success of this attempt, in the economy generally, depends on the conditions which were discussed in the hypotheses for the analysis of increases in workers' contributions. The results arrived at there are consequently applicable to employers' contributions.

191. Increased direct taxation of workers. If the general direct taxes paid by workers are increased for the purpose of financing additional social security benefits, two differences would have to be noted as regards the incidence of any increase in workers' contributions to social security.

192. As stated, in general taxes the individual taxpayer receives no personal *quid pro quo* for what he pays. These taxes can therefore be considered more as a pure and simple reduction in income than can social security contributions, for which the counterbalancing benefit is calculable. It is doubtful whether and, if so, to what extent workers and their trade unions regard the right to benefits, granted against contributions assigned to social security for that purpose, as a motive for moderation when making wage claims (see sec. 135). If such a differentiated valuation were to be made of social security contributions and taxes, the inclination to pass on the additional burden could, at any rate, be stronger in the case of taxes than in the case of contributions. The first hypothesis (constant wages) would therefore be even less probable.

193. Most social security contributions are proportional to the income on which they are levied. Since the limiting incomes for the calculation of contributions are frequently lower than the actual incomes of the higher-paid workers, the contributions have, on the whole, a slightly regressive incidence within the category "workers". Taxes on wages and salaries, on the other hand, more often than not increase progressively with income. Hence, when social security benefits are financed from general direct taxes levied on the workers, the differences in income between workers show a tendency to decrease. Moreover, the category of workers directly affected by the taxes will be somewhat larger than the category affected by social security contributions, since it includes certain non-self-employed workers who are not subject to compulsory insurance and payment of contributions, at any rate in some branches of social security. This effect is, however, of little importance, since the number of workers subject to compulsory insurance is at present a very high proportion of the total number of workers. Otherwise, the statements made in connection with hypotheses 1 to 6 remain entirely valid for redistribution by income classes.

194. Increased taxes on entrepreneurs' profits. The financing of social security benefits by taxes on profits shows some differences from financing from other sources.

Entrepreneurs' costs are not, at first, increased. The workers have, at first, no cause to formulate claims for higher wages. Consequently, attempts to pass on charges originating in costs will be weaker. Nevertheless, entrepreneurs will endeavour to offset the loss of profits and,

(1) Cf. Peacock, Alan (ed.): *Income Redistribution and Social Policy,* London, 1954; Hensen, H.: *Die Finanzen der sozialen Sicherung im Kreislauf der Wirtschaft* (Social security finances within the economy), Kieler Studien, Vol. 36, 1955; Zeitel, G.: *Die Steuerlastverteilung in der Bundesrepublik Deutschland* (Distribution of the burden of taxation in the Federal Republic of Germany), Tübingen, 1959.

if the monetary and credit policies are weak, and if overall private consumption increases while public consumption and investments remain constant, or if a policy of full employment is pursued with investments dependent on profits, they will partly or entirely succeed in passing these losses on, as in the calculation of our corresponding hypotheses. If an inflationary development is in progress, impulses to pass on burdens will also come from the costs side, via the workers' demands for more wages.

195. Again, it should be borne in mind that, because of the progressive rate of taxation on profits, entrepreneurs with high incomes will be more heavily burdened than entrepreneurs with more modest profits. A redistribution therefore takes place within the entrepreneurial class.

196. Increased indirect taxes. Attempts at passing burdens "back" or "forward" initiated by an increase in indirect taxes, and the conditions for their success or failure, are in principle the same as in the case of an increase in employers' social security contributions (if one disregards the fact that the basis for the computation of indirect taxes is different). It is therefore unnecessary to analyse this situation separately.

IV - Summary

197. Chapter II is based on the hypothesis that the factor incomes of the various classes and the total national product, as well as taxes and other transfer incomes which do not serve to finance social security benefits, are constant and independent of social security measures. If this hypothesis is dropped, it becomes quite impossible to appraise exactly and clearly the incidence of social security on the formation, distribution and use of the national product. But in real economic conditions these magnitudes, which are here considered constant, generally vary with the changes occurring in the domain of social security.

198. The seven hypotheses taken as examples of such processes of change, all leading to different redistributions, could be supplemented by numerous other hypotheses of no lesser significance. It is also apparent that even the slightest variations in the parameters of the behavioural functions assumed in these typical examples may lead to very different results in regard to redistribution. If we wished to carry out a full dynamic analysis of the processes instead of being satisfied with the static comparison of equilibrium conditions as performed here, the variety of possible redistribution effects would doubtless be even more confusing. However, closer scrutiny of the conditions under which the various model results were achieved reveals that there are nevertheless no grounds for despairing completely. The macroeconomic effects of an increase in contributions and benefits on the incomes flow are seen to be mainly dependent on the following factors:

MONETARY AND CREDIT POLICIES

199. If the monetary and credit policies succeed in checking any inflationary expansion in demand, the increase in social charges cannot be reflected in prices. As a rule, however, these policies cannot prevent the inflationary repercussion processes entirely, or are unable to do so because greater importance is attached to other economic objectives—in particular full employment. Conditions are thereby created in which workers can get at least part of the social charges reflected in their wages and salaries, and entrepreneurs, in their turn, can pass the additional costs on entirely or partially in prices (hypotheses of 3 and 4). The corresponding models will therefore have to be constructed on hypotheses much closer to real conditions than the entirely non-inflationary hypotheses models (hypotheses 1, 2 and 7).

USE OF ADDITIONAL RECEIPTS FROM CONTRIBUTIONS

200. If the increases in the receipts from contributions are saved by the social security bodies or if the pensioners benefiting from them have a higher marginal saving ratio than the income classes bearing the cost of the increases, an inhibiting multiplier process will become apparent, accompanied by particularly important profit-reducing effects, when investments and public consumption remain constant (hypothesis 5). Generally and in the long term, however, the accumulation of reserves by social security bodies will absorb only a fraction of the increased receipts from contributions. Most of the increase will be added to the income of the pensioners, who certainly have a much higher marginal consumption ratio than entrepreneurs and mostly a slightly higher marginal ratio than workers. In these conditions an expansionary multiplier process, accompanied by repercussion processes, becomes on the whole more likely, and this leads us to hypotheses involving an increase in the nominal national product (hypotheses 3 to 6).

INVESTMENT FUNCTIONS AND PUBLIC CONSUMPTION

201. It is theoretically conceivable that there should be no repercussion on prices when public consumption and investments are so inhibited as fully to counterbalance an expansion of private consumption initiated by social security (hypothesis 2). However, in this case too it must be assumed that prices will be increased, especially because of monopoly forms of market conditions, even

if such increases involve constraints on real production and employment. Public consumption and investments are more likely to be maintained at the same level, at least nominally (hypothesis 3), or even increased (hypotheses 4 and 6), and this would enable social charges to be passed on to prices, either wholly or partially.

IMPORT AND EXPORT FUNCTIONS

202. Our assumption, that processes which have an expansive effect on the incomes flow lead to a deterioration in the balance on current account with foreign countries, and processes with a contracting effect lead to an improvement, could, generally speaking, be realistic. Accordingly, it is also possible to assume that the expansive and contractive processes of repercussion initiated by social security measures are weakened by foreign trade influences. The more closely a national economy is bound up with other countries the stronger this effect will be, as a rule. It should, however, be noted that this statement is entirely valid only for isolated measures taken by one country, and is much less true when changes in the social security system are made simultaneously in several countries which are closely dependent on each other (throughout the whole EEC, for example) because here, for instance, the effects of an inflationary process in one country that are detrimental to the balance of payments are largely offset by the effects of inflationary processes in other countries that are favourable to the balance of payments.

POLICY OF FULL EMPLOYMENT WHEN EMPLOYMENT IS DEPENDENT UPON PROFITS

203. In the long run perhaps the most important hypothesis is that according to which long-term economic policy, in order to maintain full employment, will not allow the ratio of profits to costs to fall below the minimum level (hypothesis 6), because full employment has in practice priority over price stability and equilibrium of the balance of payments. As a result of this, it is necessary to exclude in the long term hypotheses which envisage imputing all or most of the burden of social security expenditure to the entrepreneurs.

* * *

204. Summing up, we are under the impression that, on the whole, it should be expected that, in the medium or long-term, social charges will be reflected not fully but partially in wages, and that the consequent increases in wages will be mostly passed on to prices by the entrepreneurs.

205. This means that:

(*i*) the workers will have to bear a considerable part of the real burden of social benefits;

(*ii*) the entrepreneurs are thereby comparatively little affected;

(*iii*) the real value of social benefits to the beneficiaries is again reduced by increased prices resulting from the repercussion process.

206. In the short term, especially as a result of economic trends, the relative distribution of burdens between these three categories of recipients of income will vary considerably.

Consequently, although it is impossible to determine quantitatively, *ex post facto,* the effective incidence of the whole of our social security system, we should be more optimistic about the possibility of ascertaining the direction in which the redistribution effects of concrete changes planned for the social security schemes will tend (and it is just this possibility that could be important in connection with any efforts towards harmonization in the EEC).

207. Thus, the economic situation, the conditions on the labour market, the possibilities offered by the monetary and credit policies, the government's budget policy, the balance of payments policy, the investment plans and the consumption functions of the various categories are all known sufficiently to enable us to estimate the direction and the approximate strength of the repercussion processes which may be expected. If this can be done it is theoretically also possible, although perhaps politically impracticable, to graduate these changes in the domain of social security with due regard to their nature, their significance, and timing, and to coordinate them with monetary and financial policies, in such a way as to achieve the redistribution effects desired.

EXPLANATION
OF THE MATHEMATICAL SYMBOLS USED

208.

- A = Receipts of foreign countries from the country concerned
- B = Employment
- C_F = Public consumption
- C_L = Workers' consumption
- c_L = Workers' marginal consumption ratio
- C_R = Pensioners' consumption
- c_R = Pensioners' marginal consumption ratio
- C_U = Entrepreneurs' consumption
- c_U = Entrepreneurs' marginal consumption ratio
- F = State receipts from taxes and social security contributions
- I = Investments
- K = Capital formation in the national economy
- L = Gross wages and salaries

Results of the various hypotheses on the redistribution effect of increases in social security contributions by workers and increases in pensions

	Disposable incomes								
	In absolute amounts						As percentage of net domestic product at market prices		
	In absolute figures			Changes in relation to initial situation					
	W (1)	E (2)	P (3)	W	E	P	W	E	P
Initial situation	50	20	15	—	—	—	50	20	15
Hypothesis 1: No passing-on of increases with the domestic product remaining constant	35	20	15	− 15	0	+ 15	35	20	30
Hypothesis 2: Passing increases in contributions on to wages with the domestic product remaining constant	47.5	10	30	− 2.5	− 10	+ 15	47.5	10	30
Hypothesis 3: Passing increases in contributions on to wages with public consumption and investments remaining constant	47.5	14	30	− 2.5	− 6	+ 15	44.1	13	27.9
Hypothesis 4: Passing increases in contributions on to wages and prices	47.5	20	30	− 2.5	0	+ 15	40.8	17.2	25.8
Hypothesis 5: Use of increases in contributions for the formation of capital by social security bodies	35	13	15	− 15	− 7	0	39.6	14.7	17
Hypothesis 6: Employment dependent on profits and under a full employment policy	47.5	25	30	− 2.5	+ 5	+ 15	38	20	24

(1) W: Workers
(2) E: Entrepreneurs
(3) P: Pensioners

M = Imports
$\bar{M}$ = Autonomous imports (independent of income)
m = dM/dW = Marginal import ratio
N = Receipts of entrepreneurs' households
Q = Entrepreneurs' gross profits
R = Receipts of pensioners' households
S_A = $M - X$ = Import surplus
S_F = Public saving
S_L = Saving by workers
s_L = Workers' marginal saving ratio
S_U = Saving by entrepreneurs
s_U = Entrepreneurs' marginal saving ratio
T_i = Indirect taxes
t_i = dT_i/dY = Marginal indirect taxation ratio
T_N = Workers' direct taxes including social security contributions
t_N = Workers' marginal taxation ratio
T_U = Entrepreneurs' direct taxes
t_U = Entrepreneurs' marginal taxation ratio
U = Entrepreneurs' gross income
V = Transfers by the public authorities to pensioners' households
W = Receipts or expenditure of value-added sectors
X = Exports
$\bar{X}$ = Autonomous exports (independent of income)
x = dX/dY = Marginal export ratio
Y = Net domestic product at market prices

The superscripted symbols (for example $\bar{M}$, $\bar{X}$, $\bar{L}$, $\bar{Y}$) always indicate assumed exogenous (autonomous) magnitudes, which are not changed by the flow processes analysed.

ANNEX I

Modified version of the econometric model given in Chapter III

209. The model used in this chapter can be modified with little trouble by clearly defining the macroeconomic variables which directly influence the financial development of social security.

Since these quantities influence the other variables which determine the whole system, and are in turn affected by those other variables, the effects of redistribution can thereby be quantitatively changed to a varying extent. Furthermore, since socio-political decisions in the domain of social security depend to a large extent on the development of its financial stability, it might be advisable to demonstrate the effects of a change in some of them on the main components of the social security appropriation account, especially on its savings.

210. The matrix could then have the following form, where:

L = Gross wages and salaries, excluding employers' contributions to social security;

P_U = Employers' contributions to social security;

P_N = Workers' contributions to social security;

C_S = Social security administrative expenditure;

V_N = Social security benefits granted to workers;

V_R = Social security benefits granted to pensioners;

S_S = Social security savings;

U_R = Transfers by the public authorities to pensioners;

U_S = Transfers by the public authorities to social security;

S = Social security receipts;

F = State receipts from taxes, excluding social security contributions.

Circular-flow matrix

Expenditure / Receipts	W	A	N	U	R	S	F	K
W	—	X	C_N	C_U	C_R	C_S	C_F	I
A	M							
N	L					V_N		
U	Q							
R	—					V_R	U_R	
S	P_U	—	P_N	—			U_S	
F	T_I		T_N	T_U				
K	—	S_A	S_N	S_U	S_R	S_S	S_F	

211. The above matrix can be converted into the following system of 16 equations with 33 variables, of which only 15 are linearly independent:

(1) $W = M + L + Q + P_U + T_I$

(2) $A = X + S_A$

(3) $N = C_N + P_N + T_N + S_N$

(4) $U = C_U + T_U + S_U$

(5) $R = C_R + S_R$

(6) $S = C_S + V_N + V_R + S_S$

(7) $F = C_F + U_R + U_S + S_F$

(8) $K = I$

(9) $W = X + C_N + C_U + C_R + C_S + C_F + I$

(10) $A = M$

(11) $N = L + V_N$

(12) $U = Q$

(13) $R = V_R + U_R$

(14) $S = P_U + P_N + U_S$

(15) $F = T_I + T_U + T_N$

(16) $K = S_A + S_N + S_U + S_R + S_S + S_F$

212. The 18 further equations which are necessary for determination of the initial situation could take the following form, for example:

(17.0) $X = 40 - \frac{1}{5}(W-M)$

(18.0) $M = \frac{1}{6}W$

(19.0) $L = 50$

(20.0) $Q = 20$

(21.0) $T_I = 0.15\,(W-M)$

(22.0) $T_N = 0.20\,(L-P_N)$

(23.0) $T_U = 0.30\,Q$

(24.0) $P_N = 0.10\,L$

(25.0) $P_U = 0.30\,L$

(26.0) $U_S = \frac{1}{6}F$

(27.0) $S_N = 0.10\,(N-P_N-T_N)$

$$(28.0)\quad S_U = \frac{3}{4}(U - T_U)$$

$$(29.0)\quad S_R = 0.05\ (V_R + U_R)$$

$$(30.0)\quad S_F = 5$$

$$(31.0)\quad C_S = 0.05\ S$$

$$(32.0)\quad V_N = 14$$

$$(33.0)\quad V_R = 5$$

$$(34.0)\quad U_R = 10$$

213. Only equations (24.0), (25.0), (26.0), (31.0) and (33.0) are new; the other relations are the result of adjustments or changes of secondary importance.

Equation (24.0) gives an overall rate for workers' contributions $P_N = 0.10$; equation (25.0) gives the overall rate for employers' contributions $P_U = 0.30$. Equation (26.0) postulates that the share of tax receipts allocated to social security transers $f = 1/6$.

214. Equation (31.0) assumes that the percentage of social security receipts devoted to covering its administrative expenditure is $C_S = 0.05\ \%$.

On the basis of the above, the initial situation, and the redistribution processes set on foot by the changes in social security corresponding to the various hypotheses envisaged, are represented in concrete form in the tables given later.

215. The enlarged model contains, however, two additional hypotheses, namely:

Hypothesis H_1: increased social security benefits for pensioners without increased contributions, assuming the nominal national product remains constant.

Hypothesis H_2: increased social security benefits for pensioners without increased contributions, assuming that public consumption and investments remain constant.

216. In general it is found that the conclusions to which this model leads are not fundamentally different from those reached from examination of the similar cases dealt with in the model used previously in the present chapter; the differences in disposable incomes of workers, employers and pensioners are only quantitative. For example, in the case of the first hypothesis it is apparent that the workers bear the major part of the increase in contributions; but they do not bear all the increase, because of a correlative reduction in direct taxes.

On the other hand, tax receipts diminish, as well as transfers by the public authorities to social security; the relative importance of indirect taxes increases.

217. With the national product remaining unchanged, the new equilibrium can only be reached by a fairly appreciable diminution in investments owing to reduced savings by workers, social security and public authorities. In the case of hypothesis H_2, as the increase in private consumption is not offset by a reduction in public consumption and investments, a process of inflationary expansion occurs. Although this process is checked by a deficit in the balance on the current external account, it ultimately results in an inflationary increase of the net national product. The total consumption ratio increases and the investment ratio diminishes.

218. Social security savings fall, thus jeopardizing its equilibrium.

The real value of the workers' disposable incomes decreases, as well as their share in the net national product at market prices; for the entrepreneurs, these magnitudes increase.

The pensioners see part of the real improvement in their income lost as a result of the inflationary trend.

219.

Initial situation

	W	A	N	U	R	S	F	K	
W	—	20	45	3.5	14.25	1.25	10	26	120
A	20	—	—	—	—	—	—	—	20
N	50	—	—	—	—	14	—	—	64
U	20	—	—	—	—	—	—	—	20
R	—	—	—	—	—	5	10	—	15
S	15	—	5	—	—	—	5	—	25
F	15	—	9	6	—	—	—	—	30
K	—	—	5	10.5	0.75	4.75	5	—	26
	120	20	64	20	15	25	30	26	

Disposable income
in absolute value and as a percentage
of the net national product at market prices

Workers	A	50
Entrepreneurs	U	14
Pensioners	R	15
Social security	S	6
State	F	15
		100

220. *Hypothesis 1:* No passing-on of changes, with the nominal national product constant

(24.1) P_N	= 0.10 L + 15	instead of	(24.0)
(33.1) V_R	= 20	instead of	(33.0)
(35.1) W—M	= 100	instead of	(20.0)
(36.1) C_F	= 10	instead of	(33.0)

	W	A	N	U	R	S	F	K	
W	—	20	34.2	3.5	28.5	2	10	21.8	120
A	20	—	—	—	—	—	—	—	20
N	50	—	—	—	—	14	—	—	64
U	20	—	—	—	—	—	—	—	20
R	—	—	—	—	—	20	10	—	30
S	15	—	20	—	—	—	4.5	—	39.5
F	15	—	6	6	—	—	—	—	27
K	—	—	3.8	10.5	1.5	3.5	2.5	—	21.8
	120	20	64	20	30	39.5	27	21.8	

Disposable income
in absolute value and as a percentage of the net national product at market prices

	Initial situation	New equilibrium	Change
Workers	50	38	— 12
Entrepreneurs	14	14	0
Pensioners	15	30	+ 15
Social security	6	5.5	— 0.5
State	15	12.5	— 2.5

221. *Hypothesis 1:* "Multipliers" system

Z_i	$\frac{dZ_i}{dV_R}$	Z_i	$\frac{dZ_i}{dV_R}$	Z_i	$\frac{dZ_i}{dV_R}$	Z_i	$\frac{dZ_i}{dV_R}$
L	0	C_N	— 0.72	S_N	— 0.08	P_N	+ 1
Q	0	C_U	0	S_U	0	P_U	0
		C_R	+ 0.95	S_R	+ 0.05	T_N	— 0.2
		C_S	+ 0.05	S_S	— 0.08	T_U	0
		C_F	0	S_F	— 0.17	T_I	0
W	0			S_A	0	M	0
Y	0	C	+ 0.28	S = I	— 0.28	X	0

222. *Hypothesis 2:* Passing on the burden of contributions to wages and salaries, with the nominal value added constant

(19.2) L	= 65	instead of	(19.0)
(24.1) P_N	= 0.10 L + 15	instead of	(24.0)
(33.1) V_R	= 20	instead of	(33.0)
(35.1) W—M	= 100	instead of	(20.0)
(36.2) S_F	= 0	instead of	(30.0)

	W	A	N	U	R	S	F	K	
W	—	20	43.92	0.09	28.5	2.25	9.87	15.37	120
A	20	—	—	—	—	—	—	—	20
N	65	—	—	—	—	14	—	—	79
U	0.5	—	—	—	—	—	—	—	0.5
R	—	—	—	—	—	20	10	—	30
S	19.5	—	21.5	—	—	—	3.98	—	44.98
F	15	—	8.7	0.15	—	—	—	—	23.85
K	—	—	4.88	0.26	1.5	8.73	0	—	15.37
	120	20	79	0.5	30	44.98	23.85	15.37	

Disposable income
in absolute value and as a percentage of the net national product at market prices

	Initial situation	New equilibrium	Change
Workers	50	48.8	— 1.2
Entrepreneurs	14	0.35	— 13.65
Pensioners	15	30	+ 15
Social security	6	10.98	+ 4.98
State	15	9.87	— 5.13

223. *Hypothesis 2:* "Multipliers" system

Z_i	$\frac{dZ_i}{dV_R}$	Z_i	$\frac{dZ_i}{dV_R}$	Z_i	$\frac{dZ_i}{dV_R}$	Z_i	$\frac{dZ_i}{dV_R}$
L	+ 1	C_N	— 0.072	S_N	— 0.008	P_N	+ 1.10
Q	— 1.3	C_U	— 0.227	S_U	— 0.683	P_U	+ 0.30
		C_R	+ 0.95	S_R	+ 0.05	T_N	— 0.02
		C_S	+ 0.067	S_S	+ 0.265	T_U	— 0.39
		C_F	— 0.009	S_F	— 0.333	T_I	0
W	0			S_A	0	M	0
Y	0	C	+ 0.709	S = I	— 0.709	X	0

224. Hypothesis 3: Passing on the increases in contributions to wages, with public consumption and investments constant

(19.2)	$L = 65$	instead of (19.0)
(24.1)	$P_N = 0.10\,L + 15$	instead of (24.0)
(33.1)	$V_R = 20$	instead of (33.0)
(36.3)	$C_F = 10$	instead of (30.0)
(37.3)	$I = 26$	instead of (20.0)

	W	A	N	U	R	S	F	K	
W	—	18.27	43.92	1.37	28.5	2.28	10	26	130.34
A	21.72	—	—	—	—	—	—	—	21.72
N	65	—	—	—	—	14	—	—	79
U	7.83	—	—	—	—	—	—	—	7.83
R	—	—	—	—	—	20	10	—	30
S	19.5	—	21.5	—	—	—	4.56	—	45.56
F	16.29	—	8.7	2.35	—	—	—	—	27.34
K	—	3.45	4.88	4.11	1.5	9.28	2.78	—	26
	130.34	21.72	79	7.83	30	45.56	27.34	26	

Disposable income
in absolute value and as a percentage of the net national product at market prices

	Initial situation	New equilibrium	Change	New equilibrium	Change
Workers	50	48.8	— 1.2	44.9	— 5.1
Entrepreneurs	14	5.48	— 8.52	5.0	— 9
Pensioners	15	30	+ 15	27.6	+ 12.6
Social security	6	11.56	+ 5.56	10.6	+ 4.6
State	15	12.78	— 2.22	11.8	— 3.2
	100	108.62	+ 8.62	100	0

225. Hypothesis 3: "Multipliers" system

Z_i	$\frac{dZ_i}{dV_R}$	Z_i	$\frac{dZ_i}{dV_R}$	Z_i	$\frac{dZ_i}{dV_R}$	Z_i	$\frac{dZ_i}{dV_R}$
L	+ 1	C_N	— 0.072	S_N	— 0.008	P_N	+ 1.10
Q	— 0.811	C_U	— 0.142	S_U	— 0.426	P_U	+ 0.30
		C_R	+ 0.95	S_R	+ 0.05	T_N	— 0.02
		C_S	+ 0.069	S_S	+ 0.302	T_U	— 0.242
		C_F	0	S_F	— 0.148	T_I	+ 0.086
W	+ 0.689			S_A	+ 0.23	M	+ 0.115
Y	+ 0.575	C	+ 0.805	S = I	0	X	— 0.115

The change in the net national product Y can be expressed by the formula:

$$\frac{dY}{dV_R} = \frac{C_R - C_N P_N (1 - t_N) - C_U (1 - t_U)(1 + P_U) + C_S [P_N (1 - ft_N) + (1 + P_U)(1 - ft_U)]}{\frac{1}{1 - m} + x - C_U (1 - t_U)(1 - t_i) - C_S f (t_U + t_i - t_U t_i)}$$

226. *Hypothesis 4:* Passing-on the whole of the increases in contributions to wages and prices

(19.2) $L = 65$ instead of (19.0)
(24.1) $P_N = 0.10\,L + 15$ instead of (24.0)
(33.1) $V_R = 20$ instead of (33.0)

	W	A	N	U	R	S	F	K	
W	—	15.41	43.92	3.5	28.5	2.33	12.62	41.25	147.53
A	24.59	—	—	—	—	—	—	—	24.59
N	65	—	—	—	—	14	—	—	79
U	20	—	—	—	—	—	—	—	20
R	—	—	—	—	—	20	10	—	30
S	19.5	—	21.5	—	—	—	5.52	—	46.52
F	18.44	—	8.7	6	—	—	—	—	33.14
K	—	9.18	4.88	10.5	1.5	10.19	5	—	41.25
	147.53	24.59	79	20	30	46.52	33.14	41.25	

Disposable income
in absolute value and as a percentage of the net national product at market prices

	Initial situation	New equilibrium	Change	New equilibrium	Change
Workers	50	48.8	— 1.2	39.7	— 10.3
Entrepreneurs	14	14	0	11.4	— 2.6
Pensioners	15	30	+ 15	24.4	+ 9.4
Social security	6	12.52	+ 6.52	10.2	+ 4.2
State	15	17.62	+ 2.62	14.3	— 0.7
	100	122.94	+ 22.94	100	**0**

227. *Hypothesis 4:* "Multipliers" system

Z_i	$\frac{dZ_i}{dV_R}$	Z_i	$\frac{dZ_i}{dV_R}$	Z_i	$\frac{dZ_i}{dV_R}$	Z_i	$\frac{dZ_i}{dV_R}$
L	+ 1	C_N	— 0.072	S_N	— 0.008	P_N	+ 1.10
Q	0	C_U	0	S_U	0	P_U	+ 0.30
		C_R	+ 0.95	S_R	+ 0.05	T_N	— 0.02
		C_S	+ 0.072	S_S	+ 0.362	T_U	0
		C_F	+ 0.175	S_F	0	T_I	+ 0.229
W	+ 1.835			S_A	+ 0.612	M	+ 0.306
Y	+ 1.529	C	+ 1.125	S = I	+ 1.016	X	— 0.306

228. *Hypothesis 5:* Capital formation by social security bodies

(24.1) $P_N = 0.10\,L + 15$ instead of (24.0)
(36.3) $C_F = 10$ instead of (30.0)
(37.3) $I = 26$ instead of (20.0)

	W	A	N	U	R	S	F	K	
W	—	21.61	34.2	2.30	14.25	1.95	10	26	110.31
A	18.38	—	—	—	—	—	—	—	18.38
N	50	—	—	—	—	14	—	—	64
U	13.14	—	—	—	—	—	—	—	13.14
R	—	—	—	—	—	5	10	—	15
S	15	—	20	—	—	—	3.95	—	38.95
F	13.79	—	6	3.94	—	—	—	—	23.73
K	—	− 3.23	3.8	6.94	0.75	18	−0.22	—	26
	110.31	18.38	64	13.14	15	38.95	23.73	26	

Disposable income
in absolute value and as a percentage of the net national product at market prices

	Initial situation	New equilibrium	Change	New equilibrium	Change
Workers	50	38	− 12	41.3	− 8.7
Entrepreneurs	14	9.2	− 4.8	10	− 4
Pensioners	15	15	0	16.3	+ 1.3
Social security	6	19.95	+ 13.95	21.7	+ 15.7
State	15	9.78	− 5.22	10.6	− 4.4
	100	91.93	− 8.07	100	0

229. *Hypothesis 5:* "Multipliers" system

Z_i	$\frac{dZ_i}{dP_N}$	Z_i	$\frac{dZ_i}{dP_N}$	Z_i	$\frac{dZ_i}{dP_N}$	Z_i	$\frac{dZ_i}{dP_N}$
L	0	C_N	− 0.72	S_N	− 0.08	P_N	+ 1
Q	− 0.457	C_U	− 0.08	S_U	− 0.237	P_U	0
		C_R	0	S_R	0	T_N	− 0.20
		C_S	+ 0.047	S_S	+ 0.88	T_U	− 0.137
		C_F	0	S_F	− 0.348	T_I	− 0.081
W	− 0.646			S_A	− 0.215	M	− 0.108
Y	− 0.538	C	− 0.753	S = I	0	X	− 0.107

The change in income can be expressed by the formula:

$$\frac{dY}{dP_N} = \frac{C_N(1 - t_N) - C_S(1 - ft_N)}{\frac{1}{1 - m} + x - C_U(1 - t_U)(1 - t_i) - C_S f(t_U + t_i - t_U t_i)}$$

230. Hypothesis 6: Redistribution of income when employment depends on profits, and under conditions of full employment

(19.2) $L = 65$ instead of (19.0)
(24.1) $P_N = 0.10\,L + 15$ instead of (24.0)
(33.1) $V_R = 20$ instead of (33.0)
(38.6) $W = 0.25(L + P_U + T_I)$ instead of (20.0)

	W	A	N	U	R	S	F	K	
W	—	14	43.92	4.55	28.5	2.35	15	47.68	156
A	26	—	—	—	—	—	—	—	26
N	65	—	—	—	—	14	—	—	79
U	26	—	—	—	—	—	—	—	26
R	—	—	—	—	—	20	10	—	30
S	19.5	—	21.5	—	—	—	6	—	47
F	19.5	—	8.7	7.8	—	—	—	—	36
K	—	12	4.88	13.65	1.5	10.65	5	—	47.68
	156	26	79	26	30	47	36	47.68	

Disposable income
in absolute value and as a percentage of the net national product at market prices

	Initial situation	New equilibrium	Change	New equilibrium	Change
Workers	50	48.8	— 1.2	37.5	— 12.5
Entrepreneurs	14	18.2	+ 4.2	14	0
Pensioners	15	30	+ 15	23.1	+ 8.1
Social security	6	13	+ 7	10	+ 4
State	15	20	+ 5	15.4	+ 0.4
	100	130	+ 30	100	0

231. Hypothesis 6: "Multipliers" system

Z_i	$\frac{dZ_i}{dV_R}$	Z_i	$\frac{dZ_i}{dV_R}$	Z_i	$\frac{dZ_i}{dV_R}$	Z_i	$\frac{dZ_i}{dV_R}$
L	+ 1	C_N	— 0.072	S_N	— 0.008	P_N	+ 1.10
Q	+ 0.4	C_U	+ 0.07	S_U	+ 0.21	P_U	+ 0.3
		C_R	+ 0.95	S_R	+ 0.05	T_N	— 0.02
		C_S	+ 0.073	S_S	+ 0.393	T_U	+ 0.12
		C_F	+ 0.333	S_F	0	T_I	+ 0.3
W	+ 2.4			S_A	+ 0.8	M	+ 0.4
Y	+ 2	C	+ 1.354	S = I	+ 1.445	X	— 0.4

232. *Hypothesis H_1:* Increased social security benefits without increased contributions, with the nominal national product constant.

(33.1) $V_R = 20$ instead of (33.0)
(35.1) $W - M = 100$ instead of (20.0)

	W	A	N	U	R	S	F	K	
W	—	20	45	3.5	28.5	1.25	10	11.75	120
A	20	—	—	—	—	—	—	—	20
N	50	—	—	—	—	14	—	—	64
U	20	—	—	—	—	—	—	—	20
R	—	—	—	—	—	20	10	—	30
S	15	—	5	—	—	—	5	—	25
F	15	—	9	6	—	—	—	—	30
K	—	—	5	10.5	1.5	— 10.25	5	—	11.75
	120	20	64	20	30	25	30	11.75	

Disposable income
in absolute value and as a percentage of the net national product at market prices

	Initial situation	New equilibrium	Change
Workers	50	50	0
Entrepreneurs	14	14	0
Pensioners	15	30	+ 15
Social security	6	— 9	— 15
State	15	15	0

233. *Hypothesis H_1:* "Multipliers" system

Z_i	$\frac{dZ_i}{dV_R}$	Z_i	$\frac{dZ_i}{dV_R}$	Z_i	$\frac{dZ_i}{dV_R}$	Z_i	$\frac{dZ_i}{dV_R}$
L	0	C_N	0	S_N	0	P_N	0
Q	0	C_U	0	S_U	0	P_U	0
		C_R	+ 0.95	S_R	+ 0.05	T_N	0
		C_S	0	S_S	— 1	T_U	0
		C_F	0	S_F	0	T_I	0
W	0			S_A	0	M	
Y	0	C	+ 0.95	S = I	— 0.95	X	0

234. Hypothesis H_2: Increased social security benefits without increased contributions, with public consumption and investments constant

(33.1) $V_R = 20$ instead of (33.0)
(36.3) $C_F = 10$ instead of (30.0)
(37.3) $I = 26$ instead of (20.0)

	W	A	N	U	R	S	F	K	
W	—	17.71	45	5.20	28.5	1.29	10	26	133.7
A	22.28	—	—	—	—	—	—	—	22.28
N	50	—	—	—	—	14	—	—	64
U	29.71	—	—	—	—	—	—	—	29.71
R	—	—	—	—	—	20	10	—	30
S	15	—	5	—	—	—	5.77	—	25.77
F	16.71	—	9	8.91	—	—	—	—	34.62
K	—	4.57	5	15.60	1.5	— 9.52	8.85	—	26
	133.7	22.28	64	29.71	30	25.77	34.62	26	

Disposable income
in absolute value and as a percentage of the net national product at market prices

	Initial situation	New equilibrium	Change	New equilibrium	Change
Workers	50	50	0	44.9	— 5.1
Entrepreneurs	14	20.8	+ 6.8	18.7	+ 4.7
Pensioners	15	30	+ 15	26.9	+ 11.9
Social security	6	— 8.23	— 14.23	— 7.4	— 13.4
State	15	18.85	+ 3.85	16.9	+ 1.9
	100	111.42	11.42	100	0

235. Hypothesis H_2: "Multipliers" system

Z_i	$\frac{dZ_i}{dV_R}$	Z_i	$\frac{dZ_i}{dV_R}$	Z_i	$\frac{dZ_i}{dV_R}$	Z_i	$\frac{dZ_i}{dV_R}$
L	0	C_N	0	S_N	0	P_N	0
Q	+ 0.647	C_U	+ 0.113	S_U	+ 0.34	P_U	0
		C_R	+ 0.95	S_R	+ 0.05	T_N	0
		C_S	+ 0.003	S_S	— 0.951	T_U	+ 0.194
		C_F	0	S_F	+ 0.257	T_I	+ 0.114
W	+ 0.913			S_A	+ 0.305	M	+ 0.152
Y	+ 0.701	C	+ 1.066	S = I	0	X	— 0.153

The change in income can be expressed by the formula:

$$\frac{dY}{dV_R} = \frac{C_R}{\frac{1}{1-m} + x - C_U(1-t_U)(1-t_i) - C_S f(t_U + t_i - t_U t_i)}$$

ANNEX II

Examination of an econometric model of the effects exerted by changes in social security in the Federal Republic of Germany on the formation, distribution and utilization of the national income

236. A first step towards an econometric check of at least some of the important behavioural functions of a model similar in principle to the circular-flow model developed in the present chapter was recently made in the Federal Republic of Germany by Dietrich Lüdeke in "Ein einfaches ökonometrisches Modell für die Einkommensumverteilung in der Bundesrepublik Deutschland" (A simple econometric model of income redistribution in the Federal Republic of Germany), Jahrbücher für Nationalökonomie und Statistik, Vol. 177, No. 5 (1965), pp. 410 *et seq.*

In our view, this model is very suitable as an approach to computation of the effects (studied in this chapter) of changes in social security on the income flow, and is worth improving to serve practical economic purposes. We shall therefore describe the basic features of this model together with its most important results, and endeavour to appraise its indicative value.

A - *Initial model*

237. This is a circular-flow model which in principle could be represented by the same matrix scheme as the one we have developed in our theoretical model.

All variables relate to the same period. Hence the model only affords a comparative static analysis of equilibrium conditions and not a full dynamic analysis of the process.

We considered it necessary to know many functions (consumption, investment, export and import, behaviour of the tax authorities, economic policy aims, etc.) in order to calculate the incidence of social security on the formation, utilization and distribution of the national product. Out of all these Lüdeke only determined by econometric procedures the consumption functions of five social categories. Consequently, the number of exogenous quantities, which are not explained but are simply regarded as given, is much higher in relation to the endogenous variables than would be desirable if the model were to be used for practical economic policy purposes.

238. It is always possible and, moreover, highly desirable, to amplify the model by econometrically evaluating other functions and by taking into consideration the current economic situation and economic policy within the framework of a systematic use of national accounts for short- and medium-term economic policy.

The model in question is purely nominal, and only changes in the nominal income and its distribution are analysed in it. Here too it would be desirable to amplify the model.

239. The variables and equations of the model

The model contains the following variables:

a) *Endogenous variables*

C_{Ar} = Consumption of wage-earners' households

C_{An} = Consumption of salaried employees' households

C_R = Consumption of pensioners' households

$C_{S'}$ = Consumption of self-employed persons' households whose disposable monthly income is less than DM 2 000

$C_{S''}$ = Consumption of self-employed persons' households whose disposable monthly income is DM 2 000 or more

Y^v_{Ar} = Disposable income of wage-earners' households

Y^v_{An} = Disposable income of salaried employees' households

Y^v_R = Disposable income of pensioners' households

$Y^v_{S'}$ = Disposable income of self-employed persons' households whose disposable monthly income is less than DM 2 000

$Y^v_{S''}$ = Disposable income of self-employed persons' households whose disposable monthly income is DM 2 000 or more

Y^F_{Ar} = Factor income of wage-earners' households

Y^F_{An} = Factor income of salaried employees' households

Y^F_R = Factor income of pensioners' households

$Y^F_{S'}$ = Factor income of self-employed persons' households whose disposable monthly income is less than DM 2 000

$Y^F_{S''}$ = Factor income of self-employed persons' households whose disposable monthly income is DM 2 000 or more

$Y^F_{K,St}$ = Factor income of joint stock companies with their own legal personality, including income of State enterprises

Y^F = Net national product at factor cost.

240. b) *Exogenous variables*

T_{Ar} = Direct taxes of wage-earners' households

T_{An} = Direct taxes of salaried employees' households

$T_{S'}$ = Direct taxes of self-employed persons' households whose disposable monthly income is less than DM 2 000

$T_{S''}$ = Direct taxes of self-employed persons' households whose disposable monthly income is DM 2 000 or more

T_R = Direct taxes of pensioners' households

Z_{Ar} = Social security contributions of wage-earners' households

Z_{An} = Social security contributions of salaried employees' households

Z_R = Social security contributions of pensioners' households

$Z_{S'}$ = Social security contributions of self-employed persons' households whose disposable monthly income is less than DM 2 000

$Z_{S''}$ = Social security contributions of self-employed persons' households whose disposable monthly income is DM 2 000 or more

Tr_{Ar} = Income from public sources of wage-earners' households

Tr_{An} = Income from public sources of salaried employees' households

Tr_R = Income from public sources of pensioners' households

$Tr_{S'}$ = Income from public sources of self-employed persons' households whose disposable monthly income is less than DM 2,000

$Tr_{S''}$ = Income from public sources of self-employed persons' households whose disposable monthly income is DM 2,000 or more

G = Public consumption + aggregate gross investments — indirect taxes + subsidies + balance on current account.

241. a) *Equations of the circular-flow model*

Consumption functions

(1) $C_{Ar} = 4.29 + 0.88\ Y^v_{Ar} + u_{Ar}$

(2) $C_{An} = 6.37 + 0.47\ Y^v_{An} + u_{An}$

(3) $C_R = 1.63 + 0.90\ Y^v_R + u_R$

(4) $C_{S'} = 4.10 + 0.72\ Y^v_{S'} + u_{S'}$

(5) $C_{S''} = b + 0.45\ Y^v_{S''} + u_{S''}$

The parameters of the consumption functions of the five social categories for the year 1960 have been established from cross sections by the method of least squares. However, the parameters of the consumption function of self-employed households with a disposable monthly income of DM 2,000 or more could not be determined by this method, for lack of sufficiently detailed statistics. Consequently, parameter 0.45 of function (5) had to be determined from the average consumption ratio for this category of household, the only quantity that could be evaluated statistically.

242. According to the author, the calculations satisfy the quality criteria of consistency and reliability which all statistical evaluations of parameters must satisfy.

Factors u_{Ar}, u_{An}, u_R, u_S, and u_S'' are random variables. Their absolute value is inconsiderable for the effects of variations of the exogenous variables. They are therefore left out of account in the reduced model (see below).

For the consumption functions the very simple hypothesis was adopted that consumption over a period was linearly dependent on disposable income over that period. The hypothesis of linear dependence is debatable, but it is perfectly suitable for purposes of practical economic policy.

243. Factor income functions

(6) $Y^F_{Ar} = 0.3025\ Y^F$

(7) $Y^F_{An} = 0.2492\ Y^F$

(8) $Y^F_R = 0.0615\ Y^F$

(9) $Y^F_{S'} = 0.1587\ Y^F$

(10) $Y^F_{S''} = 0.1387\ Y^F$

(11) $Y^F_{K,St} = 0.0894\ Y^F$

In the model the factor incomes of the five different categories of households, as well as the factor incomes of joint stock companies with their own legal personality and of the State, are thus considered as constant components of the net national product at factor cost. (1)

244. Unfortunately this excludes, *a priori* and arbitrarily, a change in the distribution of factor incomes as a result of the measures of economic policy analysed, and only allows for the possibility of incidence on the distribution of disposable income.

(1) The numerical values of the parameters correspond to the shares of the individual categories in the net national product at factor cost of the Federal Republic in 1960.

245. This limiting condition is one of the most regrettable shortcomings of the model, since a large number of the repercussion processes which we considered as probable when theoretically analysing them thus escape analysis. In the context of systematic exploitation of national accounts for purposes of economic policy the over-simple functions (6) to (11) should be replaced by the income functions which best correspond with the current conditions, in accordance with the views developed in our theoretical considerations on models.

Defining equations

$$(12)\ Y^{v}_{Ar} = Y^{F}_{Ar} - T_{Ar} - Z_{Ar} + Tr_{Ar}$$
$$(13)\ Y^{v}_{An} = Y^{F}_{An} - T_{An} - Z_{An} + Tr_{An}$$
$$(14)\ Y^{v}_{R} = Y^{F}_{R} - T_{R} - Z_{R} + Tr_{R}$$
$$(15)\ Y^{v}_{S'} = Y^{F}_{S'} - T_{S'} - Z_{S'} + Tr_{S'}$$
$$(16)\ Y^{v}_{S''} = Y^{F}_{S''} - T_{S''} - Z_{S''} + Tr_{S''}$$
$$(17)\ Y^{F} = C_{Ar} + C_{An} + C_{R} + C_{S'} + C_{S''} + G$$

B - *Reduced form of the model*

246. The 17 linearly independent equations make it possible to determine the values of the endogenous variables for given values of the exogenous variables.

To analyse the effects of economic changes of exogenous variables on endogenous variables, Lüdeke has converted the system of equations (1) to (17) into its reduced form, i.e. by resolving the model into its endogenous variables.

247. This reduced form shows (1) that a change of an exogenous quantity by a given amount will cause each endogenous variable to change by a given multiple of this amount. These "multipliers" of change of exogenous quantities (partial differential quotients of the equations of the reduced model) are given in Table 30.

In this table, each figure shows the ratio of the induced change of endogenous variables, given on the left of the same row, to the change of exogenous variables, given at the head of the same column, which induced it.

248. For example the figure—0.69, appearing in row 13 of column 6, corresponds to the relation $\Delta Y^{v}_{An} : \Delta Z_{Ar}$ and shows that, if the social security contributions of wage-earners' households increased by DM 1 000 million, the disposable income of salaried employees' households would decrease by DM 690 million because of the resulting contraction of the national income.

(1) For further details see D. Lüdeke, *op. cit.*, p. 422 *et seq.*

C - *Incidence of general changes in direct taxes, social contributions and transfer incomes*

249. From Table 31 it is possible to compute directly the effects in the model of changes in the burden on each category of direct taxes and social contributions, as well as the extent to which each category profits from social benefits. In real economic conditions, any increase in taxation and contributions for social security will, of course, affect all the categories simultaneously, and all the categories will profit from increases in social benefits to a greater or lesser extent.

Thus, if it is desired to evaluate the effects of a general change in taxes, social contributions and transfer incomes, supplementary hypotheses will have to be made on the share of the different categories in the increase or reduction in charges and benefits.

250. Lüdeke also carries out model calculations for this problem of general changes in taxes, contributions and benefits, taking as a hypothesis that the share of the various categories in the various charges and transfer incomes remains constant. Accordingly, his model reveals effects on the disposable incomes of the social categories as shown in Table 31.

Similarly, it is also possible to calculate the effects of comparable or different changes for factor income or the consumption of the different categories and of the economy as a whole (cf. Table 31). The figures in the table lead to the conclusion that the disposable incomes of the households of wage-earners, pensioners, salaried employees, and self-employed persons with a disposable monthly income of less than DM 2,000, are distinctly less burdened by a general increase in direct taxes by DM 1,000 million than by a general increase in social security contributions, whereas exactly the reverse applies for self-employed persons with high incomes.

251. The table also shows that if the increases in incomes from public sources are financed by a rise in direct taxes, total nominal income and consumption increase appreciably more (as a result of income transfers from households whose marginal consumption ratio is comparatively low to households whose marginal consumption ratio is comparatively high) than it does if this financing is covered by social security contributions (because, in this case, the marginal consumption ratio of households profiting from the increases in benefits is not much higher than that of the households whose charges have increased).

252. It should be pointed out that, through the introduction of the various passing-on measures of our theo-

TABLE 30

Multiplier effects of changes in direct taxes, social security contributions, income from public sources and autonomous expenditure

		ΔT_{Ar} 1	ΔT_{An} 2	ΔT_{R} 3	$\Delta T_{S'}$ 4	$\Delta T_{S''}$ 5	ΔZ_{Ar} 6	ΔZ_{An} 7	ΔZ_{R} 8	$\Delta Z_{S'}$ 9	$\Delta Z_{S''}$ 10	ΔTr_{Ar} 11	ΔTr_{An} 12	ΔTr_{R} 13	$\Delta Tr_{S'}$ 14	$\Delta Tr_{S''}$ 15	ΔG 16
1	ΔC_{AR}	— 1.62	— 0.62	— 0.75	— 0.60	— 0.38	— 1.62	— 0.62	— 0.75	— 0.60	— 0.38	+ 1.62	+ 0.62	+ 0.75	+ 0.60	+ 0.38	+ 0.84
2	ΔC_{An}	— 0.51	— 1.17	— 0.52	— 0.42	— 0.26	— 0.51	— 1.17	— 0.52	— 0.42	— 0.26	+ 0.51	+ 1.17	+ 0.52	+ 0.42	+ 0.26	+ 0.58
3	ΔC_{R}	— 0.15	— 0.13	— 1.06	— 0.13	— 0.08	— 0.15	— 0.13	— 1.06	— 0.13	— 0.08	+ 0.15	+ 0.13	+ 1.06	+ 0.13	+ 0.08	+ 0.17
4	$\Delta C_{S'}$	— 0.32	— 0.27	— 0.32	— 0.98	— 0.16	— 0.32	— 0.27	— 0.32	— 0.98	— 0.16	+ 0.32	+ 0.27	+ 0.32	+ 0.98	+ 0.16	+ 0.36
5	$\Delta C_{S''}$	— 0.17	— 0.15	— 0.18	— 0.14	— 0.54	— 0.17	— 0.15	— 0.18	— 0.14	— 0.54	+ 0.17	+ 0.15	+ 0.18	+ 0.14	+ 0.54	+ 0.20
6	ΔY^{F}_{Ar}	— 0.84	— 0.71	— 0.86	— 0.69	— 0.43	— 0.84	— 0.71	— 0.86	— 0.69	— 0.43	+ 0.84	+ 0.71	+ 0.86	+ 0.69	+ 0.43	+ 0.95
7	ΔY^{F}_{An}	— 0.69	— 0.58	— 0.71	— 0.57	— 0.35	— 0.69	— 0.58	— 0.71	— 0.57	— 0.35	+ 0.69	+ 0.58	+ 0.71	+ 0.57	+ 0.35	+ 0.79
8	ΔY^{F}_{R}	— 0.17	— 0.14	— 0.17	— 0.14	— 0.09	— 0.17	— 0.14	— 0.17	— 0.14	— 0.09	+ 0.17	+ 0.14	+ 0.17	+ 0.14	+ 0.09	+ 0.19
9	$\Delta Y^{F}_{S'}$	— 0.44	— 0.37	— 0.45	— 0.36	— 0.23	— 0.44	— 0.37	— 0.45	— 0.36	— 0.23	+ 0.44	+ 0.37	+ 0.45	+ 0.36	+ 0.23	+ 0.50
10	$\Delta Y^{F}_{S''}$	— 0.38	— 0.32	— 0.39	— 0.31	— 0.20	— 0.38	— 0.32	— 0.39	— 0.31	— 0.20	+ 0.38	+ 0.32	+ 0.39	+ 0.31	+ 0.20	+ 0.44
11	ΔY^{F}_{KSi}	— 0.25	— 0.21	— 0.25	— 0.20	— 0.13	— 0.25	— 0.21	— 0.25	— 0.20	— 0.13	+ 0.25	+ 0.21	+ 0.25	+ 0.20	+ 0.13	+ 0.28
12	ΔY^{v}_{Ar}	— 1.84	— 0.71	— 0.86	— 0.69	— 0.43	— 1.84	— 0.71	— 0.86	— 0.69	— 0.43	+ 1.84	+ 0.71	+ 0.86	+ 0.69	+ 0.43	+ 0.95
13	ΔY^{v}_{An}	— 0.69	— 1.58	— 0.71	— 0.57	— 0.35	— 0.69	— 1.58	— 0.71	— 0.57	— 0.35	+ 0.69	+ 1.58	+ 0.71	+ 0.57	+ 0.35	+ 0.79
14	ΔY^{v}_{R}	— 0.17	— 0.14	— 1.17	— 0.14	— 0.09	— 0.17	— 0.14	— 1.17	— 0.14	— 0.09	+ 0.17	+ 0.14	+ 1.17	+ 0.14	+ 0.09	+ 0.19
15	$\Delta Y^{v}_{S'}$	— 0.44	— 0.37	— 0.45	— 1.36	— 0.23	— 0.44	— 0.37	— 0.45	— 1.36	— 0.23	+ 0.44	+ 0.37	+ 0.45	+ 1.36	+ 0.23	+ 0.50
16	$\Delta Y^{v}_{S''}$	— 0.38	— 0.32	— 0.39	— 0.31	— 1.20	— 0.38	— 0.32	— 0.39	— 0.31	— 1.20	+ 0.38	— 0.32	+ 0.39	+ 0.31	+ 1.20	+ 0.44
17	ΔY_{F}	— 2.77	— 2.33	— 2.84	— 2.27	— 1.42	— 2.77	— 2.33	— 2.84	— 2.27	— 1.42	+ 2.77	+ 2.33	+ 2.84	+ 2.27	+ 1.42	+ 3.15

TABLE 31

Change in disposable income brought about by a general increase in direct taxes, social charges and transfer income

	Changes in the disposable income (in DM '000 million) of households of					Total	Change in the national income and in consumption (in DM '000 million)
	Wage-earners	Salaried employees	Pensioners	Self-employed persons whose disposable monthly income is			
				less than DM 2,000	DM 2,000 or more		
The changes are the result of an increase by DM 1,000 million							
1. Direct taxes	— 0.58	— 0.50	— 0.12	— 0.34	— 0.43	— 1.97	— 1.44
2. Social security contributions	— 1.29	— 0.98	— 0.23	— 0.47	— 0.38	— 3.35	— 2.57
3. Transfer income	+ 1.03	+ 0.77	+ 0.83	+ 0.47	+ 0.39	+ 3.49	+ 2.76
4. Direct taxes and transfer income	+ 0.45	+ 0.27	+ 0.71	+ 0.13	— 0.04	+ 1.52	+ 1.32
5. Social charges and transfer income	— 0.26	— 0.21	+ 0.60	+ 0.00	+ 0.1	+ 0.14	+ 0.19

retical model into Lüdeke's econometric model, the effects of the various conceivable processes of repercussion must become easily quantifiable.

The practical utility of such model calculations for economic policy is obvious. However, the conditions differing from reality on which the model is based should always be borne in mind when applying it.

253. Lüdeke's model represents a first step for the Federal Republic towards econometric verification of flow models of the kind which we considered necessary for determination of redistribution and other effects exerted on macro-economic circuits by social policy measures in the field of social security. It is desirable to increase the usefulness of such models by introducing into them supplementary functions and functions which approximate more closely to reality. Lüdeke is fully aware of the defects in his model which have been mentioned, and must not be held responsible for them. He rightly says that the statistical material required for construction of a satisfactory model is not yet available, and that consequently any model analysis on a larger scale, and closer to real conditions, must necessarily be postponed to a later date. (1)

(1) Lüdeke, *op. cit.*, p. 415.

CHAPTER IV

Effects of social security on consumption

I - General considerations

254. The aim of social security is to provide financial aid or certain goods and services so that those who are temporarily or permanently unable to earn an income, or have exceptional expenses to meet, may continue to support themselves.

These transfers of income resulting from social security lead to a redistribution which naturally influences consumption, given that the personal distribution of disposable incomes is the principal factor determining the volume and structure of consumption. However, inasmuch as social security benefits are linked to the consumption of certain goods and services, such as the right to medical care, social security has a direct influence on consumption, for the way in which social security works in this field means that price has little if any influence on the consumption of these goods and services.

255. The links between the income distribution and consumption, in which the latter constitutes a derived value, raises the question whether it would be interesting to study the incidence of social security on consumption, using methods which make it possible to determine its influence on the distribution of incomes. In this connection, it will be remembered that the redistribution of incomes resulting from social security has been studied from two different angles in the last two chapters. Chapter II examines how far the effective distribution of incomes entailed by operation of the social security system differs from the distribution produced by the differences in factor incomes. This is basically a question of *a posteriori* research; the possible passing-on of social security burdens is not considered. This aspect is analysed in Chapter III, where it is demonstrated that the ultimate effect of any proposed redistribution of income depends on the economic and political situation. An attempt was also made to determine how far each of these methods constitutes a useful starting point for an analysis of the problems studied in this Chapter.

256. With the method adopted in Chapter II, a study can be made of the modifications brought about by the personal distribution of factor incomes under the influence of social security. An attempt was then made to see whether the influence exerted by social security on the volume and pattern of consumption can be quantified by determining the volume and structure imparted to consumption, first by a distribution of incomes corresponding to factor incomes, and then by the distribution of incomes entailed when the transfers of income brought about by operation of the social security system are taken into account. In order to do this it would be necessary to use consumption functions or statistics on budgets which give a sufficiently detailed picture of the volume and structure of consumption at different income levels. With this method it does not seem possible to quantify the incidence of social security on consumption.

257. Factor incomes constitute the starting point for an analysis of redistribution of income. But it is inadmissible to calculate the volume and pattern of consumption prior to the redistribution of incomes brought about by social security by applying to factor incomes the rates of consumption or data obtained from statistics relating to various income brackets, for the rates of consumption and the results of investigations into budgets are empirical data based on a situation where social security plays a part. Any influence exerted by social security on consumption is therefore already reflected in these data. The above-mentioned method could only be applied if the households financing social security through contributions belonged to income groups other than those that draw benefits under the system.

It is evident that this is not in fact the case, and that all income groups contribute towards and receive benefits from social security, even though contributions and benefits will vary.

258. This objection may also be put in another way. In a society without social security, the needs normally covered by social security will be provided for in some other manner, and perhaps less fully. Social security has, after all, been devised in great part by the legislator, since experience has shown that those involved either cannot or will not, if left to themselves, arrange for sufficient cover. Even in the absence of a social security system in the strict sense, this does not prevent part of an income being used to provide for times when no "factor income" can be obtained. Where social security does not exist, this should be done in one of the following ways or by a combination of these ways.

259. a) By households saving a part of their income in order to have a capital sum to which they can turn should the normal source of income cease, or if exceptional expenses such as sickness have to be met.

This would mean that everyone ought to have sufficient funds to meet the financial consequences of the relevant emergencies. If everyone were to do this, the rate of savings would be very high in the beginning, and continue high until the amount considered to be necessary had been built up. At this stage, possible withdrawals would cause the level to drop, and this could only be compensated by renewed savings.

Clearly it is quite unrealistic to suppose that everyone will be able to save enough to cope with the loss of their normal source of income. The very nature of these risks precludes individual savings as an appropriate measure in this respect, since it is impossible to forecast when the risk will become reality at the level of the individual. Consequently, in a society without social security other measures to safeguard against such risks must be sought, parallel to individual savings.

260. b) One of these measures consists in the individual's taking out private insurance policies against such risks as loss of income and exceptional expenses. In this case, insurance premiums will replace individual savings. Since insurance is based on average risk and, in order to fulfil their role, individual savings should take into account maximum risk, the appropriation of disposable income might be less. Where the insurance policies cover short-term risks, they will only give rise—via the insurance companies—to transfers of income, and no savings will result: but if they deal with long-term benefits (e.g. old-age pensions), savings will result. These, however, may average less per person, since the charges are based on average risk. Even so, the total volume of savings could be increased if more persons were to safeguard themselves against certain risks by means of private insurance.

A coherent system cannot, however, be obtained in this manner. Some risks cannot be covered at all, or only very imperfectly, by voluntary insurance. In this connection, family allowances and insurances against loss of income owing to unemployment can be mentioned. Furthermore, not everyone who is exposed to these risks will guard against them by taking out an insurance policy.

261. c) On the reasonable assumption that, even in an economy without social security in the strict sense it will be recognized that society has a duty to give financial aid to those in need, considerable amounts of funds will be required from public organizations to cover risks of loss of income or exceptional expenses, owing to the inadequacy of the measures quoted under (*a*) and (*b*) to cope with such risks. The level of taxation will be influenced by this and, in consequence, the level of disposal income after deduction of taxes.

It may be concluded that, in the above-mentioned case, a part of social security will be achieved, though only in the form of public assistance. However, this part has not been taken into consideration in the present study. A second conclusion could be that, in a society without a formal system of social security, people will try to safeguard themselves against the risks covered by social security through individual voluntary savings or by taking out private insurance policies, and could call on public assistance in so far as they fail, or only partially succeed, in doing this.

262. Naturally, such a system will influence possible consumption as much as a social security system. However, in all probability transfers of income or savings will be divided differently among the various social groups and income classes, but lack of firm data makes it impossible to formulate a justified hypothesis concerning this division and its influence on the volume and pattern of consumption. It is for these reasons that no quantitative approach to the consequences of social security for the volume and pattern of consumption can be made by applying a method like the analysis of the redistribution of incomes carried out in Chapter II.

263. No such difficulties arise in connection with the method followed in Chapter III concerning the problems of the repercussions of social costs. The object of this method is to indicate what happens, in a known situation, when modifications are made to relevant macro-economic elements such as, in the present case, social security.

This method is more limited, since it can only show the effects of a change in the social security system. However, this is sufficient for practical policy, because a correct idea of the economic repercussions of certain modifications to social security which are under consideration may help to determine which decision should finally be taken. But the method also has its limitations, which should not be ignored in the evaluation of results. Thus it was shown in Chapter III that the effect of a certain change in social security policy depends to a large extent on the economic situation and the possibilities that it offers of passing on the increase in costs which may accompany the change. If this passing-on process exerts an unequal influence on the incomes of various groups, the rates of consumption could be modified. Generally speaking, the effects of limited changes in the social security system will not be so great as to invalidate the hypothesis that the rates of consumption remain unchanged.

264. In addition, it should be borne in mind that a change in the social security system can influence the pattern of expenditure independently of possible transfers of additional costs. It is not always possible to forecast the direction, and even less the degree, of these modifications to the pattern of expenditure. Thus, in the Netherlands a considerable extension of the State old-age pension system in 1957 did not, as some people expected, adversely affect the complementary old-age pensions but stimulated them, as the increase in the business of the life-assurance companies indicates.

265. The same was experienced in the Federal Republic of Germany when radical changes were made to the "Gesetzliche Rentenversicherung" (statutory old-age and invalidity insurance) in 1957. These measures not only raised the level of pensions considerably, but also that of contributions. It was feared that the result would be to weaken the private households' propensity to save, but, on the contrary, the percentage of family income put aside increased slightly. Predictions that the tendency to conclude life assurance policies would decline were likewise not fulfilled. On the contrary, the number of life assurance policies and the level of the amounts insured continued to rise after the pension reform ("Rentenreform").

In the United States, an improvement in pension arrangements was seen to have the same effects on the propensity to save. To explain this, it was argued that the pension arrangements made by the law and by enterprises together result in an income from pension which is so close to that deemed advisable as to make such an income attainable with relatively little personal effort, in contrast to the situation in the past. This therefore meant an increase in personal savings.

266. The following conclusions may be drawn from the above:

a) Marginal changes in social security are unlikely to affect the proportion of income devoted to consumption. In order to quantify such limited changes to a certain extent it is necessary to know the consumption functions for several socio-economic categories which are important in this context. Annex II to Chapter III gives some examples of research results obtained in the Federal Republic of Germany. It is to be hoped that more attention will be given to this possibility of measuring the consequences of changes in social security provisions, notably in order to improve the statistical data required to calculate consumption functions.

b) In applying these consumption functions to planned changes in the social security system account must also be taken of the possibilities of passing on charges, which may modify not only the total income but also its distribution among the various groups. If a sound estimate is to be made of the consequences of changes in the system, the consumption functions will have to be integrated in a complete circular-flow model that takes into consideration the economic situation and the economic policy pursued. In this connection, reference should be made to what is said in Chapter III concerning the problems of passing on charges.

267. The above prompts the conclusion that a quantitative estimate of the influence of social security on consumption can only be made when it is a question of changes in the social security system in an economy where the significant economic values and their mutual connections are known. In addition, certain hypotheses then have to be formulated regarding the economic situation at the time of the changes and regarding the policy to be followed by the authorities. Obviously, no such estimate can be made in a study of this kind. Accordingly, a more limited problem was selected for treatment in the present chapter, namely: to what extent will differences in the content of social security lead to differences in its influence on consumption? Owing to lack of the necessary data, all we can do is distinguish probabilities. It is not possible to ascertain whether and to what extent these influences are demonstrable since that partly depends on the factors previously mentioned, such as the economic situation and the policy of the public authorities.

Production of life assurance companies in the Netherlands

(Total production in millions of guilders) (1)

	1955	1957	1959	1961	1962	1963	1964
Absolute figures	3 657	4 457	5 103	6 779	7 554	8 357	10 492
(1955 = 100)	100	122	140	185	207	229	287
National income at net market prices (1955 = 100)	100	116	126	148	158	173	203

(1) By production is meant the gross increase of amounts insured under both individual and collective insurance during the year concerned. Pension insurances are capitalized by multiplying by 10.

The differences in content of social security which have received most attention are the differences between levels of entitlement, categories of beneficiaries, and methods of financing. As regards methods of financing, the differences may be considered under three heads: differences between financing by contributions and by the public authorities; differences between the systems of contributions; and finally, differences between financing by the adjustable-contribution system and by the capital cover system.

268. As regards the problems tackled in this Chapter, the difference according to the risk covered is only of secondary importance. A distinction can be made between:

(*a*) Cash benefits to replace income.
These are benefits paid when the normal source of income—generally earned income—ceases. A difference is made according to the duration of benefits, since benefits paid out over a relatively short period are likely to have less influence on the pattern of consumption than benefits paid out over a long period;

(*b*) Cash benefits placed freely at the disposal of the beneficiary in order to meet particular needs. This category includes, notably, family allowances;

(*c*) Entitlement to certain goods and services, or to the reimbursement of expenses shown to have been for the consumption of goods and services. Most of these arise from entitlement to medical care.

II - Short-term cash benefits in the case of loss of income

269. Benefits in cash are granted during a short period when the worker is out of action owing to sickness, accident, relatively short-term unemployment or maternity.

The influence of these benefits on the volume of consumption primarily depends on the change in disposable income. In general, the gross benefit will be less than the earned income. However, the actual reduction of disposable income may be less if the amount of direct taxes and social charges deducted from the benefit is less. Accordingly, assuming that the benefits will be lower than the earned income, there ase three factors which determine the amount of the reduction of disposable income, namely, the benefit level in relation to the earned income and the possible reduction of direct taxes and of social charges. It is obvious that the reduction of disposable income depends largely on the content of social security and on the structure of the tax system. The following two extreme cases may be compared:

270. *a*) Benefits independent of income; social security financed by fixed contributions or by indirect taxes; tax system based essentially on indirect taxation. In this case, the disposable income of those with the lowest earnings will be reduced less, both in real value and percentagewise. The reduction will be greatest for those in the highest income group entitled to benefits.

b) Benefits representing a percentage of earned income; social security financed by contributions in proportion to income; tax system based essentially on direct taxation. In this case, it is more a question of a reduction by the same percentage of disposable income for the lower and higher income groups, with a tendency towards a smaller reduction for the higher income groups if a high progressive income tax is levied.

271. Taking these variants into consideration, the disposable income of beneficiaries will be determined mainly by the benefit level's relation to earned income. The disposable income is the principal factor determining the volume of consumption. It seems reasonable to assume that, in general, the changes in disposable income will lead to changes in the volume of consumption, albeit not proportionately, since the rate of saving also depends on the volume of disposable income.

272. However, it is highly possible that, for the group of beneficiaries in question, the volume of consumption for a given disposable income will deviate from the relation which generally exists between consumption and income. For this group, benefits constitute a means of avoiding a temporary loss of income. As a result, the beneficiaries will be more inclined to maintain their volume of consumption at the level which they consider normal. They will even be forced to do this, to a certain extent, because a certain number of consumer expenses are probably inelastic in the short term and cannot be reduced, or only to a limited degree (e.g. rent and commitments arising from hire-purchase contracts). When the disposable income diminishes, however, this level of consumption can only be maintained by drawing on savings. This may take the form of cessation or reduction of savings from current income, or by taking up savings from earlier periods. But such dissavings or reductions in savings are only possible when the persons in question do normally save from income. Since the possibility of saving depends partly on the level of real income it may be concluded that, besides the factors already mentioned (level of benefits, reduction of social charges and of direct taxes), the general level of prosperity may influence the volume of consumption in the group of beneficiaries concerned during the period in which benefit is received.

273. Financing of the above-mentioned benefits naturally brings about, in one form or another, a limitation of real disposable income. With respect to charges, in particular, it is difficult to determine the extent to which the contributors (in the formal legal sense) will succeed in passing the charges on to other groups. Chapter III should be referred to for general discussion of such problems. Some specific consequences may also arise for consumption from the terms of social security. If only one particular group of the population was entitled to benefits, and if financing took place from public funds, part of the charges would be borne in any case by population groups which could never claim benefits, irrespective of the degree to which contributions were passed on. If such a method of financing were ever to be applied, notably to provide social security for a low-income group, without, however, the authorities' wishing or being able to levy contributions from this group, it is probable that the other groups bearing the charges will have little success in passing the charges on to the group which is entitled to benefits. Consequently, these groups will be obliged directly to bear part of the charges, and still will reduce either their consumption or their savings.

274. Moreover, as far as the passing-on of charges is concerned, it appears important to mention that, when it succeeds, the result is a real income higher than that obtained without it. In so far as the benefits represent a percentage of income, the passing-on will result in a relatively high real benefit, which means that it has a cumulative effect, in a manner of speaking.

275. Setting aside the possibility of passing on charges, it can be said that social security will influence the volume of consumption when the consumption ratio of those who benefit from transfers of income differs from the consumption ratio of those who transfer a part of their income. This implies that it is difficult to decide in the abstract on the influence of social security on consumption. The concrete terms of the system will determine whether consumption will be influenced and, if it is, to what extent. The difference in consumption by those who finance the costs will be the most difficult to ascertain in the case of that part of the costs financed by the State. An exact knowledge of the fiscal pressure exerted on the various socio-economic groups will be required here. Unless the insurance branch concerned involves the entire population, it is certain that, with this method of financing, part of the charges will be borne by groups which are not entitled to insurance.

276. If financing is by contributions, several cases may be distinguished;

a) Insurance is limited to relatively low income groups whose consumption ratio is very similar and where both contributions and benefits form a percentage of income. According to this hypothesis, voluntary savings will be relatively low, while savings to mitigate the loss of income now covered by insurance are no longer necessary, or only necessary to a lesser extent. It appears unlikely that the total consumption of the insured group would be greatly influenced.

b) Insurance does not establish any income limit for compulsory insurance, but does establish a ceiling for contributions and benefits, both of which represent a percentage of wage or salary.

277. Although higher-paid persons also participate in insurance under this hypothesis, the results will hardly differ from those mentioned for *a*). Only where it must be supposed that, the higher the income, the less risk is involved, would the transfers of income from people with higher incomes to those with lower incomes show a credit balance, perhaps accompanied by a reduction in saving by the first group.

278. As a result of the fixed ceiling for benefits the coverage of higher-paid persons will, according to this hypothesis, be less than that of those whose income is below the maximum benefit level. The difference is not covered, so in this respect they are in the same situation as they would be in a society without formal social security. The supplementary means available for obtaining security are indicated in sec. 269 *et seq.* However, it is not impossible that the extent to which these means are used will be influenced by the partial coverage offered by social security. If the risk of loss of income is not thought to be great, and if relatively high sums are demanded to cover it, either by voluntary insurance or by voluntary savings, there is a great chance that the higher-paid worker will make no attempt to cover the difference between his income and the benefit ceiling. Here the saving ratio for savings not specifically earmarked is also involved. If this ratio is relatively high, there will be less reason to assure specific coverage for a particular risk, either by savings for the purpose or by voluntary insurance. The reaction may be otherwise when the risk is considered to be quite great and the cost of covering the difference, by voluntary insurance for instance, is relatively little. It is possible that coverage of the difference between income and benefit ceiling will then be on a large scale, because compulsory insurance already covers so large a part that the rest can be financially covered without the normal pattern of consumption needing to become substantially modified. This reaction is perhaps to be expected when real income increases over a long period but when the level of prosperity at which these risks can be covered by the volume of voluntary savings has yet to be reached. If such is the reaction, it is likely to result in a slight increase of expenditure on consumption by the group comprising those

who bear the charges and have an income higher than the fixed ceiling for benefits, since there will be no savings to cover the risk in the group as a whole.

279. *c*) No income limit is laid down for compulsory insurance. Contributions are a percentage of income, and the amount of benefit does not (partly) depend on the earned income obtained previously.

In the case of insurance of this kind it may be assumed that, even when the charges are entirely reflected in prices, the percentage reduction of disposable income (up to the maximum for which a contribution is due) will be almost equal for all income groups. For the lower income groups, this will probably lead to a corresponding reduction in consumption; for the higher income groups, a certain reduction in savings is not impossible. Finally, the total consumption of those supporting the charges may increase.

Since benefits are not related to income, cover under this type of insurance will also be unfavourable for the higher income groups. The way in which they cover their additional risk, and the extent to which they cover it, are determined by the same factors as are mentioned under *b*).

III - Long-term cash benefits in the case of loss of income

280. Loss of income owing to sickness, accident, invalidity or unemployment may be of lengthy duration, and this will usually entail relatively long-term benefits. The same applies to old-age pensions and to those for widows and orphans.

The consumption level of beneficiaries will be determined by the same factors as are mentioned under II in connection with short-term benefits in cash. In the case of long-term benefits, however, the possibility of maintaining the original level of consumption by dissaving or by a temporary reduction in savings will be greatly reduced. It is therefore to be expected that the level of consumption of this group will be about the same as that of employed persons with the same disposable income. It is even possible that the level of consumption of beneficiaries will be higher than that of employed persons with the same disposable income, especially if the employed persons save part of their income. The beneficiaries will be more inclined to try to maintain their original level of consumption. In other words, their propensity to save will perhaps be less than that of employed persons with the same income.

281. In the case of long-term benefits, the level of consumption of beneficiaries may also partly depend on a factor which is of little or no importance with regard to short-term benefits, i.e., currency fluctuation. This will notably be the case when beneficiaries can claim a benefit with a fixed nominal value. For real buying power will then vary in inverse proportion to the changes in the value of money. To avoid this, the real buying power of benefits could be guaranteed by linking the benefit level to an index that could be considered as providing an acceptable criterion for the evolution of the price levels which are important for those entitled to benefits. This will usually be a cost of living index.

282. If benefits are adapted according to this criterion, the level of consumption of beneficiaries will remain more or less constant, at any rate in so far as the cost of living index can be considered a satisfactory criterion for the trend in buying power over a fairly long period. A constant relation between the consumption of social security beneficiaries and of the gainfully employed is, however, still not guaranteed if the real income per head of the working population, or per head of the population, changes in course of time. Especially during a period when the real income per head is tending to increase, maintenance of the buying power of benefits at a constant level would diminish the consumption of beneficiaries in relation to that of persons in gainful employment. If this too is to be avoided, the real income of beneficiaries will have to grow at the same rate as the income of those in gainful employment. This result may be achieved by adapting the nominal benefits to the nominal growth of income per head of the working population, or to a similar criterion. For instance, in the Netherlands the growth of wages according to collective agreements and other collective arrangements was chosen as a criterion for the adaptation of old-age, widows' and orphans' pensions as well as of long-term benefits for incapacity to work. The equal growth of the nominal incomes of beneficiaries and the nominal incomes of active workers does not necessarily signify that the consumption in these two groups also grows to the same extent. For if the saving ratio of gainfully employed persons increases more than that of social security beneficiaries, as would seem probable, the relative increase in consumption per beneficiary will be higher than that per head of the working population.

283. In the context of the present considerations, it is not necessary to evaluate the various possible methods of adapting benefits. It is, however, necessary to examine the connection between the method of adaptation and

the consequent method of financing, because this also influences consumption. This does not apply when benefits are financed wholly by the State, but it does apply when they are financed wholly or mainly by contributions. When financing takes place according to the capital cover system, only nominally fixed benefits can be accorded. This system necessarily entails the formation of considerable amounts of capital, which has specific effects on consumption in the event of currency fluctuation, owing to the time-lag between payment of charges and receipt of benefit. The influence of the charges on consumption depends on the level of prices and incomes at the time when the charges are paid. The consumption that a nominally fixed benefit will eventually permit will depend on the price levels then current. Hence, if the value of the currency changes, the reduction in consumption resulting from payment of contributions may then be more or less than the consumption permitted by the benefits. It may be assumed that capital constituted under this system of financing will be invested almost exclusively or primarily in bonds at par value. Currency fluctuations will therefore increase or reduce the real debts and the debtor's real interest burdens. When, in particular, the capital is invested in State securities, the effect of these fluctuations would be felt by the entire population, because it would naturally influence the real burden of the funds to be supplied from State resources, and this would be reflected in the real fiscal pressure.

284. These effects may be considered part of the general problems of passing on charges. It seems justifiable, however, to pay attention to them in studying the influence of social security on consumption, since the specific effects partly depend on the method of financing. This can be seen if financing by the capital cover system is compared with financing by the adjustable-contribution system. Under the latter there is no appreciable time-lag between the payment of charges and the receipt of benefits, so that any change in the value of the currency that may occur does not constitute a special factor capable of influencing the distribution of real burdens and profits. The adjustable-contribution system also offers the possibility of linking benefits either to a cost of living index or to an index of nominal incomes growth, if this is considered to be desirable social policy.

285. There is, however, another difference between these two methods of financing which is of importance for the problems dealt with in the present chapter. Financing by the capital cover system presupposes that savings must first be accumulated in order to constitute a capital which will be used for the payment of benefits. Therefore, in principle there is a delay between the time when it is decided to give cover against a certain risk and the time when the cover becomes effective. The techniques developed to bridge this gap need not be discussed here. They consist essentially in applying, at least during the initial period, a combination of financing by both the capital cover and the adjustable-contribution systems. But the main point is that, under the capital cover system, savings are amassed with a view to forming capital while the scheme is being built up, whereas such savings do not exist under financing by the adjustable-contribution system. Accordingly, transition from a system of capital cover to an adjustable-contribution system during this period will reduce the volume of savings, to begin with. If, as a result, the saving ratio threatens to fall below the ratio judged necessary or desirable for the economy, endeavours will presumably be made to attain the required ratio in another way. This will be achieved either by the enterprises, which will try to practise a price policy that will enable them to finance investments to a greater extent from profits, or by the government, which will try to cover a larger part of its expenditure from taxes. These effects will undoubtedly influence consumption without its being possible to pinpoint them exactly, partly because of the attempts made to pass on burdens.

286. To sum up, it may be stated that, as regards long-term benefits financed largely by contributions, the system of financing is also a factor which determines the influence of social security on consumption.

IV - Benefits to meet specific needs

A - FAMILY ALLOWANCES

287. Irrespective of the way in which family allowances are financed, and of their possibly being passed on by those who bear the cost of them, they lead, in relation to other recipients of income, to an increase in income for families with dependent children which is proportional to the number of children concerned. For, whether financing takes place from State funds or from contributions, it is inconceivable that only households with children should bear the entire costs. It is equally unlikely that charges would be passed on in such a way that the costs would be borne by the very people who had a right to family allowances.

288. However, it is impossible to determine with certainty the extent of the real changes in income resulting from family allowances, because the beneficiaries themselves will support a part of the cost. On the basis of

certain hypotheses concerning incomes growth and the duration of equal distribution of incomes, it is possible to calculate the size of family for which a balance is established between the charges relating to family allowances and the advantages derived from them throughout the whole period of equal income distribution. For such a family this benefit will only lead to a change in the timing of its expenditure. There will also be for each income period a specific size of family for which the advantages derived from family allowances will be equal to the charges relating to these allowances. In small families, the charges will then exceed the advantages. Single persons and families without children will only bear the charges and have no advantages. For larger families, the advantages will obviously outweigh the charges. If financing is by payment of contributions related to income, and the family allowances are independent of income, the size of family in which the charges and advantages are in equilibrium will vary according to income. The higher the income, the larger the family must be in order to balance charges and advantages. In addition, a complication arises if family allowances are considered to form part of the disposable income from the fiscal point of view, because higher taxes are then due, while, on the other hand, the amount of income tax to be paid is affected by the number of children.

289. The final result of these effects, which partly cancel each other out, can of course only be calculated in terms of the actual family allowances granted and the tax system in operation over a certain period. Table 1 gives an impression of the total influence of family allowances and income tax in the Netherlands during the period 1960-1962.

For various gross incomes, the amount of disposable income is calculated by subtracting the amount of income tax from gross income in the case of childless families and subtracting the amount of income tax from the sum of gross income and family allowances for families of different sizes. For each gross income mentioned, the table distinguishes between the disposable income of families of different sizes and the disposable income of families without children. Accordingly, these distinctions indicate the extent to which the disposable income of families with children is greater than the disposable income of families without children, owing to a combination of family allowances and tax deductions for dependent children. For purposes of comparison, the cumulative amount of family benefits is indicated for each size of family.

290. The table shows that for each size of family, irrespective of income, the increase in disposable income is greater than the amount of the family allowances. The absolute increase grows in proportion to the gross income.

291. Family allowances therefore entail transfers of income to the profit of families with children. The larger the family, the more it will benefit. These transfers will increase the volume of consumption so long as the family allowances per child are less than the additional costs of maintenance and education per child. It is therefore probable that, for a given basic income, the savings of a family with children will be less than those of childless families and single persons. Thus, a study of savings undertaken in the Netherlands in 1960 has shown that single persons save on average Fl. 250 a year from an income of Fl. 2,600, and childless couples save on average Fl. 500 (2×250) from an income of Fl. 6,150. In the case of couples with children it was found that this latter income would have to be increased by Fl. 500 per child if the same average amount was to be saved. (1)

292. In the Netherlands, family allowances are fixed at a level which is such that they only cover part of the additional costs occasioned by each child, it being understood that the family income, regardless of the number of children, does not drop below 80 % of the family expenditure, estimated on the basis of the average manual labourer's budget. The Central Planning Bureau has tried to estimate the way in which the lesser degree of prosperity of families with children is reflected in the distribution of expenditure among various budget items. Owing to a lack of basic data (budgetary statistics), a number of arbitrary hypotheses have had to be taken as starting-points. Consequently, the results obtained can only be considered an approximation. Nevertheless, they give an idea of the differences in the pattern of consumption between families of varying sizes with a specific basic income. Table 2 shows the extent to which the family costs thus calculated are covered by actual expenditure in respect of various budget items.

293. The Central Planning Bureau summarizes the results as follows: Examination of the budget items above the dotted line—that is, the items in respect of which children give rise to additional expenditure—shows that they can be grouped in a number of categories.

1. For two items, satisfaction of wants is considerably lower than satisfaction of total wants in all sizes of families. These are the items for transport and for religion, charitable donations and gifts.

(1) These amounts saved do not include compulsory pension insurance contributions and insurance contributions for funeral expenses.

TABLE 32

THE NETHERLANDS

Difference between the disposable income (1) of families with one to eight children and that of childless families, for various gross incomes (without family allowances) in the period 1960-1962

Gross income (in Fl.)		5 000	6 000	8 000	10 000	12 000	Cumulative amount of family allowances (in Fl.)
Difference between the disposable income of a childless couple and a couple with:							
One child	Fl.	311	333	357	381	438	234
	index	(100)	(107)	(115)	(122)	(141)	
Two children	Fl.	641	676	732	780	826	490
	index	(100)	(106)	(114)	(122)	(129)	
Three children	Fl.	972	1 021	1 108	1 177	1 248	746
	index	(100)	(105)	(114)	(121)	(128)	
Four children	Fl.	1 371	1 436	1 546	1 634	1 721	1 091
	index	(100)	(105)	(113)	(119)	(125)	
Five children	Fl.	1 794	1 856	1 984	2 100	2 228	1 436
	index	(100)	(103)	(110)	(117)	(124)	
Six children	Fl.	2 184	2 316	2 464	2 597	2 717	1 826
	index	(100)	(106)	(113)	(119)	(124)	
Seven children	Fl.	2 574	2 752	2 937	3 107	3 240	2 216
	index	(100)	(107)	(114)	(121)	(126)	
Eight children	Fl.	2 964	3 142	3 418	3 576	3 764	2 606
	index	(100)	(106)	(115)	(121)	(127)	

(1) Disposable income = gross income + family allowances — income tax.
Source: Publication of the Netherlands Economic and Social Council 1964, No. 3.

TABLE 33

THE NETHERLANDS

Extent to which calculated family costs are covered by actual expenditure in families with different numbers of children

(Basic income: Fl. 5 135 in 1959/1960)

Budget items	Actual expenditure of families without children (in Fl.)	Households with			
		1 child	2 children	3 children	4 children
		covered (%)			
Food	1 657	89	84	79	80
Household furniture and equipment	374	85	81	82	83
Heating and light	287	96	98	103	93
Clothing, shoes	468	88	86	78	78
Cleaning and domestic help	86	100	83	79	69
Hygiene	78	101	98	89	84
Medical care (except sickness insurance)	30	103	106	92	97
Education and recreation	340	93	85	81	68
Transport	253	77	67	55	45
Religion, charitable donations, gifts	211	82	60	62	59
Insurance (pension insurance not included)	73	135	129	118	103
Rent, water	500	91	97	101	110
Tobacco	202	94	88	88	75
Social and political interests	57	98	89	84	79
Sickness insurance	139	108	111	108	108

The items below the dotted line are those where children do not entail additional expense.

2. A more than average limitation of expenditure, but less than for the above-mentioned items, is apparent for the items clothing and shoes, household furniture and equipment, cleaning, and education and recreation, though for the last two items this limitation only starts in households with four children.

3. Generally speaking, consumption of food is limited to the same degree as satisfaction of total wants.

4. As regards remaining items, namely, medical care, hygiene, and heating and light, the limitation in relation to calculated family costs seems less than the average.

5. With respect to insurance it is noticeable that the actual outlay exceeds the family costs as calculated. The main form of insurance concerned here is life assurance. Owing to the growth of social insurance which has taken place in the interval, it is possible that the information given for the various classifications of families, which applies to 1951, will be of less value for 1959/1960.

294. When we consider the items below the dotted line, for which it is assumed there will be no additional expenses due to children, it should be noted that this assumption is not altogether correct as regards rents, at any rate in the case of large families, although it is possible that the budget data on this point are not entirely representative. The items tobacco and social and political interests are also limited, though generally to a lesser degree than total satisfaction of needs. Further analysis has revealed that the percentages for sickness insurance were more than 100 in 1951 because the figure for families without children happened to be low that year. The data plainly show that the greatest limitations are imposed for those items which indicate the level of prosperity most clearly. Furthermore, it would seem reasonable to suppose that this will be the case even more for higher incomes, since, as has been found, the increase in additional disposable income per child when a rise in basic income takes place is less than the increase in disposable income of a childless couple. The conclusion therefore seems justified that family allowances not only increase total consumption but also influence its pattern.

Finally, it should be pointed out that the foregoing applies only to direct consumption by the families themselves. In so far as family allowances contribute towards further education being pursued on a larger scale, consumption by the public authorities will naturally also increase.

B - MEDICAL BENEFITS

295. The departments of social security which aim to cover the risk of costs relating to medical care and treatment exert a specific influence on consumption. Here the social security benefit is not a sum of money which may be spent at will but consists in provision of a particular service or in reimbursement of all or part of the costs involved. This form of social security naturally implies that the volume of demand for these services is not subject to the restrictive influence of price formation, or is so only to a small extent.

296. Thus, when the benefit of medical services as such is guaranteed, or when the cost of these services is repaid in full, the volume of consumption will not in any way be limited by considerations of cost. In so far as the consumer himself can exercise an influence, the volume of consumption will be determined by his subjective needs. This will be notably the case when he calls in a general practitioner. In the case of other benefits (specialist consultations, hospitalization, admission to a sanatorium, etc.) the advice of the doctors concerned on the necessity or desirability of the benefit will decisively determine the volume of consumption. It is, of course, assumed here that the supply is sufficient to satisfy the demand. If a system where the volume of demand is not influenced by cost considerations is accepted for this part of social security, the adaptation of capacity of supply to volume of demand must also be accepted as a consequence.

From the above it may be concluded that the methods of covering the medical risk make it very difficult to say whether the increase is medical consumption observed in certain member countries is absolutely necessary from the point of view of adequate attention to health. Some data on the increase of consumption of medical services are given in Tables 34, 35 and 36.

TABLE 34

Consultations by persons insured under the general social security system (sickness insurance) in France (1)

Years	Numben of consultations per insured person	
		Index 1953 = 100
1953	1.143	100
1954	1.149	101
1955	1.222	107
1956	1.311	115
1957	1.354	118
1958	1.402	123
1959	1.741	152
1960	1.880	164
1961	2.078	182
1962	2.090	183
1963	2.196 (1)	192 (1)

(1) Estimate.

Note: The "number of consultations" includes both consultations of general practitioners and specialist consultations. The latter are converted into consultations of general practitioners on the basis of the ratio between the scale of repayments for consultations of general practitioners and the scale of repayments for specialist consultations.

(1) Table 34 is taken from *L'influence des facteurs économiques sur la consommation médicale* (The influence of economic factors on medical consumption), published by the Centre des Recherches et de Documentation sur la Consommation, February 1966.

297. It should not be considered, however, that *a priori* no idea can be formed of the influence exerted by the form and content of social security measures for medical care on the volume of medical consumption. In order to get such an idea, one could start by ascertaining the differences between the medical consumption of insured and uninsured population groups. This can then be followed by verifying whether differences exist in the volume of medical consumption according to the degree to which the risk concerned is covered. Finally, if the social security system is changed (e.g. increase in the share of costs borne by the insured persons), an attempt could be made to define the nature of any influence these changes might have on the volume of consumption.

TABLE 35

Development of benefits per insured person in Italy (National Institute of Sickness Insurance - INAM) (1957-1965)

Years	Consultations per insured person		Medical prescriptions per insured person		Cases of hospitalization per insured person	
	Average number per year	Index 1957 = 100	Average number per year	Index 1957 = 100	Average number per year	Index 1957 = 100
1957	5.49	100	7.29	100	0.063	100
1958	5.13	93	6.50	89	0.069	110
1959	5.48	99	6.93	95	0.075	119
1960	6.23	113	8.06	111	0.079	125
1961	6.58	120	8.60	118	0.084	133
1962	7.32	133	9.56	131	0.089	141
1963	7.74	141	10.05	138	0.097	154
1964	8.26	150	9.93	136	0.102	162
1965	8.76	160	10.90	150	0.109	173

N.B. - By "insured person" is meant anyone entitled to benefits.

TABLE 36

Development of the number of benefits per insured person in the Netherlands

1954	100
1955	102
1956	105
1957	107
1958	111
1959	115
1960 (1)	116

Source: Ziekenfondsraad (Sickness insurance council).

(1) For the years after 1960, the trend in the volume of consumption is known only in respect of certain benefits. This information permits the conclusion that the volume of consumption continued to increase after 1960.

298. The French report "L'influence des facteurs économiques sur la consommation médicale" (The influence of economic factors on medical consumption) affords an example of how such a study should be organized and of the results that could be obtained. This report gives the findings of a survey undertaken in 1960 by the "Centre des Recherches et de Documentation sur la Consommation" to examine the incidence of social security on the consumption of medical services in France. The object of the trial survey, the scope of which was limited, was to get an idea of the incidence of three economic factors on medical consumption, namely, the income of the consumer, the price of the goods and services consumed, and the procedure for covering the risks in question. Concerning this last factor, a distinction was made between the repayment system and the "tiers payant" system, in both of which the share of the costs borne by the insured person may differ to a quite considerable extent. Furthermore, by means of data concerning a longer period, it was possible to analyse the influence exerted by a change in the share of the costs borne by the insured person on the volume of consumption of certain medical services and pharmaceutical products.

A detailed description of the nature of the survey and its results would be out of place in the present context. The most important conclusion to be drawn from it, however, is that the economic factors—prices and incomes—had only a very slight effect on the volume and development of medical consumption.

As regards the components of medical consumption for which data covering several years are available, notably the trend in the consumption of pharmaceutical products, we are obliged to conclude that changes in the extent to which those insured had personally to contribute towards the cost of these products have neither slowed down nor accelerated the development of consumption. Medical consumption appears to have its own growth rate, which is determined by the speed of development of medical knowledge and its applications.

299. The report concludes, though in very cautious terms, that changes in prices and incomes will have little effect on medical consumption. It would appear important that more extensive studies should be made, for the purpose of providing a clear view of such price and income elasticity for various aspects of medical consumption and various incomes.

These studies may perhaps furnish some indication of the degree to which the consumption of medical goods and services depends on the scope of social security measures in matters of health care.

300. It is important to obtain an understanding of this subject in order to judge whether, when a policy is worked out in this sphere, not only considerations of public health but also other considerations of social policy may be able to play a greater part than has generally been assumed up to now.

CHAPTER V

Effects of social security on manpower supply and demand

I - Positive effects on the quantitative supply of manpower

301. Social security influences both the number of posts available and the numbers seeking posts; through the interaction of these two elements, it also influences the employment level.

At any given time and in any given economy, the employment level is determined by the supply of and the demand for manpower. (1) It is advisable to make separate studies of these two elements; the influences exerted on them by social security measures may differ widely, for the effects produced by the different branches of social security will vary and may even conflict.

302. The manpower supply comprises the total hours of work offered by persons seeking a post and who are suitable for that post. In this study, the argument is based on overall terms, that is to say, it takes into consideration all men and women who want to work, are of a suitable age, and are physically and mentally capable of doing the work.

Thus our analysis covers the entire labour force and more than just the supply of posts available.

303. The first effect of social security is on the population as a whole and acts mainly through sickness and invalidity insurance and family allowances. These influence the overall level of the population and its average state of health. Although statistically it is difficult to define the concept of average state of health, it constitutes a fact which has certain economic consequences. When fewer people suffer from sickness, or when people are less frequently ill, the production capacity of the population as a whole increases.

304. It is obviously difficult to isolate the influence of social security measures from that of other factors. To take a simple example, we can say that where an effective sickness insurance scheme operates it undoubtedly leads to an improvement in the average health of a nation: by enabling people to look after themselves better—and frequently with less delay—it prevents them from having to leave the production sector for health reasons. The scheme is necessary, but is not in itself enough. The average health of a nation also depends on the standard of medical knowledge, the country's medical and hospital equipment, etc. While, then, a sickness insurance scheme is one factor for improving health, it is difficult to quantify its effect, since it operates in conjunction with others. Moreover, the effects may be indirect, and there may be some interplay between the various factors. A sickness and invalidity scheme enables more people to take care of their health and, by doing so, it also enables medical and hospital equipment to be developed and medicine to extend its field of application and experience. Advances in medicine in turn lead to an improvement in the average state of health, and so it goes on. It is hardly possible to describe the overall impact in a less theoretical manner.

305. This ties in with the views of Alfred Sauvy, who has defined the effect of social security upon the trend of population as follows:

(*a*) "Granting benefits (sickness insurance) increases medical consumption and improves medical care;

(*b*) The increase in medical consumption and improvement in medical care reduces the mortality rate;

(*c*) The reduction in the mortality rate changes the population structure." (2)

It must, however, be emphasized that these views are not unanimously accepted and some people consider, in the light of surveys carried out by the International Labour Office, (3) that compulsory sickness insurance, as distinct from the other forms of cover offered by social security arrangements, ends up in fact merely as a substitute for private insurance. According to this thesis, in any national economy compulsory sickness insurance would cause only a relatively minor increase in the overall expenditure aimed at ensuring and improving health.

(1) Supply of manpower = total hours of work offered by all those who are prepared to work.

(2) A. Sauvy: *La Sécurité Sociale et la Démographie* (Social security and demography), p. 2. European Social Security Conference, Brussels, 1962.

(3) *Le coût des soins de santé* (The cost of health care). ILO, Geneva, 1959.

306. At all events, is it possible to make a quantitative evaluation of the impact of social security on the population level? Apparently not. To do so, it would have to be possible to isolate the influence of social security from that of the other factors involved. If we isolated social security, that is if assumed that it had not existed, we should also have changed the whole development of medical knowledge. The extension of the human life-span is something that can be measured, but it is also something which existed before the introduction of social security; obviously it is a result of the progress made in hygiene and medicine. When coupled with existing factors, social security will have enhanced their effects.

307. A family allowances scheme has an undoubted effect upon the birth rate. This influence is not necessarily as immediate and automatic as we may believe. Alfred Sauvy summed up the matter very effectively when he wrote:

"In the developed countries, family allowances have a favourable effect upon the birth rate, but the mechanism is not as simple as people think. They do not so much cause a positive and conscious increase in the number of children desired as a weakening of the will to refuse them...

Furthermore, family allowances play a social role: thanks to them, children can be better fed, better brought up and better housed." (1)

308. Family allowances appear to have a definite effect upon the number and quality of the population, but they are far from being the only factor to be taken into account when the birth-rate is considered. A population's attitude to the birth-rate depends upon other elements, among which the following can be given as examples: its conception of future events (risk of war, economic crises, unemployment), the facilities available to families with children (existence of crèches, home helps), the general standard of living and the whole range of attitudes towards life which are tied up with ideologies or religions. The development of contraception techniques will probably increase the importance of the family assistance policy and, in particular, of family allowances.

309. Unquestionably, then, social security has an impact on the number and quality of the population, especially through sickness and invalidity insurance and family allowance schemes. Its influence is, however, not solely quantitative; as, on the contrary, it has important qualitative aspects, it cannot be quantified directly.

The impact is an overall one, and affects everyone, even those sections of the population which derive no direct gain from social security benefits. The sickness insurance scheme does in fact appear to have made a contribution towards the general development of medicine and the entire population, whether insured or not, has benefited.

310. Furthermore, a family allowances scheme for the self-employed may lead to an increase in the birth-rate and thus cause an increase in the country's population. If the economic situation is favourable, these additional persons may well join the labour force.

This initial effect of social security on demography can, then, be considered as being general, favourable, qualitative and difficult to quantify.

II - Temporarily negative effects on the quantitative supply of manpower

311. Social security may have temporarily negative effects on the quantitative supply of manpower. We must state straightaway that, nevertheless, such effects should be qualitatively favourable in the long run, and can be considered socially worthwhile. The raising of the school-leaving age, and invalidity benefits, can be viewed in this light.

312. Raising the school-leaving age is a general and beneficial phenomenon in our industrialized countries. It enables the population's average training standard to be raised and the general cultural level of all the inhabitants of a country to be improved. However, it has a temporary negative effect upon the amount of manpower available. This temporary reduction can be measured, and allowance is made for it in forecasting the labour force.

313. Raising the school-leaving age does not, however, depend solely on whether a social security system exists. It is determined by two kinds of factors.

The first are the material factors which may, in the first analysis, be reflected in the general income level. It is at that level that social security comes into play. Its intervention is direct as regard family allowances and indirect as regards other benefits.

(1) Sauvy, *op. cit.*, p. 7.

It must be emphasized that in several countries, and in Belgium and France in particular, family allowances are differentiated according to the age of the child concerned, and are provided for a longer period when he or she continues to study. This demonstrates willingness to assist those families which make an effort to extend their children's education.

314. The other benefits, for their part, increase the households' general income, and prevent the situation where the need for income causes children to begin work earlier. While it has an undoubted influence, social security is not the only reason for longer schooling: the general level of income, the extent to which facilities are given for studying free of charge the various forms of educational assistance (scholarships, the educational infrastructure) supplement and combine with the effects of social security.

315. Then there are the immaterial factors, such as the population's general views on education and training. This is becoming particularly important as certain attitudes regarding education disappear in the lowest income groups.

In addition, we must include as one of the "temporarily" negative effects on the volume of manpower those periods covered by invalidity benefits, as well as the legal provisions relating to maternity leave.

316. These measures do in fact prevent the pressing need for income from compelling those who are ill or disabled, but not completely unfit for work, to continue to offer their services despite the risk to their health which this may involve.

The measures are an indication of firmly positive social progress and a guarantee that the physical capacity of the labour force is maintained. They are much more "temporary" in character than the raising of the school-leaving age.

III - Effects which lead or could lead to a reduction in the quantitative supply of manpower

A - PENSION SCHEMES

317. This group comprises two types of effect:

(*i*) those connected with the existence of pension schemes;

(*ii*) other possible effects.

An attempt should be made to calculate the quantitative influence of social security on the amount of manpower available.

The basic aim of an old-age or survivors' pensions scheme is to allow old people to retire from the production process and live for some years with the help of an income consisting of payments made during their working lives (capital cover system) or with the help of payments made by those who are still working (adjustable-contribution system). The obvious result of such a scheme is that the majority of those who reach pensionable age stop working. To assess the effect upon the amount of manpower, various hypotheses must be postulated and several comparisons made.

318. What would happen if there was no pension scheme?

Nowadays this hypothesis is almost inconceivable. Yet such was the case for centuries. In this situation workers remained active as long as they could, and were then kept by their children or public charity. It would seem, therefore, that the result of the pension schemes is a reduction in the amount of manpower. The situation may vary somewhat from country to country.

BELGIUM

319. We must emphasize that the pension legislation does not oblige workers in the private sector to retire from active life. Belgian law does not prohibit employment of male wage-earners or salaried employees over 65 years old or women over 60. It does not prohibit the self-employed from continuing beyond pensionable age. It provides for the retirement of civil servants at a specific age but does not prevent them from supplementing their pension by work.

The sole restriction concerns the situation where a pension paid under social security schemes is augmented by a job which is more than merely secondary and supplementary to a limited extent. During manpower shortages, however, the conditions under which a job and a pension may be combined are relaxed. This proves that a pension scheme should not be considered an immovable obstacle to any increase in the supply of manpower when circumstances make such an increase essential. Basically, the volume of employment depends on the demand for manpower. When shortages occur, the necessary amendments are made to the law in order to remedy the falling-off in the number of persons seeking work.

320. The income provided under the pension schemes is less than the income obtained during the pensioner's working life. All pension legislation confirms this fact. The successive improvements made to the pension laws are aimed at putting the workers in the private sector on the same footing as those employed in the public services, i.e., at assuring them a pension corresponding to three-quarters of the income obtained at the end of their working life. This equality has not yet been fully attained. Where minimum pensions are currently guaranteed to workers in the private sector, these pensions are distinctly lower than the average earnings of the active workers as a whole.

321. Table 1 gives a comparison between the minimum pensions assured by the series of laws and the average gross earnings of wage-earners and salaried employees. These comparisons should be interpreted with caution: they are simply for guidance and to indicate trends. For in certain cases the minimum pensions may be lower than the actual pensions, or they may be higher than the actual pensions, especially in the case of pensioners who retire before pensionable age. The earnings are average earnings, and in the case of the salaried employees the averages are boosted by inclusion of the figures for executive and managerial staff. It can, however, be said that the current old-age pensions are indubitably lower than the income of active workers and that, under present circumstances, the amount of pension benefits cannot cause workers under retirement age to be less inclined to seek work.

TABLE 37

Comparison of guaranteed minimum pensions with average earnings

(Annual amounts in Belgian francs)

Minimum pensions for married workers		
	Wage-earners	Salaried employees
Law of 9 August 1958	36 000	
Law of 17 February 1969		48 000
Law of 17 July 1961	38 500	51 336
Law of 3 April 1962	40 000	53 333
Law of 10 March 1965	41 000	54 400
Law of 13 June 1966	42 667	56 613
Average earnings (industrial) (1)	**Wage-earners**	**Salaried employees**
1958	70 200	138 400
1959	72 450	142 500
1960	74 600	147 900
1961	77 500	151 500
1962	82 371	158 000
1963	89 115	168 000
1964	98 406	182 556

(1) Calculated on the basis of 300 × daily wages (wage-earners) and 12 × monthly salary (salaried employees)

GERMANY

323. The minimum ages at which old-age or retirement pensions can be granted are mainly as follows:

50 for old-age pensions to miners who have worked underground for 180 months as coalgetters or in an equivalent post.

60 for retirement/old-age pensions under the compulsory insurance scheme for:

(*a*) insured women who have retired (on request);

(*b*) insured persons who have been without a job for at least one year, for the duration of their unemployment (on request).

62 for retirement pensions to civil servants (on request).

65 for retirement/old-age pensions to those insured under the schemes of compulsory insurance, artisan insurance or assistance to aged farmers, or for retirement pensions to civil servants.

324. Apart from these main minimum ages, there are others whose economic effects are quantitatively less important, for instance, as regards police officers, members of the armed forces, and judges.

For any quantitative assessment of the effect of the above minimum ages on manpower supply and demand it is essential, inter alia, to know how many people continue in regular work despite their entitlement to a retirement pension or other official old-age benefits.

322. It is possible to obtain an early pension but this reduces the amount paid. The law does indeed allow a pension to be taken up five years early, but the number of pensioners who retire before statutory pension age forms a very small proportion of the total labour force. On the other hand, the number of workers who remain covered by social security provisions by continuing to work beyond the normal retirement age is extremely small. However, it includes more salaried employees than wage-earners.

325. A survey published by the Federal Ministry of Labour (1) concerning the recipients of pensions and relief during 1962 shows that:

15.2 % of those receiving State old-age pensions go on working (20.7 % of men and 9.2 % of women).

8.5 % of those receiving the above pensions obtain their main source of income from work (12.1 % of men and 4.6 % of women), while 85.2 % obtain it from their pension and 6.3 % from their families.

77.9 % of those receiving an industrial disablement pension still have an occupation and 73.4 % obtain their main source of income from it. It must be mentioned here that the degree of disablement of most of those receiving such a pension is less than 50 %. To obtain the pension, these persons must not yet have reached the minimum age for an old-age pension. 19.4 % of those receiving survivors' pensions continue to work (29.3 % of men and 18.9 % of women).

All these figures indicate that the majority of those entitled to pensions cease to work altogether when they reach the minimum age for an old-age pension.

FRANCE

326. In France, those insured under the general social security scheme can legally retire at 60, receiving 20 % of the wage taken as a basis of assessment. But an increment scheme encourages them to work on until 65, when the pension rate is 40 % of this wage. The demographic situation in France, which is characterized by a high proportion of old people, would prompt extension of the working life in order to ease the burden of social transfers, but various other factors militate against this.

327. For instance, there is a tendency to consider unemployment insurance as an early-retirement scheme. The joint committee responsible for interpreting the rules of the agreed scheme has gradually extended the period during which benefits are granted. Since 1961, benefits have been allowed for 330 days up to the age of 40, 360 days from 40 to 50, 600 days from 50 to 60, 720 days from 60 to 62 and 3 years from 62 to 65. In 1964 the benefit period was extended to 5 years above the age of 60. This step was taken because of the difficulty in finding work encountered by unemployed persons over 60.

In this connection, mention must be made of the legislation relating to the National Employment Fund (law of 18th December 1963), which provides allowances, amounting almost to the working wage, for certain workers over 60 who have been laid off *en masse,* without their having to register as seeking work or sign on regularly at the employment exchanges. This is because they would obtain no benefit from any retraining measures.

328. As regards old-age insurance, in 1964 the percentages by age of insured persons taking up their retirement pensions under the general scheme were as follows:

60 years old : 12.26 %

61-64 years old : 14.64 %

65 years old: 57.46 %

In other words, 84.36 % of the insured persons who retire on pension do so at 65 or earlier.

Under the French general scheme, entitlement to full pension is achieved after 30 years of contributions. But a worker's normal working life is 40 to 45 years. Consequently, some insured persons may contribute for a further fifteen years without obtaining any increase in their pension. The problem did not arise in practice until 1960, when the old-age pension legislation had been in existence for 30 years. All the same, this provision does not encourage insured persons to prolong their working life.

ITALY

329. The provisions governing old-age pensions in Italy can be summarized as follows:

Under the general scheme for wage and salary earners, which is administered by the National Institute for Social Insurance (INPS), the minimum retirement age is 60 for men and 55 for women. There are higher minimum ages under various special schemes, in particular 65 for men and 60 for women in the case of self-employed workers; under their contracts of service those employed in the public services usually retire at 65. The above limits may be lowered for the occupational groups of persons employed in arduous jobs.

(1) *Die Renten-, Pensions- und Unterstützungempfänger im Jahre 1962* (Recipients of pensions and assistance in 1962). Ministry of Labour and Social Affairs, Bonn.

330. Entitlement to old-age pension is subject in every case to specific administrative conditions (15 years' contributions to the general scheme) but not to the condition that all work is discontinued. Increases are provided when the worker voluntarily defers drawing his pension.

Firms had been obliged to inform the INPS which of their employees were receiving a pension under the general scheme and (under certain conditions) to stop one third of their pension from their wages. All these provisions have been annulled. Since 1965, pensioners who continue working no longer have their pensions reduced.

It is not easy to evaluate, at least quantitatively, the extent to which the legislation summarized above influences the employment of older workers.

331. Some significant data could undoubtedly be obtained by examining the percentages of pensioners who work, and those who do not work, on the basis of suitable criteria—pension categories (invalidity, old-age war), age, sex, amount of pension, occupational qualifications, etc. However, no systematic survey has been carried out in Italy for the purpose of obtaining such information.

Under these circumstances, and in view of the small amount of data currently available, it is difficult to give other than qualitative evaluations of the matter in question. In particular, since physical fitness for work starts to decline when the retirement ages specified in the social security provisions are reached, we can say that these provisions have a psychological effect upon employers and workers in that they tend to concentrate retirement at those ages.

332. The ratios of working population to total population in the different age groups support this statement. Recent surveys show that for men these ratios are as follows:

Age group	*Percentage working population/total population*
46-50	95
51-55	95
56-60	90
61-65	57

It is quite clear from this that the ratio of working population to total population undergoes a sharp drop between the penultimate and final age groups examined. Therefore, the latter group does not apparently include at least some of the male workers who are subject to schemes where the minimum retirement age is fixed at exactly 60 when the necessary administrative conditions are fulfilled. Yet, if we take into consideration the fact that the age groups in question are still fully capable of working, we have grounds for assuming that the retirement provisions in force have appreciable repercussions on the employment of older workers.

333. A similar study, taking into account the age, sex and occupational qualifications of the workers who are still active (data on which are not available at present), could provide more significant information.

The small number of pensioners under the general scheme who continue to work is a further indication in support of the view that the social insurance scheme does influence retirement age. In fact, with the reservations expressed above, the accounts published by the INPS concerning the amounts of stoppages for pensioners who continued to work prompt the conclusion that in 1963 approximately 250,000 pensioners continued to work in the non-agricultural sectors.

334. Furthermore, on the basis of very summary assessments and different hypotheses, during the year in question the ratio of pensioners who continued to work to all those who received an old-age pension and were not employed in the agricultural sector was as follows (%):

Sex	*Age groups*			
	55-59	*60-64*	*65-69*	*69 +*
Men	—	25	24	8
Women	14	14	6	2

This indicates that, in a year when the absorption of manpower by the labour market can be considered as normal, the ratio of working pensioners to all pensioners was low on the whole, even in those age groups which are usually assumed to be fit for work. Allowing for all the customary reservations, this situation prompts the view that at least some of the older workers stopped working because they were affected by the social security legislation.

335. To conclude and summarize the situation in Italy, we can comment as follows:

(*i*) It is impossible to obtain sufficiently conclusive quantitative results without instituting an extensive and lengthy special survey.

(*ii*) On a general level, it nevertheless seems evident that a social insurance scheme has a direct influence on the employment of older workers in so far as the pensionable ages fixed by the provisions are different from the ages when physical fitness for work deteriorates most rapidly and in so far as that scheme grants economically effective allowances.

TABLE 38

Minimum annual pensions and average earnings in Italy from 1952 to 1965 (expressed in Belgian francs)

Minimum pensions (wage-earners and salaried employees)	
1 January 1952 - 31 December 1957	5 200
1 January 1958 - 30 June 1962	8 320
1 July 1962 - 31 December 1964	15 600
Since 1 January 1965	20 280

Average earnings in industry		
	Wage-earners	Salaried employees
1952	25 235	41 794
1953	26 739	42 684
1954	26 888	44 334
1955	28 170	47 318
1956	29 815	50 556
1957	31 165	52 999
1958	32 777	55 688
1959	33 181	56 672
1960	34 737	59 074
1961	36 188	61 451
1962	40 262	67 120
1963	46 026	80 054
1964	54 049	91 312

HOLLAND

336. Dutch pension legislation does not prevent people from continuing to work after pensionable age. However, in the 1947-60 period there was a sharp drop in the percentage of the 65+ age group who still remained active. From 1950 to 1955 the supply of labour from those over 65 fell by 10,000 man-years; from 1955 to 1960, by 50,000 man-years; from 1960 to 1965, by 14,000 man-years; and a further drop of 13,000 man-years is forecast for 1965 to 1970.

337. This decline can, for the most part, be attributed to the introduction of statutory and extra-statutory old-age pensions. The general old-age pension law applies to the entire Dutch population. At 65 everyone, both men and women, receives the pension guaranteed under that law. (1) On 1 January 1965 this pension was fixed at a socially necessary minimum. An unmarried person receives 70 % of a married person's pension. The pensions are linked with progress in general prosperity, that is to say they follow the trend of the wages fixed under collective agreements and the rules for fixing incomes.

(1) Except under certain circumstances, a married woman is not entitled to a separate pension under this scheme.

Since 1964 the Netherlands has imposed a minimum wage, which must be paid to all workers over 25.

In Table 39 the statutory pensions are compared with the minimum wage in Belgian francs, and the former are expressed as a percentage of the latter.

TABLE 39

Netherlands

Year	Minimum wage	Pension (married persons)	(3) as a % of (2)
1	2	3	4
1964	71 760	39 413	55.0
1965	78 936	52 868	67.0
1966	86 112	58 360	67.8
1.1.67	90 418	61 686	68.2

338. The pensions provided under the general old-age pensions law should be considered as basic pensions. In the individual occupations, they should be supplemented by pensions from the pension funds operated by enterprises or the respective trade organizations. Those employed in the public services receive pensions which are linked with the general level of prosperity: these are determined on the basis of the last salary received and are increased by the same percentage as the salaries of the active employees whenever these are raised.

To sum up, we can say that the pension regulations have a clear influence on the supply of manpower in the 65+ age group of the population.

339. The fact that most people retire from work as soon as they receive an old-age or retirement pension under a social security scheme is obviously insufficient evidence for concluding that they would work longer if no compulsory old-age insurance existed or if the minimum age for entitlement to old-age benefits was raised. To measure these effects it would be necessary to know more about the causes determining the supply of older manpower.

340. If there was no compulsory old-age insurance, or if other minimum ages were fixed for entitlement to old-age pension, the supply of labour from older people would depend upon their fitness to work and their willingness to work.

341. Physical strength, powers of concentration, speed of reaction and, consequently, the objective criteria for

working in many occupations undeniably deteriorate with age. In this connection, reference can be made to a large number of specialized studies which have been published in Germany in the "Zeitschrift für Alterforschung". It is no less obvious that a firm age limit, indicating when a worker becomes unfit for his occupation, cannot be fixed, and that the duration of fitness for work varies considerably from person to person and occupation to occupation. In some occupations—particularly the non-manual ones—older persons are sometimes even considered more capable than the young.

342. It cannot be denied that, if compulsory old-age insurance did not exist, many people would not voluntarily take out sufficient insurance against the risks of old age ("law of underestimation of future requirements") and, even if they wished to do so, could obtain only inadequate insurance under private insurance policies (loss of assets owing to war or inflation). Poverty would therefore force them to offer their services on the labour market, even at an advanced age. For the same reasons, if compulsory old-age insurance did exist but with higher minimum ages for entitlement, they would have to work longer until they reached the age concerned.

From this angle, it could be assumed that one effect of compulsory od-age insurance is to reduce the manpower supply.

Unfortunately, no major studies have been made concerning the willingness to work on the part of those who, under the current legal provisions, have reached or passed the minimum retirement age.

343. To sum up, we can say that it is impossible to give a quantitative assessment of the effect of compulsory old-age insurance on the labour supply. Generally speaking, those who are entitled to a pension under social security schemes retire when they reach the age of entitlement. We may assume that if no compulsory old-age insurance existed, or if the minimum pensionable age was higher, poverty would force people of advanced age to continue to offer their services, and this would lead to an increased supply of manpower at national level. Taking an optimistic view, however, we may also assume that employers would make use of part of the additional supply of older manpower. In the Federal Republic of Germany it does, in theory, seem possible to mitigate the negative influence of compulsory old-age insurance on length of working life by amending the existing old-age insurance schemes—for example by discontinuing compulsory retirement of people who have reached retirement or pension age, or by introducing economic aid to employers and older workers as a stimulus for the latter to go on working.

344. At all events, we must give unreserved support to the argument that the social advantages of old-age insurance within the framework of the social security schemes far outweigh the disadvantage of a drop in the number of people employed in the national economy.

345. The following general conclusions can therefore be drawn:

(*a*) Where a statutory old-age pension scheme exists, it leads to a situation in which the great majority of workers retire from productive life at the legal pension age.

(*b*) The proportion of those who take an early pension or continue to work after pension age is extremely small in relation to the entire working population.

(*c*) When the demand for labour is particularly high, there is a tendency to ease the conditions governing the combination of a job with pension benefits.

B - UNEMPLOYMENT INSURANCE

346. Do the other branches of social security have effects which lead to a reduction in the amount of manpower?

Any attempt to ascertain the incidence of unemployment insurance legislation on labour is tantamount to examining whether that legislation causes either a decrease or increase in the supply of manpower.

347. Unemployment insurance does not result in a decrease in the labour supply. This can be proved by reference to two distinct factors:

Firstly, unemployment benefit is considerably lower than the average earnings of workers in employment;

Secondly, comparison between the two curves for the number of unemployed and for industrial activity shows that the level of unemployment is directly dependent on industrial activity, and consequently the number of unemployed is linked with the demand for labour and not with the fact that unemployment insurance exists.

348. Furthermore, it should be pointed out that the statements which follow are not inconsistent with the existence of some genuine abuses observed in regard to unemployment. However, it must be emphasized that these abuses concern entirely marginal cases and involve only a very small number of people, and the great majority have been eliminated by stricter control and legislation. Accordingly, we must not exaggerate the importance of a phenomenon which in no way contradicts the general conclusions that can be drawn from general

examination of the relationship between employment and unemployment insurance.

349. We shall now study the amounts of unemployment benefit and the average earnings of workers in employment in the EEC countries (expressed in Belgian francs).

Belgium - The level of unemployment benefit has always been very much lower than the average earnings of workers in employment. In Table 40 the daily unemployment benefit for a married worker in Belgium is compared with the average daily earnings of an industrial wage-earner. This benefit is the highest of all forms of unemployment benefit. We observe that it amounts to less than half of the average earnings of industrial wage-earners and, as a result, does not encourage voluntary retirement. Except in certain individual and insignificant cases, it can be said that unemployment benefit does not act as an inducement to stop work. If workers voluntarily left their employment in order to enjoy unemployment benefit, they would give up a major part of their potential income. Moreover, it should be stressed that legislation obliges those receiving unemployment benefit to accept offers of employment made to them, provided these suit their abilities and skills. In the event of unwarranted refusal, the benefit is discontinued.

TABLE 40

Belgium

	Unemployment benefit of married worker whose wife works solely in the household (1)	Average earnings of an industrial wage-earner
1st quarter of 1957	96.00 F	225.10 F
1st quarter of 1959	106.00	237.20
4th quarter of 1959	108.65	247.80
1st quarter of 1962	121.00	264.60
3rd quarter of 1962	124.02	276.30
4th quarter of 1963	127.05	308.30
3rd quarter of 1964	130.07	332.30
1st quarter of 1965	133.10	346.30

(1) Communes in category 1.

350. For France the comparison covers the unemployment benefits and average weekly earnings of all wage-earners (all occupations).

TABLE 41

France

September	Unemployment benefit of married worker whose wife works solely in the household (communes of over 5 000 inhabitants outside the Paris area)	Average earnings of wage-earners, all occupations
	+ supplementary insurance (1)	
1957	30.80	92.69
1958	37.10	102.60
1959	37.10	107.04
1960	40.95	122.50
1961	40.95	128.76
1962	40.95	139.08
1963	46.90	152.36
1964	46.90	160.33
1965	50.05	168.72
1966	53.20	179.08

(1) The unemployment insurance benefits relating to all the occupations represented in the Conseil National du Patronat Français should be added to the statutory benefits. The first-mentioned benefits are generally 35 % of the wage received during the reference period, and they are combined with the statutory benefits to a large extent.

351. In Table 42 daily unemployment benefits are compared with the average daily earnings of industrial wage-earners in Italy.

TABLE 42

Italy

Year	Average unemployment benefit			Average earnings of industrial wage-earners
	Non-agricultural workers	Agricultural workers	Total	
1957	24.48	24.88	24.64	103.92
1959	26.00	23.20	24.64	110.64
1962	34.56	30.32	32.32	134.24
1963	33.52	30.40	31.84	153.44
1964	33.44	30.64	32.00	180.16

352. Table 43 shows the position in the Netherlands as regards daily unemployment benefits and the average

gross daily wage of industrial wage-earners for the period 1958-64.

TABLE 43

Netherlands

Year	Maximum daily benefit	Average daily benefit	Average gross daily wage of industrial wage-earners (men, women and young persons (1)
(1)	(2)	(3)	(4)
1958	200	125	167
1959	200	132	174
1960	211	140	191
1961	243	157	215
1962	243	164	234
1963	265	179	252
1964	298	197	290

(1) The sums given in this column relate to October of the year concerned.

353. Until 1 January 1965 the unemployment benefit was 80 % of the daily wage for married men and persons with dependent families, 70 % for unmarried persons and those over 18 who had no family to support and did not live with their parents, and 60 % for all other workers. A limiting maximum daily wage was taken into account in every case. The sums in column 2 represent 80 % of this maximum daily wage for a six-day week.

Since 1 January 1965 every worker has been insured against loss of earnings through unemployment, irrespective of his wage or salary (before that date, there was a ceiling for earnings under unemployment insurance). Since 1 January 1965 the rate of benefit has also been raised to 80 % of the average daily earnings for all workers. A maximum wage ceiling is fixed each year: on 1 July 1967 this was Bfrs. 1,063. Insurance against loss of income through unemployment terminates when the worker reaches the age of 65.

354. We shall now study the trend in unemployment and in industrial activity.

BELGIUM

Table 44 shows the trend in the overall volume of unemployment and in industrial activity. These two phenomena run very much in parallel. After a period of full employment, a characteristic of the years of reconstruction, unemployment increased between 1949 and 1953. During these years economic activity slowed down, apart from the boom caused by the Korean War. A fall in unemployment marked the expansion in activity in 1954-58, while the 1958-59 recession saw a renewed rise in the number of unemployed. A fresh drop in unemployment accompanied the revival and progress of industrial activity from 1960 to 1964. The slowing-down of the economic growth rate observed in 1965 was accompanied by a clearly perceptible, but moderate, rise in the number of unemployed.

TABLE 44

Trend in unemployment in Belgium

Year	Total unemployed	% of insured population	Industrial activity (1953 = 100)
1947	67 560	3.5	85.4
1948	129 203	3.5	91.4
1949	234 896	11.6	90.7
1950	223 537	10.9	94.2
1951	206 520	9.8	108.0
1952	246 538	11.8	99.6
1953	245 807	11.8	100.0
1954	224 732	10.9	104.0 (1)
1955	172 298	8.4	112.2
1956	144 776	7.0	119.2
1957	116 810	5.5	119.4
1958	180 893	8.5	113.7
1959	199 209	9.5	118.6
1960	158 097	7.5	127.6
1961	128 210	6.1	134.8
1962	108 622	5.0	142.6
1963	108 994	4.9	153.6
1964	77 871	3.4	164.7
1965	92 182	4.3	166.7

(1) *Bulletin de statistique de l'INS* - new series (September, Octobre 1964).

355. In a survey carried out by the Institute of Economic, Social and Pol'tical Research of Louvain University, M. Robert Leroy wrote:

"We know that, compared with neighbouring countries, the Belgian economy is subject to particularly wide variations in its economic situation. As regards unemployment, the serious thing is that these fluctuations find expression in the employment sector, not only through a comparative slow-down of the growth rate but through absolute drops in employment. During the thirteen years under review, employment of male wage-earners (which is most closely linked with unemployment) shows a very slight upward trend: at the end of the period, it had increased by 27,000 i.e. 2.3 %. But this trend evolved in the teeth of very extensive fluctuations in the econo-

mic situation. There were three periods of decline: in 1948-49, the number of workers fell by 73,000; in 1951-53 it fell by 30,000; and in 1957-59 it fell again by 73,000. The final increase of 27,000 seems very small in comparison with these downward movements of the economic situation and the number of unemployed, i.e. an average of over 80,000 fully unemployed.

356. The average figure of 184,000 unemployed does in actual fact cover very wide fluctuations: the unemployment maxima were 234,000 (1949), 246,000 (1952-53) and 199,000 (1959), while the minimum was 116,000 (1957). The part played by the economic situation is therefore considerable."

Similarly, we find that from 1953 to 1964 the number of wage-earners employed evolved in parallel with the quantitative development of the GNP.

The number of wage-earners employed fell off slightly during 1958 and 1959, while the GNP declined in 1958. These parallel movements clearly reflect the fact that the number of employed (and, conversely, the number of unemployed) was dependent on the possible development of production throughout the period from 1953 to 1964.

ITALY

357. This country has long had a high level of unemployment, owing to a large number of factors and notably to the economic underdevelopment of some of its regions.

TABLE 45

Trend in unemployment and industrial activity in Italy

Year	Number unemployed ('000)	% of working population	Industrial activity index (1953 = 100)
1954	1 669	26.7	109.3
1955	1 491	21.5	117.9
1956	1 867	26.9	127.9
1957	1 662	20.3	138.1
1958	1 340	16.3	142.4
1959	1 128	13.8	157.9
1960	846	10.3	182.3
1961	724	8.8	199.7
1962	611	7.5	221.7
1963	504	6.1	241.3
1964	549	6.7	242.3

However, during recent years industrial output has risen very rapidly. The increase in production went hand in hand with an impressive drop in unemployment (see Table 45).

358. From 1953 to 1964 the industrial activity index rose from 100 to 242.3 while the number of unemployed fell from 1,669,000, i.e. 26.7 % of the working population, to 549,000, or 6.7 % of the working population. Thus the reabsorption of the unemployed has depended, first and foremost, on the rise in industrial output and the increase in possibilities of employment.

TABLE 46

Trend in unemployment in the Netherlands

Year	Annual average (in absolute figures)	Number of registered unemployed as a percentage of the non-self-employed working population
1948	39 400	1.8
1949	58 500	2.7
1950	75 200	3.4
1951	87 200	3.8
1952	131 400	5.7
1953	99 800	4.3
1954	70 400	3.0
1955	49 300	2.1
1956	37 300	1.5
1957	47 900	1.9
1958	91 300	3.6
1959	71 300	2.8
1960	44 400	1.7
1961	31 400	1.2
1962	28 500	1.1
1963	29 000	1.1
1964	25 800	0.9
1965	30 400	1.1
1966	39 700	1.4

359. A breakdown of the fully unemployed during periods of economic expansion enables certain conclusions to be drawn:

BELGIUM

360. Table 47 shows that the structure of unemployment during very favourable economic periods is partly

characterized by the large number of older workers unemployed (74.8 % of unemployed males and 47.3 % of unemployed females are less than 5 years below pensionable age); by the large number of long-term unemployed (60.2 % of unemployed males and 37.5 % of unemployed females have been unemployed for 2 years or more); and by the large number of partially skilled or very slightly skilled unemployed (only 14.5 % of unemployed males and 39.6 % of unemployed females are skilled workers).

361. The "least capable" include those who are difficult to fit into the production process for reasons which are inherent in the persons themselves (such as reduced working abilities, character, moral or other traits).

Of all the least capable males 45.8 % are over 50 years old and of this group 51 % have been registered for at least 12 months. The respective figures for females are 30.5 % and 49.1 %.

FRANCE

362. In this connection, it has been shown that in France the combined pressure of both sides of industry tends to result in unemployment insurance being turned to account as an early retirement scheme. This trend is directly opposed to the national interest, with responsibility for the non-workers becoming an increasingly heavy burden on the working population. Analysis of the structure of the unemployed who receive assistance in France shows that it includes a high proportion of older workers. This is a concrete example of correlation, albeit only partial. It implies no judgement of the unemployed person's willingness to find work.

363. For a dynamic employment policy, it should be possible to utilize the unemployment legislation as an instrument for guiding and redirecting the workers. This is found, in particular, in Belgium, where the National Employment Office (ONEM) devotes a great deal of effort to placing workers.

TABLE 47

Breakdown of fully unemployed during a period of economic expansion in Belgium (28 June 1963)

	Male	Female	Total
Number of fully unemployed in the census	44 661	14 270	58 931
By age groups			
Under 20	347 (0.8 %)	472 (3.3 %)	819 (1.4 %)
20-35	3 158 (7.1 %)	3 153 (22.1 %)	6 311 (10.7 %)
35-50	7 738 (17.3 %)	3 895 (27.3 %)	11 633 (19.7 %)
50-65 (60)	33 418 (74.8 %)	6 750 (47.3 %)	40 168 (68.2 %)
By period of unemployment			
Less than 3 months	5 249 (11.7 %)	3 384 (23.7 %)	8 633 (14.6 %)
3-6 months	1 967 (4.4 %)	1 250 (8.8 %)	3 217 (5.5 %)
6-12 months	4 808 (10.8 %)	2 033 (14.3 %)	6 841 (11.6 %)
1-2 years	5 762 (12.9 %)	2 246 (15.7 %)	8 008 (13.6 %)
2 years and over	26 875 (60.2 %)	5 357 (37.5 %)	32 232 (54.7 %)
By degree of capacity			
Normal	6 488 (14.5 %)	5 652 (39.6 %)	12 140 (20.6 %)
Partial	24 132 (54.0 %)	6 611 (46.3 %)	30 743 (52.2 %)
Very slight	14 041 (31.5 %)	2 007 (14.1 %)	16 048 (27.2 %)

Source: National Employment Office: Annual census of the fully unemployed who were seeking work at the end of June 1963.

The number of posts requested and filled through the National Employment Office—which does not, however, hold a monopoly as an employment agency—has developed as follows:

Year	Posts requested	Posts filled	%
1960	234 312	198 164	85
1961	249 219	187 846	75
1962	226 294	164 421	73
1963	191 013	142 688	75
1964	167 251	132 569	80

During this period the number placed included both unemployed persons receiving benefit and persons seeking employment who had registered voluntarily (employed workers who were not receiving benefit and were seeking a different post).

The percentage of posts found for unemployed persons receiving benefits varied from 71 % to 50 % between 1960 and 1964.

364. All these factors prompt the conclusion that an unemployment insurance scheme does not lead to a reduction in the level of employment. When the economic situation is favourable a clearly perceptible drop is observed in the number of unemployed, and the irreducible drop is observed in the number of unemployed, and the irreducible hard core is formed by older workers, workers with reduced capacity, and those who have been unemployed for a long time. (1) These consist almost entirely of men and women who can no longer adapt themselves to production conditions and have no choice but to live on their unemployment benefit while awaiting pension age. This is a social—perhaps medico-social—problem rather than an effect of the unemployment insurance legislation on employment.

365. Table 48 shows the situation in the Netherlands, which is somewhat analogous to that in Belgium.

(1) This subject will be dealt with in detail in Chapter VII.

TABLE 48

Breakdown of unemployed during a period of economic expansion in the Netherlands (end of May 1965)

	Male	Female	Total
Number of unemployed registered at employment exchanges	20 497	3 476	23 973
By age groups			
Under 19	956 (4.7 %)	500 (14.4 %)	1 456 (6.1 %)
19-25	2 289 (11.2 %)	685 (19.7 %)	2 974 (12.4 %)
25-40	5 833 (28.4 %)	818 (23.5 %)	6 651 (27.7 %)
40-50	4 178 (20.4 %)	581 (16.7 %)	4 759 (19.9 %)
Over 50	7 241 (35.3 %)	892 (25.7 %)	8 133 (33.9 %)
By period registered at employment exchange			
Under 1 month	5 940 (29.0 %)	969 (27.9 %)	6 909 (28.8 %)
1-3 months	4 221 (20.6 %)	820 (23.6 %)	5 041 (21.0 %)
3-6 months	3 004 (14.6 %)	530 (15.2 %)	3 534 (14.7 %)
6-12 months	2 049 (10.0 %)	389 (11.2 %)	2 438 (10.2 %)
Over 12 months	5 283 (25.8 %)	768 (22.1 %)	6 051 (25.3 %)
Number of least capable	9 532 (46.5 %)	1 396 (40.2 %)	10 928 (45.6 %)

C - OTHER BRANCHES OF SOCIAL SECURITY

366. Other social security benefits may influence employment: invalidity benefits may influence the general level and family allowances the amount of female labour. It is difficult to quantify these influences, but a calculation for the Netherlands shows that the number of days lost through abuses of the sickness, invalidity and unemployment benefit schemes is relatively very small. Moreover, this number seems to be smaller when the economy is stable than when it is expanding. Nevertheless, it must be stated that invalidity benefits are only granted after an exhaustive medical examination and a procedure which obviates abuses.

Family allowances undoubtedly influence the amount of female labour. However, this influence is difficult to evaluate. If family allowances were not granted, some women might seek employment while others might make do with a lower standard of living. Only specialized surveys could establish the precise correlation.

367. In France the Plan's Manpower Committee has established a pyramid of "marginal manpower" which shows that women form a major reserve force for the working population. Yet the female employment level is higher there than in most developed countries.

A family allowance scheme was introduced in 1938 in order to discourage women from going out to work so that they could look after their children. These allowances were, and still are, the subject of numerous doctrinal and juridical criticisms. From the employment angle alone, it is obviously rather irrational to try to keep women at home when they could help to ease the labour market. In fact, however, the demand for labour is only of secondary importance in those sectors and posts which currently call for female staff. As a survey by the National Institute of Demographic Studies showed in 1963, the main handicap of female labour is its lack of qualifications. However, the range of female employment might be extended following the raising of the school-leaving age and the expansion of employment in the services sector. With this in view, an amalgamation of the "breadwinner's allowance" with the standard family allowance has been envisaged. According to an opinion poll carried out by the National Institute of Statistics in 1958, this would bring some 500,000 women on to the labour market. But such a decision should obviously not be taken solely with an eye to the requirements of the labour market. It implies an ethical appraisal of woman's role in society.

368. The same problem has arisen in Belgium, where an allowance was granted to mothers who did not go out to work. This was discontinued in 1957 and included in the general family allowance scheme, without any evident repercussions on the level of family employment.

IV - Social contributions and inducement to work

369. So far the possible influence of social security on the level of employment has been examined from the point of view of the benefits granted. It may also be helpful to consider whether the amount paid by workers as contributions could discourage them from increasing their productivity. However, not only the social security contributions, but also the level of direct taxation,(1) has to be taken into account here. For the gross wage is reduced by the contributions and the tax withheld, and it is the total amount of these two forms of stoppage which determines the net take-home pay.

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370. Table 49 summarizes the 1953-64 evolution of the average daily earnings of wage-earners and the monthly earnings of salaried employees in relation to, firstly, the social security contributions and, secondly, the tax withheld at source. It will be seen that for wage-earners the contributions withheld have always been larger than the tax, while the opposite applies in the case of salaried employees. This is caused by the proportional nature of the contributions withheld (with a ceiling) and the progressiveness of the tax withheld.

We also note a wittling-down of the wage-earners' net income in comparison with the gross income. In 1953 the net income represented 87.5 % of the gross, while in 1964 it had fallen to 83.9 %. This reflects a comparative increase in the proportion of the gross income assigned as contributions and tax, and is caused by the rise in the average income which has been progressively taxed and the rise in the rates and ceilings of social security.

371. This situation is not liable to reduce a worker's productivity. For while the net wage, as a proportion of the gross income, is decreasing in relative value, it is nonetheless increasing in absolute value, and that is the main point. Furthermore, at its current level the propor-

(1) More precisely, the taxes withheld at source. Any additional tax payable at the end of the financial year depends on whether the taxpayer has any income other than his income from his work, and is considered as a tax on the family income as a whole rather than as a sum which reduces the gross monthly income from work.

tion of wage withheld for social security contributions cannot lead to less inclination to work.

As regards salaried employees, similar conclusions can be drawn. From 1953 to 1964, the ratio of net to gross income fell from 86.2 % to 82.1 %, while the absolute net income rose from 8,187 to 12,432 francs.

The basic factor here is the progressive increase in taxation rather than the growth of the social security contributions.

372. Table 50 summarizes the amounts withheld as contributions and taxes for wage-earners and salaried employees in relation to cheir earnings, for the second quarter of 1964. From this table it can be concluded that, up to a level of around 10,000 francs gross for wage-earners and 9,000 francs gross for salaried employees, the social security contributions continue to be larger than the tax withheld at source. Moreover, the social security contributions remain the same regardless of the number of dependants, while the tax withheld

TABLE 49

Trend in the average daily and monthly earnings of wage-earners and salaried employees in industry, and the social security contributions and tax withheld, in Belgium
(Position for the second quarter of each year)

in Belgian francs per day (wage-earners), per month (salaried employees)

Year	Unmarried wage-earner (industry)			Unmarried salaried employee		
	Average gross daily earnings	Relevant social security contribution	Tax withheld at source	Average gross monthly earnings	Relevant social security contribution	Tax withheld at source
1953	193.90	16.00	8.17	9 495	400	908
1954	195.70	16.64	8.17	9 780	400	975
1955	202.40	17.60	8.50	10 110	400	1 041
1956	213.00	18.05	9.50	10 335	400	1 085
1957	228.60	20.01	10.96	11 150	437.5	1 240
1958	231.70	20.28	11.40	11 555	565	1 284
1959	238.40	20.86	12.56	11 880	565	1 352
1960	246.90	22.22	12.32	12 420	657	1 443
1961	258.40	23.26	13.68	12 740	657	1 512
1962	273.00	24.56	16.40	13 125	657	1 604
1963	295.90	27.38	17.32	14 015	673	1 709
1964	323.60	32.03	19.92	15 140	827	1 881

TABLE 50

Social security contributions payable by workers and tax withheld at source in relation to monthly earnings in Belgium
(Position for the second quarter of 1964)

(Belgian francs)

Gross monthly earnings	Social security contribution payable by the worker	Tax withheld according to number of dependants							
		0 dep.	1 dep.	2 dep.	3 dep.	4 dep.	5 dep.	6 dep.	7 dep.
Wage-earners:									
5 000	495	135	128	75					
6 000	594	238	226	215	150				
7 000	693	365	346	328	292				
8 000	792	498	473	448	398	125			
9 000	876.60	651	618	586	521	456			
10 000	951.60	856	813	770	685	599			
Salaried employees:									
7 000	609	379	360	341	303				
8 000	696	513	487	461	410	158			
9 000	763	683	648	614	546	478			
10 000	788	893	848	803	714	625			
12 000	826	1 283	1 209	1 145	1 018	891	636		
15 000	826	1 861	1 768	1 674	1 488	1 302	930	558	
20 000	826	2 931	2 785	2 638	2 345	2 052	1 466	879	293

at source decreases sharply as the number of dependants increases.

373. To conclude, we can quote the views expressed by M. Frank at the social security seminary in January 1964:

"Has the second redistribution of wage-earners" remuneration in Belgium attained dimensions which endanger the country's economic expansion and, to be more precise, the wage-earners' and salaried employees' interest in increasing their productivity?

The results of our analysis of the marginal effect of wages on disposable income incline us to consider that this is not so, and that the efforts to increase productivity and, in consequence, the workers' income do not appear to be jeopardized by the mechanism for redistributing income.

374. Marginal levels of 70 % to 85 %, and even 64 % for very high earnings, do not seem excessive in a society such as ours. However, in the endeavour to be objective it must be added that between 1948 and 1963 the marginal effects of basic earnings on disposable income developed unfavourably for wage-earners with high earnings (except where they had large families). It would therefore be advisable to ensure that in this field we do not overstep the limits above which the income redistribution mechanism could operate in opposition to the demands of economic progress. But, I must repeat, the danger point does not yet seem to have been reached—far from it."(1)

V - General considerations concerning the effects of financing social security on the demand for manpower. (2)

375. A social security scheme has a certain influence on the demand for manpower. While it is difficult to quantify this influence exactly, it obviously operates through the financing methods.

As regards the form of contributions, the possible methods of financing social security can be classified as follows:

a) Flat-rate contribution system;

b) Contribution assessed as a percentage of earnings; this can be organized:

1. by taking the total wage as the basis of assessment,

2. by fixing upper and lower limits for the wage used for assessment,

3. by taking the earnings fixed by agreement as the basis of assessment,

c) Contribution related to the enterprise's earnings or the value added.

376. The above methods obviously have no influence on the supply of manpower (the material and moral need to find work outweighs the contribution question, and, moreover, the amount contributed by the worker is usually fairly small). However, these methods undoubtedly have certain effects on the demand for manpower.

In the first place, it should be noted that methods *a*) and *b*) entail enterprises' contributions which are more or less proportional to the number and total wages of the workers employed; thus, these methods form a kind of "penalization of employment" since they impose greater burdens on those enterprises whose labour costs have a greater influence on production costs.

377. Thus the above methods induce concerns to modify their production systems so as to reduce the amount of labour employed (even if with method *b*) special measures, such as introducing ceilings or earnings fixed by collective agreement, can mitigate the effects).

When, in particular, we take the total real wages as reference basis, the contribution system given under *b*) —a percentage of earnings—may cause employers to replace skilled staff, with their higher wages, by machinery and, similarly, this system may inhibit the establishment of enterprises in areas where the cost of living, and consequently, the wages level are higher. Moreover, these results become more marked if the contribution percentages are fixed and graded in relation to wage increases.

378. On the other hand, with system *a*) (and with system *b*) if it also involves the introduction of ceilings or earnings fixed by collective agreement) the contributions have a regressive incidence in relation to the value of earnings, and consequently the system may have a negative effect as regards the lower-paid workers.

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(1) *Aspects économiques et financiers de la sécurité sociale* (Economic and financial aspects of social security): Belgian Ministry of Social Security, 1964, pp. 52 and 53.

(2) Demand for manpower: the total hours of work offered by private concerns and public services. This concept covers both the number of persons required and the number of hours of work offered them.

Furthermore, if a contribution is rated in proportion to the number and wage bill of the enterprise's workers, this affects the steady employment of those workers, since it will encourage enterprises to engage or dismiss labour in accordance with the production requirements at any given time.

379. The effects imputed above to systems *a*) and *b*) are important because of the influence of social security charges on production costs; yet these same effects can be ascribed to the wage component of the costs themselves. It is certainly not easy to evaluate the two factors independently of each other but, generally speaking, we can say that social security contributions and wages help to cause the effects in question in so far as they play a part in determining production costs.

On the other hand, the system mentioned under *c*), which makes the contribution dependent on the enterprise's earnings or the value added, can be considered to have no effect on the demand for manpower: some claim, however, that, by allowing a more equitable distribution of the charges in proportion to the individual enterprise's production capacity, this system has a positive effect upon employment.

380. In practice, this last system does not seem to have been actually applied (except in a few cases); moreover, it may be asked what justification can be found for such a system, which is a halfway house between contributions based on the number of workers employed and financing assured with the participation of the public authorities, when there is already a trend towards State backing for part of social security costs, which entails levying via taxation.

In this connection it is worth remarking that the above-mentioned effects of the contribution systems on employment may be mitigated as the process of covering part of social security costs from taxation becomes more widespread, regardless of the levying technique applied.

381. As regards the current situation in the Community concerning the form of contributions, the following should be noted:

(*i*) In Belgium and France contributions are, as a rule, flat-rate for farmers and self-employed persons and related to earnings for workers in other categories, generally with wage ceilings.

(*ii*) In Italy, contributions are flat-rate for self-employed persons and non-self-employed farmers; for the majority of other workers, the contributions are related to the total earnings, except in some branches of activity which have a ceiling (temporarily) or wages fixed by collective agreement.

(*iii*) In Luxembourg, the Netherlands and the Federal Republic of Germany, in most cases the contributions are earning-related and, generally speaking, there are wage ceilings.

382. Another aspect of the influence of financing on employment concerns the solutions which may be adopted to implement the principle of solidarity in social security schemes.

In this connection solidarity means the positive or negative help which any specific category of persons belonging to a specific social security scheme (1)—and within that scheme, to a specific social security agency—gives to the other persons belonging to that agency. Thus, if agricultural and industrial workers belong to the same organization, and if the contributions by the former cover only part of the benefits paid them, the industrial sector shows positive solidarity towards the agricultural sector. Geographical areas may also be taken as a basis, instead of production sectors.

383. Social insurance is, in fact, founded on this principle of solidarity and, in so far as its implementation establishes preferential situations among the production sectors or geographical areas by imposing burdens on some categories and relieving others, the principle obviously influences the demand for manpower in the sectors or areas concerned.

The extent to which the solidarity principle is applied within any given scheme depends, *inter alia,* on the way in which responsibility for the scheme is divided among the administering agencies.

384. In this connection, the following solutions can be envisaged:

1. A single administering agency;

2. Multiple administering agencies based on distribution of the persons covered by economic category or geographical area;

3. Multiple administering agencies on a composite basis taking into account economic categories, geographical areas and, possibly, various enterprises.

(1) By "social security scheme" is meant an organization which, for a certain risk, fixes uniform benefits, or at least their general nature. The "administering agency" is an organization for the application—by means of an autonomous budget—of a specified scheme to all those covered by that scheme, or to some of them, with uniform or differentiated contributions for the various categories covered.

385. The first solution offers the best way of balancing the more economically favoured categories and areas against their weaker counterparts; it therefore reflects the fundamental criterion for social insurance schemes according to which contributions are proportional to the economic capacity of each group rather than to the benefits provided for that group.

The second solution—which is also based on geographical distribution—obviously tends to regulate the sacrifices made by each group according to the benefits provided for that group. But this solution will weaken solidarity, and will be realized only within the framework of the various categories or areas chosen in advance when the system of administering agencies is decided upon.

Owing to the co-existence of criteria which are inherent in the categories, areas and (in the case of major combines) possibly even in enterprises, the last solution divides those covered among such a large number of administering agencies that the difficulties of balancing the various groups are considerably increased.

386. We can thus state that implementation of the solidarity principle has very great repercussions on the demand for manpower when the principle is implemented by the first of the above solutions. The repercussions are less important in the case of the other solutions, based on the criterion of multiple administering agencies: this criterion may, however, be weakened by introducing forms of balancing-out at national level as well.

387. The present situation in the EEC is as follows:

(*i*) In Belgium, the Federal Republic of Germany and Italy, both the centralized and multiple systems are found: in Belgium, wherever a multiple system has been established, it is based on economic or ideological categories, while in Germany and Italy it is based on economic categories or on geographical areas or on both combined;

(*ii*) In France, the general scheme is applied by multiple administering agencies at regional level with balancing arrangements at national level. The special schemes are usually administered centrally;

(*iii*) In Luxembourg and the Netherlands, centralized administration prevails; however, in the Netherlands some benefits are granted through multiple administering agencies but with balancing arrangements at national level.

388. *Financing by the public authorities.* In the six countries, social security is partly financed by the public authorities, via tax revenue.

The effects of financing from taxes obviously depend on the taxation system.

Theorists maintain that taxes on incomes have no influence on price equilibrium. This thesis may appear debatable in some cases—especially as regards corporation tax, which enterprises must take into account in determining their gross profit margins; but we can agree that only taxes on expenditure, some stamp duties and registration fees, "parafiscal" charges equivalent to taxes, and employers' social security contributions are reflected in prices.

389. Fundamentally, all these taxes, charges and contributions, which are imposed on the vendor, form a prime cost component which, in theory, causes a corresponding increase in the selling price of goods and services. In practice, the incidence of taxation is extremely complex—as has already been pointed out, notably in Chapter III. In most cases the indirect taxes are passed on to the consumers to a large extent; but they are not without consequences for the producers and traders. The competitive situation may, in fact, compel these to reduce their profit margin, cut their prime costs or modify their output. Nevertheless, we can say that the two taxation systems have very different effects, one operating mainly upon incomes (direct taxation) and the other mainly upon prices (indirect taxation). This is not without influence on economic equilibrium and, consequently, employment.

390. The effect of the general budget depends mainly on the public revenue structure. The Statistical Office of the European Communities carried out a survey of tax revenue in the six EEC countries which shows that in 1964 the percentage of revenue from taxation on consumption was 56 % in Belgium, 50 % in Germany, 68 % in France and Italy, 40 % in Luxembourg and 41 % in the Netherlands.

391. The effect which partial or complete financing of the social security scheme from taxation has on employment would, in the last analysis, depend on the methods of reform. Any move to switch the funding from wages to business would probably result, *inter alia,* in a slackening in the employers' efforts to increase productivity. The result of switching the funding towards earnings would be to reduce somewhat the supply of manpower, for the reasons explained earlier (less profitability of the productive efforts of persons with high incomes). The economic effects of this form of computation would be slight.

As far as harmonization of social security financing rules within the European Community is concerned, it must be emphasized that use of taxation would have positive results only in so far as the tax systems themselves were harmonized.

VI - Available quantitative data concerning the effects of social security charges on the demand for manpower

392. Wages and indirect charges. Detailed examination of the surveys on wages and labour costs carried out by the European Economic Community in 1959 and 1963 enables the following conclusions to be drawn: (1)

(*i*) There is no correlation between the absolute level of labour costs and the percentage of indirect charges. Consequently, it cannot be said that the prime cost of an hour of work is high when the proportion of indirect charges is also high or that it is low when this proportion is also low.

393. Therefore, social security contributions cannot be dissociated from wages. They increase wage costs but it is advisable to examine the influence of wage costs on prime costs as a whole.

(*ii*) Dispersion of labour costs is generally greater from industry to industry within any one country than from country to country within the same industry.

(*iii*) Dispersion of the percentages of indirect charges is considerably greater from country to country within the same industry than from industry to industry within the same country.

SHARE OF WAGES AND SOCIAL SECURITY CHARGES IN THE VALUE ADDED

394. We have seen that one effect of calculating social security contributions on an earnings-related basis has been to impose a greater burden on the prime costs in those sectors where the proportion of wage costs is high. In this connection, it may be helpful to assess the proportion of the total wage costs found in the value added in certain sectors.

Table 51 presents the coefficients for the "wages" and "employers' social security contributions" in relation to the "value added at factor costs" and the "value added at market prices". These data are established according to the breakdown into 35 branches of industry of the input-output tables of the Statistical Office of the European Communities. They relate to 1959.

395. The coefficients for labour costs/value added at factor costs lend themselves to an examination of the production structure by comparing the proportion of wages and social security charges with the proportion of depreciation and other receipts (including, for instance, the income of self-employed persons and company profits). The coefficients in relation to the value added at market prices show the influence of taxation and pricing policies; by comparison with the preceding coefficients, the coefficients for those branches which receive subsidies will increase while those for branches subject to comparatively heavy indirect taxation (oil, beverages, tobacco) will fall.

It is, moreover, worth mentioning that these coefficients provide only an initial idea of the distribution of labour costs among the various branches of industry. The most significant coefficient in such an analysis is that of the direct and indirect labour costs in the value of the branches' products. This entails assessment of the direct share of labour costs in the products' value and then addition of the indirect share, i.e. the share of labour costs which is already included in the products used by the branches. These assessments have been made by the SOEC and are given in Table 52.

396. From Table 51 two conclusions can be drawn:

(*i*) In all the countries considered, the share of wages and social security contributions varies widely from one branch of industry to another;

(*ii*) On the other hand, there is little fluctuation in the average share of wages and contributions from country to country. It ranges from 48.68 % in Italy to 52.46 % in Germany.

Having shown that the employers' social security contributions cannot be dissociated from the total wage bill, we should examine the incidence of social security as a distortion multiplier additional to the differences in wage costs. Since the employers' contributions are by and large proportional to the wage bill, they will be felt more in those branches where the share of wages in the value added is greatest.

397. Here too, however, it is difficult to measure the impact of social security separately. For there is nothing to prove that wages would not have been different if the employers had paid no social security contributions, and it seems obvious that adoption of another method of financing social security would result in re-balancing the various wage levels. It remains clear that the weight of social security is felt most in the sectors where labour plays the greatest part.

(1) *L'Influence des charges sociales sur le coût de la main-d'œuvre* (The influence of social charges on labour costs) by M. W. Fraeys, in Revue du Travail, August 1965.

398. It may be asked whether the demand for manpower will not be unfavourably influenced by this. The usual basis for fixing social security contributions is the direct wage of the insured persons, even though in many cases this basis is limited by a ceiling. The result is that the biggest contributions towards financing social security come from the enterprises in which labour's share in the value added is the greatest. Seen from such a standpoint, this normal basis for fixing contributions might be considered a disadvantage for highly labour-intensive enterprises and branches, and might penalize them in competition with enterprises or branches which were highly capital-intensive.

In the light of this approach to the impact of social security charges, it has been suggested that preference might perhaps be given to a basis for distributing the charges that took no account of the degree to which labour is concerned in final production. It is therefore understandable that value added has been considered as such a potential basis.

399. Against this line of reasoning, certain arguments could be advanced which would at least make one cautious about accepting its general validity. For instance, the same line of thought could be applied to direct wages

TABLE 51

Share of wages and social security contributions in the value added of the sectors (1)

	Germany		Belgium		France		Italy		Netherlands	
	% VACF(2)	% VAMP(2)	% VACF	% VAMP	% VACF	% VAMP	% VACF	% VAMP	% VACF	% VAMP
1. Agricultural products	15.82	15.29	9.77	9.86	15.11	14.59	16.65	16.65	20.12	21.48
2. Coal	64.90	55.89	103.57	106.89	71.66	68.95	54.97	55.28	80.35	79.38
3. Coke, gas	81.36	68.38	80.37	71.87	24.46	22.53	47.31	43.22	49.21	47.21
4. Ores	72.09	64.04	—	—	50.90	42.34	68.12	69.16	—	—
5. Petroleum and natural gas	47.73	17.14	34.74	12.35	36.28	10.95	19.93	5.06	27.69	12.35
6. Minerals	56.25	50.18	64.62	59.82	62.83	50.31	63.10	57.98	53.97	50.90
7. Meat	47.37	37.80	14.77	13.98	45.55	30.37	34.72	29.40	49.46	54.60
8. Food products	46.48	38.61	45.21	40.47	39.84	33.76	37.34	28.74	48.33	37.54
9. Beverages	48.57	24.89	48.40	30.56	42.61	19.21	36.88	22.48	41.54	20.00
10. Tobacco	39.79	6.26	49.12	10.29	70.06	8.35	71.00	7.07	65.04	13.58
11. Textiles	70.52	60.87	71.90	65.66	76.88	60.44	67.79	63.71	65.23	64.73
12. Clothing	61.82	53.77	60.41	54.87	53.13	44.28	24.62	23.91	69.96	67.30
13. Leather	56.71	50.05	59.77	55.21	61.54	49.89	31.12	29.01	57.53	54.58
14. Wood	55.78	48.90	58.13	53.86	58.45	46.53	36.67	35.26	66.57	60.76
15. Paper	56.86	49.29	65.38	58.96	64.65	51.91	56.84	51.30	46.57	42.01
16. Printing	70.67	63.07	66.50	62.70	69.12	60.26	72.19	69.41	55.96	54.17
17. Rubber	58.91	51.66	84.61	77.00	65.18	54.52	59.02	55.15	66.28	55.88
18. Chemicals	48.59	43.49	63.32	58.30	61.47	48.27	47.83	43.03	48.22	44.41
19. Iron and steel (ECSC)	58.11	49.44	69.38	66.99	52.32	45.14	42.07	38.75	33.60	29.95
20. Iron and steel (non-ECSC)	58.58	51.98	84.43	78.39	69.00	55.99	63.18	59.22	64.98	59.08
21. Non-ferrous metals	45.11	40.33	65.89	63.17	47.89	37.14	60.56	53.98	57.69	51.72
22. Foundry products	72.38	64.49	87.42	82.26	72.80	54.39	75.17	71.75	33.33	29.41
23. Machinery	63.19	58.01	74.47	71.32	72.87	62.12	62.52	60.39	69.16	64.70
24. Electrical machinery	58.53	53.43	78.49	74.00	69.68	56.57	64.05	59.71	51.49	49.16
25. Motor vehicles	54.51	50.86	52.82	49.36	61.00	56.13	50.41	50.27	68.74	64.33
26. Miscellaneous	59.26	54.83	52.35	49.06	60.59	50.15	34.12	32.40	47.78	44.40
27. Construction	69.21	61.99	63.98	59.55	59.59	53.00	68.50	65.13	60.71	56.38
28. Electricity, gas and water	23.51	21.83	41.25	38.89	38.62	34.84	37.63	31.30	29.51	28.18
29. Transport	55.86	51.31	68.08	70.50	62.91	67.37	63.12	69.37	53.61	51.53
30. Commerce	42.29	31.16	30.20	21.87	41.55	31.42	37.09	23.25	36.05	28.18
31. Communications	57.56	57.31	81.00	81.00	90.78	87.62	69.56	67.67	60.42	51.53
32. Banking and insurance	41.16	36.46	52.55	53.22	45.59	38.90	65.69	55.72	54.53	28.19
33. Other service industries	45.75	41.89	37.18	34.25	42.06	38.49	51.74	50.29	57.95	60.31
34. Housing	2.63	2.37	—	—	3.28	2.96	—	—	—	53.50
35. Public administration	90.64	90.12	94.36	94.36	98.33	98.33	96.98	96.98	89.97	55.76
Total	52.46	45.31	50.16	45.22	52.34	44.26	48.68	42.93	51.94	47.43

(1) Input-output tables for the EEC countries: Statistical Office of the European Communities, October 1964.
(2) VACF = value added at factor costs.
VAMP = value added at market prices.

as that developed for social security charges. The former can also affect internal competition relations between enterprises and branches of industry in so far as human labour contributes to value added. This influence is generally accepted, since it is an indispensable instrument for ensuring that the returns from the factors of production, labour and capital, correspond to their cost. So it seems logical to burden the enterprises, by and large, with social security charges in the same way as they are burdened by direct wages because, like direct wages, these charges can be considered as costs connected with the employment of labour. Since this factor "labour" is indissolubly bound up with "man", it may be considered a moral imperative in modern society that remuneration from human labour should be such that the worker who, through no fault of his own, is not able to obtain for himself an income from his work for certain periods should have the necessary income made available to him. Incomes obtained under these conditions must also be considered as costs connected with the utilization of human labour in the production process. Implementation of this imperative is due to a large extent to social security. Hence, these costs must be considered as labour costs.

400. This line of argument is limited to those branches of social security whose object is to cover the risk of loss of income. It does not apply, or applies only to a lesser extent, to the other branches of social security, such as coverage of costs of health care and aid to meet individual needs, such as family allowances. This implies that there is a greater freedom of choice in determining the basis for covering the charges arising from these last objectives. It may appear desirable, for instance for questions of possibilities of employment, to give prefer-

TABLE 52

Coefficients for the direct and indirect labour costs per 1 000 units of final demand for products in 37 sectors

Sector	Belgium	Germany	France	Italy	Netherlands	EEC
1. Agriculture	144.10	213.84	197.42	183.38	217.89	202.37
2. Coal	828.05	486.76	605.49	445.01	646.67	572.96
3. Coke, gas	587.01	529.75	373.79	194.51	402.18	528.00
4. Ores	0	543.64	422.72	598.20	0	467.56
5A. Crude petroleum and natural gas	0	518.65	206.19	194.10	286.39	340.36
5B. Petroleum products	118.63	188.63	123.85	50.88	66.90	118.57
6. Minerals, etc.	374.24	440.46	457.02	491.07	398.72	457.06
7. Meat, etc.	150.98	245.97	224.23	192.72	228.84	228.37
8. Miscellaneous food products	214.40	254.31	247.96	223.40	186.41	244.87
9. Beverages	278.06	276.03	240.15	260.58	205.11	267.68
10. Tobacco	102.35	105.22	106.95	84.40	123.41	104.56
11. Thread, textiles, knitwear	325.63	401.06	416.85	410.15	325.07	419.48
12. Clothing, etc.	358.16	408.74	422.85	311.26	389.71	419.40
13. Leather, etc.	354.45	353.15	412.90	251.20	344.92	366.34
14. Wood	384.10	381.41	381.78	286.94	376.68	374.18
15. Paper	360.21	345.77	408.20	365.42	283.88	374.72
16. Printing, publishing, etc.	446.20	495.11	520.06	541.15	419.52	510.46
17. Rubber products	419.62	360.63	358.47	370.87	289.89	371.87
18. Chemical products, etc.	372.43	360.70	397.58	331.07	265.96	380.76
19. Iron and steel (ECSC)	438.98	395.23	379.12	268.44	236.40	414.42
20. Iron, non-ECSC	476.01	420.52	443.99	418.75	344.62	458.21
21. Non-ferrous metals and metal products	185.30	312.29	283.97	367.42	140.49	311.32
22. Foundry products	549.61	504.04	469.71	468.95	237.85	504.08
23. Non-electrical machinery	521.11	469.11	511.37	491.59	399.04	497.86
24. Electrical machinery, equipment and supplies	484.85	442.39	484.38	456.06	329.38	466.21
25. Shipbuilding	272.27	426.19	463.37	424.04	370.23	454.17
26. Precision instruments, etc.	383.39	446.90	452.50	323.66	320.55	428.72
27. Construction, civil engineering	459.15	529.71	467.57	530.31	399.63	509.81
28A. Electricity	467.18	286.43	357.25	312.30	235.12	326.23
28B. Gas, water	464.72	407.28	415.60	326.13	399.68	423.32
29. Transport	578.88	443.71	559.79	526.10	337.98	502.71
30. Commerce	282.61	372.07	378.40	299.18	319.84	360.37
31. Communications	771.57	559.21	771.01	619.27	560.13	642.68
32. Banking and insurance	529.12	368.21	397.85	549.33	501.83	430.71
33. Other service industries	340.62	420.48	394.77	471.77	493.13	421.13
34. Housing	36.76	198.65	43.10	77.96	99.64	116.07
35. Public administration	943.58	901.22	983.31	969.77	899.73	943.45

ence to a system that weighs less heavily on highly labour-intensive enterprises.

THE INFLUENCE OF THE WAGE CEILING FOR CONTRIBUTIONS

401. The rule here consists in only calculating the contribution to social security on the real wage if the latter is lower than a ceiling fixed by the authorities. In certain countries, notably Belgium, the ceilings differ for the various branches of social security. Furthermore, they are continually being raised. These rises have often followed, generally speaking, the trend in average wages. However, it is necessary to stress that the existence of supplementary schemes limits the effects of the ceiling rule to a certain extent. No general statistical data are available on this head.

402. For the purpose of levying contributions, the ceiling reduces the amount of wages by an amount which varies according to the branch of industry concerned. The ceiling penalizes industries employing much manpower with low wages to the benefit of technologically advanced industries employing fewer and better-paid people. These growth industries are at the same time, in the major industrial countries, those which play a predominant part in the export trade. Accordingly, the ceiling's main economic effect is to act as an aid to the exporting industries.

This involves a problem of competition if the Community countries are not all in a comparable situation. Every Member State except Italy has made provision for ceilings for sickness insurance, some of them also for old-age, unemployment insurance, and family allowances.

403. The following table gives the ceilings for wage-earners in industry and commerce as at 1 January 1967, in Belgian francs.

Furthermore there are special rates and ceilings applicable to salaried employees in Belgium, Italy and Luxembourg.

404. However, these figures do not give an exact idea of the real effect of the ceiling, since the range of wages differs from country to country. Actually, if comparisons are to be useful they must be made on the basis of overall labour costs. As Professor Tinbergen indicated in his study on distortions, at international level the structure of costs plays only a subordinate part. It is the arithmetical sum of wages and social charges which adapts itself to international competition, and the distribution of this sum between the two components is of no importance for that competition.

However, the ceiling indirectly favours increases in high wages. Recent studies have shown that in France the range of wages tended to broaden, between wages for men and women, and between wages for unskilled labourers and skilled workers. From 1956 to 1963 the wages of supervisory personnel and, in general, specialist personnel have grown more quickly than those of ordinary workers. Shortage of manpower leads employers to bid against each other in the matter of wages for supervisory and skilled workers. This process is probably favoured by the limitation imposed by the ceiling on compulsory social insurance contributions.

405. It may be useful to measure the practical effects of the ceiling rule. In this connection, a study carried out in France in three branches of industry shows that the part of the wages above the ceiling and therefore not subject to contributions is 33 % in the chemical industries, 24 % in the food industries, and 18.8 % in the textile industries.

In Belgium, the amount of wages paid which is below the ceiling has alway been less than the total amount of wages paid. The proportion between the first total and the second is a measure of the effect of the ceiling rule, since it indicates the relative importance of the wages below the ceiling.

	Germany	Belgium	France	Italy	Luxembourg	Netherlands
Sickness insurance	135 000	112 800 (cash benefits)	136 680	—	153 300	128 450
Old-age and survivors' insurance	210 000	—	136 680	—	—	194 000
Unemployment insurance	195 000	155 100	582 000	—	—	128 450
Family allowances	—	155 100	136 800	60 000	—	194 000

406. For wage-earners, the proportion varies between 88 % and 97 %, with a distinct tendency to increase since 1960, when the ceilings were considerably raised. The proportion is lower for mineworkers because their average earnings are higher than those of wage-earners as a whole, and, in consequence, a larger part of their earnings lies above the ceilings.

This applies even more to salaried employees. For the earnings of salaried employees are influenced by the salaries of the managerial and supervisory staff of the enterprises, which greatly exceed the contribution ceilings.

TABLE 53

Earnings below ceilings as a percentage of total earnings Schemes for wage-earners, mineworkers and salaried employees in Belgium

Year	Wage-earners	Mineworkers	Salaried employees
1953	92.1	78.1	61.9
1954	91.5	77.7	60.4
1955	91.7	76.8	59.1
1956	87.9	71.7	57.0
1957	91.0	70.8	60.4
1958	92.1	74.5	61.7
1959	91.0	73.9	60.6
1960	95.3	84.5	68.2
1961	96.8	88.6	70.4
1962	96.0	88.0	69.3
1963	94.5	87.2	67.5
1964	93.1	86.8	65.5

Sources: Annuaire statistique de la sécurité sociale 1963, p. 137. *Office national de la sécurité sociale. XX^e rapport annuel - Exercice 1964,* p. 291.

407. The proportion of wage-earners' wages lying above the ceiling varies from industry to industry. For instance, in 1964 the proportion of wages eligible for assessment in the overall wage bill was as follows:

Agriculture, forestry and fisheries	96.7 %
Extractive industries	87.5 %
Manufacturing industries	91.9 %
of which:	
food	96.3 %
chemicals	95.1 %
wood	98.1 %
textiles	96.6 %
electricity, gas and water	71.1 %
smelting, casting, and rolling base metals	83.2 %
manufacture of articles from base metals	91.9 %
Building and construction	95.5 %
Commerce	96.7 %
Hotels and personal services	98.6 %
Public services	98.1 %

408. In Italy, the average earnings below the level of ceilings fixed for family allowances represented 64 % of total earnings in 1953. This proportion decreased regularly down to only 42.2 % in 1961. However, it rose again very strongly in 1962, to 79.8 %. The proportion was always larger for wage-earners than for salaried employees (see Table 54).

TABLE 54

Average daily earnings below the level of maximum earnings for calculating contributions for family allowances, as percentages of total daily earnings in Italy

Year	Wage-earners	Salaried employees	Total
1953	69.5	41.7	64.1
1954	64.5	35.0	57.9
1955	55.0	28.5	49.1
1956	55.7	28.7	49.8
1957	51.7	26.1	45.8
1958	51.7	26.1	45.8
1959	53.0	25.9	46.2
1960	50.8	25.7	46.5
1961	48.4	23.3	42.2
1962	88.1	54.7	79.8

CHAPTER VI

Effects of social security on the price structure

I - General considerations

409. As has already been pointed out, social security, with its dual mechanism for granting benefits and levying financial resources, influences both the absolute price level and relations between prices. In accordance with the general plan given in Chapter I, this chapter will be devoted to the method employed for measuring certain effects which social security has on the price structure, a presentation of the data obtained, and a report on the surveys carried out in this field by the experts.

However, some preliminary comments must be made.

410. It has been said that social security affects prices via benefits and financing. This chapter will deal solely with the latter aspect. Social security benefits influence prices mainly through the changes they bring about in the demand for end products or services. Any examination of this aspect is therefore closely linked with the variations in consumption which have been studied in Chapter IV.

We can, however, observe in this connection that, in any market based on competitive principles, the influence of fluctuations in consumption on prices is first and foremost short-term, causing temporary strains in respect of those goods for which the demand shows a sudden change. On the other hand, especially in the secondary and tertiary sectors, in the long term prices are determined primarily by production costs and by the developments which occur is the production processes, while fluctuations in consumption and, therefore, in the benefits which concern us here, have less effect.

411. A second noteworthy factor is that the question of prices assumes particular importance in the survey carried out by the Committee of experts since the social security financing systems may entail differences in costs within the economic system of the Common Market. It is therefore very important to be able to see whether the social security legislation in force in the six countries does, in fact, produce such differences in costs and whether harmonization of the financing systems would reduce them.

Finally, it must be mentioned that the subject dealt with in this chapter is perhaps the only one of those studied by the Committee of experts for which a survey could be carried out in five of the six EEC countries with uniform data and methods that enabled an initial reply to be given to the question posed, even if, as we shall see, interpretation of the results involves some reservations and uncertainties which cannot be ignored.

412. Before we continue, some qualitative information on the main features of the social security financing systems should be given by defining their effects on the prices of various goods and services. The principal criteria which govern social security financing in the different countries have already been indicated in Chapter III, so at this point we need only give a short summary of the concepts described earlier.

However, it should be pointed out in this connection that the finance is provided by contributions from the enterprises and the insured workers and by the State, which obtains the necessary funds through taxation; these resources are sometimes supplemented by the income from capital which has been accumulated by the bodies administering the social security schemes.

413. It will also be observed that in the social security field the principle of proportionality between contributions and benefits paid is not, in general, respected as regards the individual insured persons. Leaving aside the part provided by the public authorities, these contributions are fixed in such a way as to assure the financial equilibrium of the overall administration, without taking into account the fact that the individuals it covers are subject to varying degrees of risk.

Hence, social insurance is based on a more general principle than private insurance, namely the principle of solidarity, under which financial resources are transferred from certain classes of workers to other classes, from area to area, and from the wealthier economic sectors to the less developed sectors.

414. The factors determining these transfers are the form of organization of the branch of social security concerned, the level of contributions and, finally, the basis of taxation.

As regards the first factor, we have already seen that it is possible to establish a single administering organization for all those protected by a specific form of assistance; or a multiple organization based on the economic sector, type of concern, or geographical area to which the insured persons belong; or a mixed organization based on two or more of the above criteria.

415. The level of contributions may be fixed in accordance with a uniform criterion for all the insured persons covered by a specific administering organization, or it can be suitably differentiated.

Finally, the basis of taxation may be the number of insured persons, wages, wages between maximum and minimum limits, or other elements (for instance the value added, the concern's earnings, etc.).

416. The system by which the State helps in the financing, i.e. by taxation, obviously covers a much wider field than that of the contributions system and, mainly by means of direct taxation, enables burdens to be shared out in accordance with graduated, income-linked criteria.

Since the assistance granted to the social security administrative bodies by the State is usually obtained from the whole mass of tax receipts, it is impossible to ascertain how far it is produced by specific contributions or to determine whether social security financing is mainly provided by direct or by indirect taxation.

However, the State sometimes acquires the necessary resources by means of special taxes. In France, for example, the farmers' scheme is partly financed by levies imposed for the purpose (taxes on cereals, beetroot, tobacco, etc.).

417. A few further comments are needed to round off these general considerations on financing.

Firstly, the most difficult problem, both as regards the contributions proper and the proportion of taxes which the State employs to finance social security, is to define how far these various types of contribution will have repercussions upon the insured persons who play their part in economic life.

In other words... by examining the rules for the various organizations and taxation systems in operation it is easy to ascertain what insured persons are liable to pay the contributions and the taxes linked with social security in the initial phase. But it is very difficult, in fact virtually impossible, to determine whether, after a series of transfers and in view of factor substitution and elasticity of demand, the expense will eventually be borne by other insured persons and other groups.

418. Any examination of the effects of contributions and taxes does, of course, involve a secondary, more limited examination of the fluctuations in prices, which will be influenced to various degrees by the social security financing system, depending on the enterprises' possibilities of passing on to customers the contributions and taxes which they have to pay and also on the consumers' reactions and changes in the production process.

A general study of this problem has been made in Chapter III; the question with which we are now concerned is, however, much more difficult, and we shall see later how it is possible to find an initial approach to the subject and also the very narrow limits within which the conclusions drawn are valid.

419. A second consideration bears more closely upon the question of competition.

In theory, the cost of any product consists of two major elements. The first is directly connected with the market conditions and the producer's abilities (cost of raw materials, net wages, manufacturing processes, etc.), while the second is more dependent on the economic, fiscal and social policies in the country concerned (incentives to producers, customs tariffs, taxation system, social charges, etc.). Theoretically, too, it seems obvious that removal of obstacles to competition should tend to iron out differences in the second class of production costs at national and possibly at international level, as in the Common Market. With regard to the first element, any reductions can be considered as being due to the abilities of the various producers, and such reductions are the leaven of competition.

420. From this aspect, we can say then that distortion of competition occurs when the provisions governing tariffs, taxation, social security charge, etc., vary within sectors or from country to country: that is, when competition is thrown out of balance by obstacles which the producer cannot overcome by direct action.

As in the case of any new concept, it is not easy to give an absolutely complete definition of the term "distortion of competition". However, theoretically we can distinguish two kinds of distortions: general distortions and specific distortions.

421. General distortions affect the entire economy of any country vis-à-vis any other and are due to the fact that the level of a specific type of charge (fiscal, social

security, etc.) is different in the countries in question. Equilibrium is usually restored here by the general trading system and the rate of exchange mechanism, although, for the reasons given, manipulation of the exchange rates is a rather complex operation, especially in the Common Market.

Specific distortions, on the other hand, arise when the charges to which a certain industry is subject differ from the average charges in that industry's economic sector or from those imposed on that industry in another country, without there being any factors to offset this situation. Distortion caused by such a relative inequality in charges cannot be corrected by the exchange mechanism but only by suitable compensatory measures.

422. All the above observations are acceptable in theory. But when it comes to distinguishing in practice between the two cost elements mentioned above, virtually insurmountable difficulties arise. In the first place, it is difficult to draw a distinction between the cost components resulting from the producer's activities and those caused by situations over which he has no control. Again, any cost-increasing provisions that may be introduced do not always influence prices, since their effects may be absorbed to varying degrees in wages or profits. Finally, the interdependence of the various economic sectors causes certain of the second type of costs to be transferred from one sector to another.

The above clearly shows that social security costs are part of the second cost element, and may cause either general distortions by the total amount of the charges they entail or specific distortions in the various sectors according to the procedures by which they are financed.

423. It is also obvious that any study of this subject is bound to be more closely concerned with the specific distortions, and thus with the techniques for financing social security applied in the various countries. For the methods of assembling the financial resources constitute a body of factors which may act as incentives or deterrents to the diverse economic sectors, the different types of enterprise and, finally, the individual enterprises themselves, and which may work to the advantage or disadvantage of the various economic agents.

424. In practice, however, evaluation of the distortion phenomena observed is rather complicated, owing to the difficulties mentioned above. Consequently, since it is impossible to carry out a systematic survey of the cost element that cannot be controlled by the producer, we have contented ourselves with setting out below two different groups of considerations which may provide helpful information in this field. The first group, dealt with in Section II, simply analyses the immediate effects of social security contributions on the overall labour costs, allowing in particular for the close connection found between these costing factors. The second group, dealt with in Section III, is based upon systematic employment of input-output models and aims at determining the price fluctuations induced by hypothetical approximations of the financing systems.

II - First analysis of the effects of social security costs on prices

425. It has already been intimated in the preceding paragraph that social security contributions form only part of labour costs. The latter, in turn, form only part of production costs, and thus of prices.

Two conclusions can be drawn from this:

(*i*) It is impossible to isolate social security costs from labour costs if we wish to make valid comparisons since, for instance, greater social security may correspond with lower wages;

(*ii*) Owing to the economic interdependence of the various sectors, labour costs in any specific sector also affect the cost of raw materials in other sectors.

426. We shall chiefly study the first question. It has been dealt with in some excellent surveys which not only contain general particulars on labour costs and analytical data on social security costs but also provide us with more detailed information, especially as regards:

a) The various classes of workers in each enterprise;

b) The various sizes and types of enterprises within individual sectors;

c) The various types of goods, so that we can determine whether, for example, the social security charges under this or that financing system have a stronger effect on ordinary consumer goods than on luxury goods.

427. The method followed in these surveys is very simple, but considerable difficulties arise in comparing the data obtained in the different countries.

As regards the six EEC countries, the results of very accurate surveys carried out by the Statistical Office of the European Communities are already available. (1) We shall therefore merely refer the reader to these, and give below a few tables from the surveys for 1964 by way of example.

Table 1 summarizes information on 19 industrial sectors, in particular the employers' labour costs per hour, which are divided into the following three classes:

I. Direct wages, bonuses and gratuities, payment for holidays, perquisites;

II. Social security contributions (legal contributions and charges fixed by collective agreement or by contract or paid voluntarily);

III. Take for social purposes, training expenses, other social contributions.

428. The figures given in Table 55 confirm the absence of correlation between the level of social charges and overall labour costs. For example, the charges given in classes II and III for preparing and preserving fish in Italy represent Bfrs. 12.07 in an overall cost of Bfrs. 37.63, while in Germany these two classes represent Bfrs. 7.86 in an overall cost of Bfrs. 49.74. Similarly, for terracotta building materials the charges in the above classes in France total Bfrs. 14.01 for an overall cost of Bfrs. 49.96 while in Belgium the figures are Bfrs. 11.78 and 61.94 respectively.

Again solely as an indication, we give below in Table 56 all the expenses in classes II and III expressed this time as a percentage of overall labour costs: the percentages are given separately for wage-earners and for salaried employees.

429. Scrutiny of the data in Table 56 reveals that for wage-earners the charges in classes II and III represent approximately 20 % of total labour costs in Germany, Belgium and the Netherlands and 30 % in France and Italy, but for salaried employees these charges represent approximately 25 % of total labour costs in France and Italy and 15 % in Germany, Belgium and the Netherlands.

Further conclusions can be drawn from a study of the charges in classes II and III, which in the EEC survey are broken down by type of industry and type of worker. For example, these data may give information about the expenditure on social security contributions, the weight of which varies, both absolutely and percentage-wise, and affects the various types of industry and consequently the various products.

430. Although it must be borne in mind that we are considering only labour costs here, the above clearly shows how incorrect it is to claim that, in general, harmonization of the social security financing systems and a levelling off of social security charges would automatically lead to a reduction in the differences in labour costs. It is easy to verify that, assuming the charges in classes II and III were fixed at 25 % of the wage costs in class I in all the Common Market countries, the total labour costs would show greater differences than those now obtaining, at any rate in a large number of cases.

431. In Table 57 a comparison is made, for the same 19 sectors, of the simple mean differences (2) between the total cost of one hour's labour in five Community countries for the classes shown in Table 55 and for those derived from the foregoing hypothesis: the results show that in 17 of the 19 cases the differences in labour costs increase.

432. Such surveys enable us to make a more detailed analysis of labour costs than in the following section but do not allow for the structural interdependence described above. In order to arrive at a method which takes the two factors into account, it is possible to use an input-output model to provide the coefficients indicating for each sector the labour component of the end products of the domestic market.

These coefficients may be direct, i.e. resulting from the effects of remunerations and contributions on the total costs of each sector, or they may be overall, i.e. they also allow for the labour component of the raw materials used in the production cycle.

433. The procedure for obtaining overall coefficients is known to economic experts, and we feel it is unnecessary to describe it again here. (3)

(1) Statistical Office of the European Communities, *Statistiques sociales,* Nos. 3/1961, 1/1963, 2/1964, 5/1964, 6/1965, 5/1966.

(2) The mean difference is a variability index which is obtained by evaluating all the differences which can be established between the quantities observed and calculating the average of all these differences (Cf. G.U. Yule and M.G. Kendall, *An Introduction to the Theory of Statistics,* London, 1946).

(3) See, for example, G. Lunghini: *La struttura del sistema economico italiano nel 1959* (The structure of the Italian economic system in 1959), in "Industria", No. 2, 1965.

TABLE 55

Hourly labour costs in 19 industrial sectors (wage-earners) - 1964

(average amounts in Bfrs.)

Labour cost components	Belgium	France	Germany	Italy	Netherlands
Preparation and preservation of meat					
I	40.62	36.39	47.73	43.45	43.07
II	9.69	11.84	7.96	18.11	8.84
III	0.06	2.53	1.44	1.38	2.18
Total	50.37	50.76	57.13	62.94	54.09
Preparation and preservation of fish					
I	33.37	27.05	41.88	25.56	38.79
II	8.15	8.52	6.35	11.27	6.07
III	0.39	1.58	1.51	0.80	0.15
Total	41.91	37.15	49.74	37.63	45.01
Knitted goods					
I	32.42	31.89	44.19	27.23	31.61
II	7.12	9.75	6.72	11.88	4.60
III	0.14	2.25	1.03	2.72	1.60
Total	39.68	43.89	51.94	41.83	37.81
Ready-made clothing					
I	30.71	29.02	42.43	28.35	27.71
II	6.85	8.66	6.30	12.35	4.27
III	0.13	2.23	1.37	2.95	1.88
Total	37.69	39.91	50.10	43.65	33.86
Pulp, paper and paperboard					
I	42.04	35.77	47.56	33.66	42.95
II	9.53	11.35	7.76	14.96	8.05
III	0.48	2.51	0.97	2.08	1.26
Total	52.05	49.63	56.29	50.70	52.26
Printing					
I	46.00	56.12	59.53	52.74	49.49
II	10.23	15.34	8.58	20.13	9.85
III	0.54	5.05	1.75	4.44	3.49
Total	56.77	76.51	69.86	77.31	62.83
Tanning and finishing of hides and skins					
I	43.23	35.99	49.96	34.58	43.61
II	9.92	11.75	8.13	15.20	7.69
III	0.48	2.29	0.69	1.66	0.51
Total	53.63	50.03	58.78	51.44	51.81
Plastics processing					
I	41.22	37.92	47.23	32.74	37.59
II	9.81	11.83	7.32	14.44	6.79
III	0.49	2.70	0.96	1.49	0.90
Total	51.52	52.45	55.51	48.67	45.28
Terracotta building materials					
I	50.16	35.95	54.87	33.40	46.80
II	11.59	11.85	8.66	15.16	8.59
III	0.19	2.16	0.69	0.57	1.02
Total	61.94	49.96	64.22	49.13	56.41

TABLE 55 (continued)

Labour cost components		Belgium	France	Germany	Italy	Netherlands
Non-ferrous metal basic industries						
I		57.70	45.78	57.71	45.50	53.11
II		13.44	14.69	10.79	18.94	9.51
III		3.32	4.44	1.93	2.04	1.31
	Total	74.46	64.91	70.43	66.48	63.93
Manufacture of metal products						
I		48.16	39.05	55.92	36.72	47.09
II		12.20	12.63	9.25	16.45	8.56
III		0.44	2.67	1.57	2.34	2.33
	Total	60.80	54.35	66.74	55.51	57.98
Metal construction work						
I		51.29	40.06	61.48	39.15	48.85
II		13.47	13.22	10.24	17.46	9.00
III		0.45	2.81	2.07	2.82	2.51
	Total	65.21	56.09	73.79	59.43	60.36
Springs						
I		44.30	38.87	52.83	37.64	—
II		10.90	12.34	7.92	16.32	—
III		0.02	2.33	1.37	1.10	—
	Total	55.22	53.54	62.12	55.06	—
Nuts, bolts and screws						
I		46.03	38.09	51.91	33.31	44.62
II		11.28	12.01	8.35	15.08	7.68
III		0.59	2.61	1.36	1.77	1.55
	Total	57.90	52.71	61.62	50.16	53.65
Hand and agricultural tools						
I		45.25	38.52	57.00	34.37	—
II		11.39	12.51	8.96	15.69	—
III		—	2.44	1.26	1.41	—
	Total	56.64	53.47	67.22	51.47	—
Metal containers and packing materials						
I		43.51	37.99	47.99	32.88	46.29
II		10.43	12.16	8.56	14.80	8.08
III		0.39	2.71	0.97	1.25	2.70
	Total	54.33	52.86	57.52	48.93	57.07
Metal furniture						
I		43.72	38.47	54.11	34.82	44.62
II		10.28	12.13	9.05	15.75	8.48
III		0.39	2.48	1.56	2.58	1.67
	Total	54.39	53.08	64.72	53.15	54.77
Agricultural machinery and tractors						
I		51.56	40.67	56.72	38.60	44.01
II		11.87	13.24	9.47	16.26	8.22
III		0.47	2.74	2.00	2.42	1.08
	Total	63.90	56.65	68.19	57.28	53.31
Manufacture and repair of aircraft						
I		57.51	54.55	54.77	51.11	—
II		12.81	16.18	9.08	19.63	—
III		1.21	5.62	4.22	3.27	—
	Total	71.53	76.35	68.07	74.01	—

TABLE 56

Charges in classes II and III expressed as a percentage of total labour costs in 19 industrial sectors in the EEC countries - 1964 (Wage-earners and salaried employees given separately)

Industry	Belgium		France		Germany		Italy		Netherlands	
	WE	SE	WE	SE	WE	SE	WE	SE	WE	SE
Preparation and preservation of meat	19	12	28	24	16	16	31	26	20	16
Preparation and preservation of fish	20	16	27	23	16	12	32	25	14	13
Knitted goods	18	14	27	24	15	13	35	26	16	14
Ready-made clothing	19	13	27	24	15	13	35	26	18	14
Pulp, paper and paperboard	19	15	28	24	16	14	34	25	18	14
Printing	19	14	27	23	15	13	32	23	21	15
Tanning and dressing of hides and skins	19	14	28	23	15	12	33	24	17	12
Plastics processing	20	14	28	23	15	13	33	25	17	13
Terracotta building materials	19	15	28	24	15	13	32	25	17	16
Production and initial processing of non-ferrous metals	22	18	29	25	18	18	32	24	17	14
Production of metal articles	21	14	28	24	16	15	34	25	19	17
Metal construction work	21	14	29	24	17	15	34	26	19	15
Springs	20	14	27	22	15	13	32	25	—	—
Nuts, bolts and screws	21	16	28	24	16	15	34	25	17	14
Hand and agricultural tools	20	15	28	21	15	14	33	25	—	—
Metal casks and packing	20	14	28	25	17	14	33	24	19	24
Metal furniture	20	14	27	23	16	14	34	26	19	17
Agricultural machinery and tractors	19	14	28	24	17	16	33	24	17	12
Aircraft construction and repairs	20	17	29	26	20	14	31	24	—	—

Source: Statistical Office of the European Communities, *Statistiques sociales*, No. 5/1966.

For an example, reference should be made to the table, "Coefficients for the direct and indirect labour costs per 1,000 units of final demand for products in 37 sectors", (1) given in Chapter V, which shows the overall coefficients for the EEC countries, and to the 1959 interindustry economic tables, divided into 35 production sectors.

434. By means of the coefficients in the table, information can obviously be obtained regarding labour costs, and consequently some idea of the effects of any variations in social security charges on labour costs, and hence on production costs.

This method will not be discussed further since, as will be seen, the method given in the following Part III makes it possible to gauge the effects of social security charges more accurately.

However, these coefficients deserved mentioning because they can be a quite useful instrument, especially for rapid assessments of variations in labour costs.

(1) In this table, the sectors considered number 37 because two of the initial 35 have been subdivided.

TABLE 57

Simple mean differences between the total cost of one hour's work in 19 industrial sectors in five EEC countries

Industries	A	B
Preparation and preservation of meat	6.30	6.64
Preparation and preservation of fish	6.51	11.27
Knitted goods	6.49	8.93
Ready-made clothing	7.69	8.25
Pulp, paper and paperboard	2.98	9.03
Printing	10.95	8.77
Tanning and finishing of hides and skins	3.94	9.83
Plastics processing	4.85	8.40
Terracotta building materials	8.43	14.56
Non-ferrous metal basic industries	5.31	9.52
Manufacture of metal products	6.01	12.37
Metal construction work	8.24	14.61
Springs	4.32	11.11
Nuts, bolts and screws	5.62	11.65
Hand and agricultural tools	8.40	16.25
Metal containers and packing materials	4.28	10.00
Metal furniture	4.98	11.62
Agricultural machinery and tractors	7.40	12.18
Manufacture and repair of aircraft	4.55	4.31

A - Simple mean differences calculated from the cost of one hour's work as given in Table 55.

B - Simple mean differences calculated from the cost of one hour's work on the hypothesis that the charges in classes II and III in all the EEC countries are reduced to 25 % of the wage costs in class I (allowing for the ratio between the mean of the total costs resulting from the special hypothesis applied and the mean of the initial total costs).

III - Survey on the basis of the input-output tables for the EEC countries

435. It has already been stated that one of the main aspects of this study consists in seeing whether harmonization of the social security schemes in the six countries could help to approximate prices as an indirect index of a reduction in distortions.

An attempt will be made to answer this question by means of the method described below, whose application forms the most important of the investigations carried out in this study to ascertain the effects of social security on prices. However, two reservations must be made at the outset.

436. Firstly, as will become more evident later, no full examination of all the repercussions and final effects of variations in labour costs can be made with this method, mainly because the scope of factor substitution and consumers' reactions are not taken into account.

Secondly, owing to the lack of detailed price statistics, no systematic conclusions can be reached for the various industries considered.

437. As already intimated, the simplest way of determining the effect of any reform of the contribution system on the prices of various products is obviously to evaluate the variations in labour costs in the various sectors resulting from specific hypotheses for reform of the financing methods. However, while providing some useful information, this procedure has the drawback of not allowing for possible subsequent changes in the prices of the products owing to fluctuations in the costs of the goods used in the production process. For, since the enterprises in one sector obtain these goods from other production sectors which participate in the same social security scheme, they are also, to varying degrees, subject to the effects of reforms in the contribution system.

438. In order to overcome this drawback and obtain an evaluation which takes these complex factors into account, we can adopt the method described below, which employs the input-output tables now available for all the EEC countries. This method is outlined in an article in the "Revue internationale d'actuariat et de statistique de la sécurité sociale" (1), to which the reader should refer for fuller details.

However, in order to get a general view of the method, let us consider an input-output table of the usual form, consisting of a number of columns (input) and lines (output) for the various production sectors, supplemented by columns for the data on the end-product sectors (consumption, investments and exports) and lines for the data on wages and salaries, direct taxes, the employers' and workers' contributions, indirect taxes, capital earnings and depreciations.

439. Let us also assume that we determine the "distribution coefficients", i.e. the ratio between the value of the sales from each production sector to the other sectors and the value of the production for each line.

Finally, let us assume that we also include in the values for wages and salaries, employers' and workers' contributions, and direct and indirect taxes, any changes which allow for certain hypotheses concerning variations in the social security financing system and the effects of those variations on the said values, at least in the initial stage.

440. Assuming that the various quantities produced remain constant, the values which the output of the various sectors would acquire under the new hypotheses can be ascertained by a series of equations. Then, by comparing the values obtained with the corresponding values obtained from the first table employed in the calculations, it is possible to determine for each sector price variation indices which may be indirectly related to the various goods or services produced by those sectors.

Naturally, the greater the number of factors shown in the input-output table on which the calculations are based, the more significant such a method will be. But even when the table is very detailed, the conclusions drawn regarding the prices of the various goods and services will be purely indicative.

441. It must also be pointed out that the process enables us to determine only the so-called "potential" variations in price, since any increase or reduction in production costs as a result of changes in the social security financing system will obviously be accompanied by a whole series of reactions which, owing to factor substitution and consumers' reactions, lead to an equilibrium that is difficult to forecast. However, these "potential" variations form a significant index for determining which sectors will encounter difficulties or will benefit as a result of the changes envisaged for the financing system.

442. Finally—as the following comments will show more clearly— use of the method described entails cer-

(1) M.A. Coppini, *Etude quantitative des conséquences découlant des divers critères adoptés pour le financement d'un régime de sécurité sociale* (Quantitative study of the consequences of the various criteria adopted for financing a social security scheme). Revue internationale d'actuariat et de statistique de la sécurité sociale, No. 9, 1963.

tain assumptions as to the effects and initial repercussions which may occur owing to changes in the social security financing system. These assumptions may, of course, vary extremely, but they will often have to be adopted unsupported by previous experience from other sources and, consequently, will have to be considered as working hypotheses. On the practical level, the limitations of the data on which the input-output tables for the six countries have been based restrict the potential range of the assumptions; however, it will be seen that, despite these limitations, the method adopted is undoubtedly more effective than the simple comparisons of labour costs as described above.

443. We shall now examine the problems which arise when this method is applied to the EEC.

Firstly, the Community organizations concerned were requested to provide the most recent and most detailed tables for the six countries. Tables were received for 65 sectors in Belgium, France, Italy and the Netherlands, and 35 sectors in Germany; no economic tables by sector were available for Luxembourg. The year 1959 was taken as reference year and, although later or more detailed tables were available for some countries, we decided to accept the above material as a basis so that the data should be sufficiently homogeneous.

However, in order to obtain comparable results it was necessary to rearrange the 65 sectors of the Belgian, French, Italian and Dutch tables into 35, so as to provide uniform tables for both those countries and Germany.

444. We then examined the matrices. (1) No special difficulties arose here, except that the line for "indirect taxes on products sold, less subsidies" and the amounts of those subsidies had to be rearranged in order to obtain the figures for these indirect taxes. Since overall figures for the 1959 subsidies were available for each country, (2) this problem was solved by dividing the figures among the 35 production sectors in proportion to be current indirect taxation, after reintegrating any negative values.

In addition, as we have said above, it was necessary to adopt certain assumptions for the *possible initial repercussions on prices—the only ones which were taken into consideration*—of the changes in the social security financing system in any given country: in particular, it was agreed that:

a) Variations in direct taxes and the contributions of persons in paid employment and self-employed persons do not affect prices;

b) Variations in indirect taxes and employers' contributions do affect prices.

445. These assumptions call for some explanation. Meanwhile, it seemed reasonable to assume that, under normal economic circumstances, the employers' contributions and the indirect taxes on production, which represent costs for the various goods and services, mostly have repercussions on prices in the long run unless, as we have mentioned on several occasions, factor substitution or consumers' reactions occur which lead to elimination of the marginal expenditure that has, of necessity, been ignored.

It also seemed reasonable to assume that direct taxes, precisely because of their general nature, have no or only slight repercussions on prices, and thus nearly all of them will affect the incomes concerned.

446. On the other hand, doubts arise as regards the contributions of persons in paid employment and of self-employed persons—particularly those of the latter, which are simultaneously contributions by employer and employed. However, no solution could be found other than that given above, since these elements are included in the remuneration of employed persons and in the other incomes, and cannot be separated from them.

The above conclusions do not, of course, have any absolute value, and under some economic conditions may be confuted. Moreover, the hypotheses in question are the only ones possible with the material at present available, and thus serve mainly as examples to illustrate the method described.

447. The various hypotheses on the financing methods were formulated thus.

Taking into account once again that our aims were purely indicative, when selecting these hypotheses we have sometimes ignored the fact that in some cases they may deviate from the current situations, just as we have ignored the fact that some of them may be difficult to apply in the economic context of certain countries. At all events, a very wide range of possible hypotheses has been examined, and these are described below in three groups.

A - COVERING 40 % OF THE SOCIAL SECURITY CHARGES FROM TAXATION

448. A.1. *Covering 40 % of the overall charges from taxation, with the consequent additional burden for the State financed by indirect taxes*

(1) For information on the items included in the matrices, reference should be made to the latter.

(2) Belgium: Bfrs 6 600 m.
France: FF 4 170 m.
Germany: DM 1 600 m.
Italy: Lit. 240 000 m.
The Netherlands: Fl 494 m.

a) It is assumed that the total employers' and workers' contributions are reduced to 60 % of the overall charges;

b) It is agreed that the additional receipts to be obtained by taxation, equal to the reduction referred to in *a*), will be provided by increasing current indirect taxes by a proportional amount.

Consequently, on the basis of the hypothetical repercussions mentioned in *444* above, and in connection with the subdivision of the data in the outermost lines of the available matrices, only the employers' contributions have been reduced in accordance with *a*), and the figures in the lines for the indirect taxes have been increased.

449. A.2. *Covering 40 % of the overall charges from taxation, with the consequent additional burden for the State financed by a value-added tax*

Here again, it is assumed that the total employers' and workers' contributions are reduced to 60 % of the overall charges.

Furthermore, it has obviously been necessary to assume that the receipts from the value-added tax are equal to the total reduction made in the contributions from the employers and workers. Consequently, only the employers' contributions have been reduced, and a line showing the figures for the value-added tax has been introduced.

450. A.3. *Covering 40 % of the overall charges from taxation, with the consequent additional burden for the State financed by direct taxes*

It is assumed that the total contributions from employers and workers are reduced to 60 % of the overall charges.

We have presumed that the additional funds to be obtained through taxation can be procured by increasing the current direct taxes by a proportional amount.

Consequently, only the employers' contributions have been reduced.

451. A.4. *Covering 40 % of the overall charges from taxation, with the consequent additional burden for the State financed by direct taxation, and allocating the balance to be raised by contributions on a uniform basis for all sectors, with two-thirds payable by the employers and one-third by the workers*

It is assumed that the necessary funds would be obtained in the following manner:

a) 40 % employers' contributions in proportion to the salaries and wages paid;

b) 20 % by workers' contributions, in proportion to the salaries and wages received;

c) 40 % by taxation, maintaining current receipts from indirect taxes and increasing direct taxation in proportion to current direct taxes until the required amount is obtained.

Consequently, only the employers' contributions have been changed.

B - INCREASING THE CHARGES TO 25 % OF NATIONAL INCOME AND INCREASING THE PART FINANCED BY TAXATION

452. B.1. *Covering from taxation 40 % of the overall charges, which are increased to a sum equal to 25 % of national income; financing the consequent additional burden for the State by direct taxation; and allocating the balance to be raised by contributions on a uniform basis for all sectors, with two-thirds payable by the employers and one-third by the workers*

It is assumed that the necessary funds would be obtained as described in hypothesis A.4.

Consequently, only the employers' contributions have been changed.

453. B.2. *Increasing the overall charges to a sum equal to 25 % of the national income and financing the consequent additional charges by a proportional increase in direct and indirect taxes*

Consequently, the figures in the line for indirect taxes are increased as required.

C - COVERING 10 % OF THE OVERALL CHARGES FROM TAXATION AND PASSING THE CHARGES WHICH ARE NO LONGER FINANCED FROM TAXATION ON TO THE EMPLOYERS' AND WORKERS' CONTRIBUTIONS IN PROPORTION TO THE CURRENT CHARGES

454.

a) All the employers' and workers' contributions are assumed to be 90 % of the overall charges, and their present relative shares maintained;

b) The funds to be collected by taxation are assumed to be obtained by proportional variations in current direct and indirect taxes.

Consequently, the figures for the employers' contributions and indirect taxes have been changed.

455. It seems expedient here to provide some further information on the calculations.

Firstly, in the case of each of the hypotheses, whenever changes in contributions are involved they are assumed to result from appropriate modifications of the relative shares, with any limits imposed on basic contributions remaining unchanged: thus, there is no need to make allowance for whether or not the systems examined include ceilings.

456. Before these operations were carried out, a certain amount of information on 1959 had to be found in respect of each country. This is described below, together with the sources from which it was taken.

a) For the amount of social security charges to be used in the operations in view of the aims of this survey, we have taken the total receipts of the bodies responsible for social security in the various countries. These data are shown in Tables 14 *et seq.* in Chapter I of this report.

b) The data concerning the share of indirect taxation in providing the overall State revenue, comprising indirect (1) and direct taxes, have been taken from the Community General Statistical Bulletin.

c) The percentage which employers' and workers' contributions constitute of the total receipts of the social security bodies (2) has been taken from Tables 14 *et seq.*, mentioned above.

d) Similarly, the data on the share of the State and public organizations in providing the total receipts of the social security bodies (3) have been taken from the same Tables 14 *et seq.*

e) In the calculations for hypothesis A.2, the value added used has been the value added at factor cost, which it has been possible to extract directly from the input-output tables.

f) The value taken for the production of each sector has been the value at exworks prices, which could also be extracted directly from the input-output tables.

g) The national income for each country, as employed in the calculations for hypotheses B.1. and B.2, has been obtained from the input-output tables by deducting depreciation from the value added at factor cost.

h) To convert the national currencies into Belgian francs and *vice versa,* we have used the official exchange rates for 1959 as fixed by the competent monetary authorities. (4)

457. On the basis of the elements described, the preliminary calculations were carried out, that is to say, the outermost lines of the matrix were determined for the various hypotheses. Table 58 gives the overall values of the initial vectors constructed for each of the hypotheses considered.

458. Finally, the following operations were carried out in respect of each country:

A. Conversion of the values of the tables, expressed in the national currencies, into values expressed in a uniform currency (Belgian francs).

B. Calculation of the table for the distribution coefficients.

C. Calculation of the inverse table for the distribution coefficients (in other words, the reciprocals of these coefficients).

D. Determination of the new production figure for each sector and for each taxation hypothesis.

E. Determination of the variation percentages observed in each sector between the new production figure as calculated and the production figure obtained from the basic table (*percentages of the gross variations in prices*).

F. Calculation of the above variation percentages corrected for general price variations (*percentages of the net variations in prices*).

459. As regards the last calculation it should be mentioned that, under the hypotheses formulated, the total output of all the sectors, i.e. the total national production, may differ to some extent from the total calculated from the basic table.

The ratio between these two figures can be taken as an index of the general variations in price levels. It goes without saying that these general variations can subsequently be entirely or partially offset by fluctuations in the exchange rates of the various currencies. Therefore, in the following instances and for any other applications of this method, the percentages of the variations in the different sectors will be calculated with due allowance for the effect just mentioned.

460. To complete this stage of operations, the table for the technical coefficients and the inverse table (i.e., the reciprocals) for those coefficients were also calculated, although this was not necessary for applying the method described.

These last two tables, as well as those mentioned under A, B and C, have been set out in a working paper and are therefore available in the Commission's departments to anyone who is interested in this problem, while Tables 59 to 72 give the percentages of the gross and net variations in prices for each hypothesis.

To assist the reader, the tables are preceded by a list of the 35 production sectors.

All these calculations, representing over 600,000 operations, were carried out with an IBM 7090 computer, which was kindly made available by the University of Pisa.

(1) Belgium, 59.6 %; France, 72.1 %; Germany, 62.2 %; Italy, 70.2 %; Netherlands, 45.3 %. See Statistical Office of the European Communities, *General Statistical Bulletin,* No. 12, 1963 (pp. 91-92).

(2) Belgium, 67 %; France, 87 %; Germany, 77 %; Italy, 84 %; Netherlands, 80 %.

(3) Belgium, 25 %; France, 5 %; Germany, 15 %; Italy, 6 %; Netherlands, 9 %.

(4) See Istituto Centrale di Statistica, *Annuario statistico italiano,* 1960, Rome 1961, p. 294.

TABLE 58

Total value of the initial vectors and the final vectors for each of the hypotheses considered

Elements	Initial vectors	Vectors for the various hypotheses						
		A 1	A 2	A 3	A 4	B 1	B 2	C
Belgium								
Employers' contributions	23 600	21 134	21 134	21 134	28 934	42 630	23 600	31 701
Indirect taxes on the products sold	40 540	51 380	51 380	40 540	40 540	40 540	60 989	34 073
France								
Employers' contributions	239 078	164 882	164 882	164 882	135 672	202 869	239 078	247 323
Indirect taxes on the products sold	418 172	536 883	536 883	418 172	418 172	418 172	539 294	430 401
Germany								
Employers' contributions	163 681	127 529	127 529	127 529	188 037	252 752	163 681	191 324
Indirect taxes on the products sold	405 557	523 095	523 095	405 557	405 557	405 557	506 173	390 941
Italy								
Employers' contributions	144 300	103 071	103 071	103 071	67 906	121 818	144 300	154 607
Indirect taxes on the products sold	172 934	230 654	230 654	172 934	172 934	172 934	267 550	177 701
Netherlands								
Employers' contributions	32 884	24 666	24 666	24 666	28 914	40 784	32 884	36 999
Indirect taxes on the products sold	39 143	61 520	61 520	39 143	39 143	39 143	52 614	39 461

461.

PRODUCTION SECTORS

1. Agricultural products (including wine), forestry and fishery products
2. Coal and other solid fuels
3. By-products of coal (coke, gas)
4. Iron ore and non-ferrous metals
5. Crude and refined petroleum (including distribution), natural gas
6. Mineral products, products with a non-metallic mineral base (cement, glass, etc.)
7. Meat (including preserved meat), milk products, oils and fats (animal and vegetable)
8. Miscellaneous foodstuffs
9. Beverages
10. Tobacco
11. Thread, fabrics, knitted goods
12. Clothes, made-up textile goods, carpets, furs, pelts
13. Leather, leather goods (excluding clothes), footwear
14. Wood, wooden and cork goods (including furniture)
15. Paper, paperboard and articles thereof
16. Products of the printing, publishing and allied industries
17. Rubber and asbestos articles
18. Chemical products, man-made fibres, plastic and synthetic products
19. Iron and steel products covered by the ECSC Treaty
20. Iron and steel products not covered by the ECSC Treaty, metal articles and furniture (excluding machinery)
21. Metals and non-ferrous metal products
22. Foundry products
23. Non-electrical machinery, railway equipment
24. Electrical machinery, apparatus and fittings
25. Shipbuilding, motor vehicles and engines
26. Optical and precision instruments, products of miscellaneous industries, recovered waste products
27. Buildings and civil engineering works
28. Electricity, gas, compressed air, steam, water supply
29. Transport and ancillary activities
30. Commercial services
31. Communications
32. Banking and insurance
33. Other services
34. Services connected with housing
35. Public administration and related services.

TABLE 59 - HYPOTHESIS A 1

Percentages of gross price variations in each sector of production

(Payment out of tax revenue of 40 % of overall outlay and coverage of the additional sums to be paid out of tax revenue by indirect taxation)

Sector	Belgium	France	Germany	Italy	Nether-lands
1	1.3	0.9	0.6	...	1.9
2	0.1	— 2.6	2.1	— 1.0	— 2.3
3	0.5	— 1.2	2.2	0.8	0.1
4	0	2.3	1.3	— 3.0	0
5	8.3	13.8	6.8	15.2	9.6
6	0.8	2.9	2.1	— 0.6	1.8
7	1.2	2.2	1.8	0.6	2.2
8	1.2	1.7	2.2	1.9	3.9
9	6.4	10.2	9.3	6.0	20.6
10	16.2	22.0	19.4	26.6	31.9
11	0.8	2.0	2.0	— 1.0	— 0.3
12	1.0	2.2	2.2	— 0.2	0.3
13	0.9	2.4	1.9	0.3	1.2
14	1.0	2.6	2.1	— 0.8	1.8
15	1.1	2.1	2.1	0.4	2.4
16	0.6	1.2	1.8	— 1.6	0.6
17	1.0	1.8	1.9	— 0.5	2.9
18	1.0	2.8	1.9	1.1	1.6
19	0.4	1.2	2.2	0.3	2.6
20	0.6	2.0	2.0	— 2.4	2.0
21	0.3	2.8	1.6	— 0.2	0.9
22	0.4	3.4	1.8	— 1.7	2.3
23	0.4	1.4	1.5	— 2.0	1.3
24	0.5	2.4	1.6	— 1.1	0.8
25	0.7	0.7	1.4	— 1.8	1.2
26	0.7	1.8	1.3	— 0.4	1.8
27	0.9	1.2	1.9	— 1.6	1.7
28	0.9	1.1	1.7	3.5	1.1
29	1.0	— 1.1	1.2	— 1.4	0.7
30	1.9	2.3	3.7	5.6	2.3
31	— 0.1	— 1.9	— 1.2	— 1.9	— 1.3
32	0.4	1.8	2.4	2.9	— 0.7
33	1.8	1.0	1.7	— 0.2	0.7
34	0.1	2.6	2.5	0.1	1.4
35	— 0.5	— 7.4	— 2.9	— 3.3	— 4.0
General price variation	— 1.3	1.7	2.1	1.0	2.0

TABLE 60 - HYPOTHESIS A 1

Percentages of net price variations in each sector of production

(Payment out of tax revenue of 40 % of overall outlay and coverage of the additional sums to be paid out of tax revenue by indirect taxation)

Sector	Belgium	France	Germany	Italy	Nether-lands
1	0.1	— 0.8	— 1.5	— 1.0	— 0.1
2	— 1.2	— 4.3	...	— 2.0	— 4.2
3	— 0.7	— 2.8	0.1	— 0.2	— 1.8
4	0	0.5	— 0.8	— 4.0	0
5	6.9	11.9	4.6	14.0	7.5
6	— 0.4	1.2	...	— 1.6	— 0.2
7	— 0.1	0.5	— 0.4	— 0.4	0.2
8	— 0.1	...	...	0.9	1.9
9	5.1	8.4	7.0	5.0	18.3
10	14.7	19.9	16.9	25.3	29.3
11	— 0.5	0.3	— 0.1	— 2.0	— 2.3
12	— 0.2	0.5	...	— 1.2	— 1.7
13	— 0.4	0.7	— 0.3	— 0.7	— 0.8
14	— 0.2	0.9	— 0.1	— 1.7	— 0.2
15	— 0.1	0.4	— 0.1	— 0.5	0.4
16	— 0.6	— 0.5	— 0.3	— 2.6	— 1.4
17	— 0.3	0.1	— 0.3	— 1.4	0.9
18	— 0.3	1.1	— 0.3	0.1	— 0.4
19	— 0.8	— 0.5	...	— 0.7	0.6
20	— 0.6	0.3	— 0.1	— 3.4	...
21	— 1.0	1.0	— 0.5	— 1.1	— 1.1
22	— 0.8	1.7	— 0.3	— 2.7	0.3
23	— 0.9	— 0.3	— 0.6	— 2.9	— 0.7
24	— 0.7	0.7	— 0.6	— 2.1	— 1.2
25	— 0.6	— 0.9	— 0.7	— 2.7	— 0.8
26	— 0.6	0.1	— 0.8	— 1.4	— 0.2
27	— 0.3	— 0.5	— 0.2	— 2.5	— 0.3
28	— 0.4	— 0.6	— 0.4	2.5	— 0.9
29	— 0.3	— 2.7	— 0.9	— 2.4	— 1.3
30	0.6	0.6	1.5	4.6	0.3
31	— 1.3	— 3.5	— 3.3	— 2.9	— 3.3
32	— 0.9	0.1	0.3	1.9	— 2.6
33	0.5	— 0.7	— 0.4	— 1.1	— 1.3
34	— 1.2	0.9	0.3	— 0.8	— 0.6
35	— 1.7	— 9.0	— 5.0	— 4.2	— 5.9

TABLE 61 - HYPOTHESIS A 2

Percentages of gross price variations in each sector of production

(Payment out of tax revenue of 40 % of overall outlay and coverage of the additional sums to be paid out of tax revenue by a tax on value added)

Sector	Belgium	France	Germany	Italy	Netherlands
1	1.8	3.7	3.2	3.1	3.3
2	0.7	0.2	1.9	— 0.1	0.9
3	0.7	0.7	1.7	0.3	1.5
4	0	1.6	1.7	— 1.3	0
5	0.5	0.8	1.1	0.5	0.6
6	0.8	1.0	2.3	— 0.4	2.2
7	1.6	3.0	2.5	2.3	2.6
8	0.9	2.3	2.0	1.8	1.6
9	0.9	1.5	1.7	1.1	1.6
10	0.3	0.6	0.7	...	0.5
11	0.7	0.7	1.8	— 0.4	1.6
12	0.8	1.2	1.9	0.9	1.9
13	0.9	1.3	1.9	1.2	2.1
14	1.1	1.7	2.2	0.7	1.8
15	0.8	1.1	2.0	0.3	2.1
16	0.9	1.3	2.2	— 0.3	2.4
17	0.8	1.0	1.8	0.1	1.2
18	1.0	1.3	2.2	0.4	1.6
19	0.9	1.2	1.9	0.5	2.1
20	0.8	1.0	2.1	— 1.6	1.8
21	0.4	1.2	2.0	...	1.0
22	0.7	1.0	2.1	— 0.7	2.4
23	1.0	1.0	2.2	— 0.5	1.8
24	0.9	1.1	2.3	— 0.5	2.1
25	0.8	1.3	2.3	0.2	1.8
26	1.0	1.2	2.3	1.1	2.2
27	1.1	1.2	2.3	— 0.7	2.0
28	1.3	1.7	2.7	0.7	2.5
29	1.5	— 0.3	2.1	— 0.8	2.0
30	1.5	2.0	2.6	1.0	2.9
31	2.0	1.1	2.5	0.2	2.8
32	1.5	1.8	2.7	0.7	2.6
33	1.8	2.6	2.8	1.7	2.9
34	2.2	4.3	3.2	3.5	4.3
35	1.8	— 2.2	1.0	1.0	0.9
General price variation	1.3	1.6	2.3	0.9	2.1

TABLE 62 - HYPOTHESIS A 2

Percentages of net price variations in each sector of production

(Payment out of tax revenue of 40 % of overall outlay and coverage of the additional sums to be paid out of tax revenue by a tax on value added)

Sector	Belgium	France	Germany	Italy	Netherlands
1	0.5	2.1	0.9	2.2	1.1
2	— 0.5	— 1.4	— 0.3	— 0.9	— 1.2
3	— 0.5	— 0.8	— 0.6	— 0.6	— 0.7
4	0	...	— 0.5	— 2.1	0
5	— 0.7	— 0.7	— 1.1	— 0.4	— 1.5
6	— 0.4	— 0.5	0.1	— 1.2	...
7	0.3	1.4	0.2	1.4	0.4
8	— 0.3	0.7	— 0.3	0.9	— 0.5
9	— 0.3	...	— 0.5	0.2	— 0.5
10	— 0.9	— 0.9	— 1.5	— 0.8	— 1.6
11	— 0.6	— 0.9	— 0.5	— 1.2	— 0.5
12	— 0.4	— 0.3	— 0.3	...	— 0.3
13	— 0.4	— 0.3	— 0.3	0.3	...
14	— 0.2	0.1	...	— 0.2	— 0.4
15	— 0.4	— 0.5	— 0.3	— 0.5	— 0.1
16	— 0.3	— 0.3	— 0.1	— 1.2	0.2
17	— 0.5	— 0.6	— 0.4	— 0.7	— 0.9
18	— 0.3	— 0.3	— 0.1	— 0.5	— 0.5
19	— 0.4	— 0.4	— 0.3	— 0.4	...
20	— 0.5	— 0.5	— 0.1	— 2.5	— 0.4
21	— 0.8	— 0.4	— 0.2	— 0.8	— 1.1
22	— 0.5	— 0.6	— 0.1	—1.6	0.2
23	— 0.3	— 0.6	...	— 1.4	— 0.4
24	— 0.4	— 0.4	...	— 1.3	— 0.1
25	— 0.5	— 0.3	...	— 0.7	— 0.4
26	— 0.3	— 0.4	...	0.2	0.1
27	— 0.2	— 0.3	...	— 1.5	— 0.1
28	...	0.2	0.4	— 0.2	0.3
29	0.2	— 1.8	— 0.2	— 1.7	— 0.1
30	0.3	0.5	0.3	0.2	0.7
31	0.7	— 0.5	0.2	— 0.7	0.6
32	0.2	0.3	0.5	— 0.2	0.5
33	0.5	1.0	0.5	0.8	0.7
34	0.9	2.7	0.9	2.6	2.1
35	0.5	— 3.7	— 1.2	0.1	— 1.2

TABLE 63 - HYPOTHESIS A 3

Percentages of gross price variations in each sector of production

(Payment out of tax revenue of 40 % of overall outlay and coverage of the additional sums to be paid out of tax revenue by direct taxation)

Sector	Belgium	France	Germany	Italy	Nether-lands
1	— 0.1	— 1.0	— 0.5	— 0.9	— 0.7
2	— 1.3	— 4.4	— 1.5	— 3.7	— 3.2
3	— 0.8	— 2.7	— 1.7	— 1.4	— 1.7
4	0	— 2.6	— 1.7	— 5.2	0
5	— 0.1	— 0.7	— 0.5	— 0.4	— 0.3
6	— 0.5	— 2.9	— 1.0	— 3.9	— 1.5
7	— 0.2	— 1.2	— 0.6	— 1.1	— 0.8
8	— 0.3	— 1.4	— 0.6	— 1.5	— 0.6
9	— 0.4	— 1.4	— 0.6	— 1.8	— 0.7
10	— 0.1	— 0.4	— 0.2	— 0.7	— 0.5
11	— 0.5	— 2.5	— 0.9	— 3.2	— 1.0
12	— 0.5	— 2.6	— 0.9	— 2.3	— 1.1
13	— 0.5	— 2.5	— 0.8	— 1.8	— 1.0
14	— 0.5	— 2.2	— 0.9	— 2.4	— 1.2
15	— 0.5	— 2.5	— 0.8	— 2.6	— 0.9
16	— 0.6	— 2.9	— 1.1	— 3.8	— 1.4
17	— 0.5	— 2.0	— 0.8	— 2.6	— 1.0
18	— 0.4	— 2.3	— 0.9	— 2.6	— 1.0
19	— 0.6	— 2.4	— 1.0	— 2.0	— 0.8
20	— 0.7	— 2.7	— 1.0	— 4.7	— 1.1
21	— 0.2	— 1.7	— 0.7	— 2.9	— 0.5
22	— 0.8	— 2.8	— 1.2	— 3.8	— 0.6
23	— 0.7	— 3.0	— 1.1	— 4.0	— 1.3
24	— 0.6	— 2.8	— 1.0	— 3.7	— 1.1
25	— 0.3	— 2.7	— 1.0	— 3.3	— 1.2
26	— 0.5	— 2.8	— 1.0	— 2.5	— 1.0
27	— 0.6	— 2.9	— 1.2	— 4.3	— 1.4
28	— 0.6	— 2.5	— 0.8	— 2.5	— 1.0
29	— 0.5	— 5.0	— 1.3	— 4.5	— 1.1
30	— 0.4	— 2.3	— 0.9	— 2.1	— 1.0
31	— 0.2	— 3.8	— 1.6	— 3.7	— 1.8
32	— 0.7	— 2.6	— 0.8	— 2.9	— 1.9
33	— 0.2	— 2.0	— 0.9	— 2.2	— 1.3
34	...	— 0.4	— 0.5	— 0.6	— 0.3
35	— 0.5	— 7.4	— 3.1	— 3.3	— 4.0
General price variation	— 0.4	— 2.5	— 1.0	— 2.5	— 1.2

TABLE 64 - HYPOTHESIS A 3

Percentages of net price variations in each sector of production

(Payment out of tax revenue of 40 % of overall outlay and coverage of the additional sums to be paid out of tax revenue by direct taxation)

Sector	Belgium	France	Germany	Italy	Nether-lands
1	0.3	1.6	0.5	1.6	0.5
2	— 0.9	— 2.0	— 0.5	— 1.2	— 2.1
3	— 0.4	— 0.2	— 0.7	1.1	— 0.5
4	0	— 0.1	— 0.7	— 2.8	0
5	0.3	1.9	0.5	2.1	0.9
6	— 0.1	— 0.4	...	— 1.4	— 0.3
7	0.2	1.3	0.4	1.4	0.4
8	0.1	1.1	0.4	1.1	0.6
9	0.1	1.1	0.4	0.7	0.5
10	0.3	2.1	0.8	1.9	0.7
11	— 0.1	...	0.1	— 0.7	0.2
12	— 0.1	— 0.1	0.1	0.2	0.1
13	— 0.1	...	0.2	0.7	0.2
14	— 0.1	0.3	0.1	0.1	...
15	— 0.1	...	0.2	— 0.1	0.3
16	— 0.2	— 0.4	— 0.1	— 1.4	— 0.3
17	— 0.1	0.5	0.2	— 0.1	0.2
18	...	0.2	0.1	— 0.1	0.1
19	— 0.2	0.1	...	0.5	0.4
20	— 0.3	— 0.2	...	— 2.2	...
21	0.2	0.9	0.3	— 0.4	0.7
22	— 0.4	— 0.3	— 0.2	— 1.4	0.5
23	— 0.3	— 0.5	— 0.1	— 1.6	— 0.1
24	— 0.2	— 0.3	...	— 1.2	0.1
25	0.1	— 0.2	...	— 0.8	...
26	— 0.1	— 0.3	...	...	0.2
27	— 0.2	— 0.4	— 0.2	— 1.8	— 0.2
28	— 0.2	...	0.2	...	0.2
29	— 0.1	— 2.6	— 0.3	— 2.0	0.1
30	...	0.2	0.1	0.4	0.2
31	0.2	— 1.3	— 0.6	— 1.2	— 0.6
32	— 0.3	— 0.1	0.2	— 0.4	— 0.7
33	0.2	0.5	0.1	0.3	— 0.1
34	0.4	2.2	0.5	2.0	0.8
35	...	— 5.0	— 2.1	— 0.8	— 2.9

TABLE 65 - HYPOTHESIS A 4

Percentages of gross price variations in each sector of production

(Payment out of tax revenue of 40 % of overall outlay, coverage of the additional sums to be paid out of tax revenue by direct taxation and, for all sectors, raising of the balance in the form of contributions, 2/3 from employers, 1/3 from workers)

Sector	Belgium	France	Germany	Italy	Netherlands
1	0.5	— 0.8	0.5	— 1.1	...
2	— 3.2	— 7.7	— 0.9	— 8.6	— 5.6
3	— 1.4	— 4.7	— 1.0	— 3.1	— 2.2
4	0	— 3.5	— 1.4	— 12.8	0
5	0.2	— 0.8	0.2	— 0.9	— 0.5
6	— 0.3	— 4.2	1.0	— 8.9	— 0.8
7	0.2	— 1.2	0.6	— 1.9	— 0.3
8	— 0.4	— 1.7	0.6	— 2.8	— 0.2
9	— 0.2	— 1.7	0.6	— 3.6	— 0.2
10	...	— 0.1	0.2	— 1.5	...
11	— 0.6	— 3.2	1.1	— 7.3	...
12	— 0.7	— 3.4	1.1	— 4.9	0.5
13	— 0.6	— 3.2	1.0	— 3.9	0.2
14	— 0.8	— 2.7	1.0	— 5.8	— 0.4
15	— 0.4	— 3.4	0.8	— 5.6	— 0.3
16	— 0.7	— 3.1	1.3	— 8.1	— 0.6
17	0.5	— 2.3	0.9	— 5.4	— 0.1
18	0.5	— 2.7	0.7	— 5.8	— 0.9
19	— 0.4	— 3.4	0.4	— 4.4	— 0.3
20	— 0.9	— 3.5	0.9	— 8.7	— 0.2
21	...	— 2.1	0.6	— 6.7	0.2
22	— 1.6	— 3.5	1.1	— 8.8	— 0.3
23	— 0.2	— 3.7	...	— 9.1	— 0.3
24	— 0.3	— 3.2	1.1	— 8.5	— 0.3
25	...	— 3.4	1.0	— 6.8	— 0.4
26	— 0.5	— 3.7	1.2	— 5.6	0.2
27	...	— 4.1	1.4	— 9.8	— 0.6
28	— 0.2	— 4.0	0.2	— 6.0	— 0.6
29	2.7	— 10.5	— 0.3	— 10.8	...
30	— 0.2	— 3.1	0.9	— 4.4	...
31	8.0	— 2.8	— 0.3	— 6.5	0.1
32	— 1.0	— 3.8	1.1	— 4.2	— 1.6
33	2.4	— 1.7	1.4	— 2.4	1.1
34	...	— 0.8	0.4	— 1.1	— 0.2
35	7.7	— 13.2	— 3.2	— 0.2	— 5.7
General price variation	0.6	— 3.5	0.5	— 4.8	— 0.5

TABLE 66 - HYPOTHESIS A 4

Percentages of net price variations in each sector of production

(Payment out of tax revenue of 40 % of overall outlay, coverage of the additional sums to be paid out of tax revenue by direct taxation and, for all sectors, raising of the balance in the form of contributions, 2/3 from employers, 1/3 from workers)

Sector	Belgium	France	Germany	Italy	Netherlands
1	— 0.1	2.8	— 0.1	3.8	0.5
2	— 3.8	— 4.3	— 1.5	— 4.0	— 5.1
3	— 2.0	— 1.2	— 1.5	1.7	— 1.6
4	0	...	— 1.9	— 8.4	0
5	— 0.4	2.8	— 0.3	4.0	...
6	— 1.0	— 0.8	0.4	— 4.3	— 0.3
7	— 0.4	2.3	...	3.0	0.3
8	— 1.0	1.9	0.1	2.1	0.4
9	— 0.8	1.8	0.1	1.3	0.3
10	— 0.7	3.5	— 0.3	3.4	0.5
11	— 1.2	0.3	0.5	— 2.7	0.6
12	— 1.3	0.1	0.6	— 0.1	1.0
13	— 1.2	0.3	0.4	0.9	0.8
14	— 1.4	0.9	0.5	— 1.1	0.1
15	— 1.0	0.1	0.3	— 0.8	0.2
16	— 1.3	0.4	0.8	— 3.5	— 0.1
17	— 0.2	1.2	0.4	— 0.7	0.4
18	— 0.1	0.8	0.2	— 1.1	— 0.3
19	— 1.0	0.1	— 0.1	0.3	0.2
20	— 1.5	...	0.4	— 4.1	0.3
21	— 0.6	1.5	0.1	— 2.0	0.7
22	— 2.2	...	0.5	— 4.3	0.3
23	— 0.8	— 0.2	— 0.6	— 4.5	0.3
24	— 0.9	0.3	0.6	— 3.9	0.3
25	— 0.6	0.1	0.5	— 2.2	0.2
26	— 1.1	— 0.2	0.7	— 0.9	0.8
27	— 0.6	— 0.7	0.9	— 5.3	— 0.1
28	— 0.8	— 0.5	— 0.3	— 1.3	...
29	— 2.1	— 7.3	— 0.9	— 6.3	0.5
30	— 0.8	0.4	0.4	0.3	0.5
31	7.4	0.7	— 0.9	— 1.8	0.6
32	— 1.6	— 0.3	0.5	0.5	— 1.1
33	1.8	1.8	0.8	2.5	1.7
34	— 0.6	2.8	— 0.1	3.8	0.4
35	7.0	— 10.1	— 3.7	4.8	— 5.2

TABLE 67 - HYPOTHESIS B 1

Percentages of gross price variations in each sector of production

(Payment out of tax revenue of 40 % of overall outlay increased to a sum corresponding to 25 % of the national income, coverage of the additional sums paid out of tax revenue by direct taxation and, for all sectors, raising of the balance in the form of contributions, 2/3 from employers, 1/3 from workers)

Sector	Belgium	France	Germany	Italy	Netherlands
1	1.4	0.4	1.5	0.5	1.1
2	1.2	— 4.4	1.2	— 5.3	— 2.7
3	1.8	— 2.7	1.3	— 1.6	— 0.2
4	0	— 1.1	0.8	— 8.5	0
5	0.9	— 0.1	1.1	— 0.4	— 0.2
6	1.7	— 1.6	2.9	— 5.1	1.2
7	1.1	0.1	1.7	— 0.3	0.9
8	0.8	— 0.3	1.7	— 1.0	0.7
9	1.4	— 0.3	1.9	— 1.5	0.9
10	0.5	0.6	0.7	— 0.8	0.6
11	1.2	— 0.8	2.9	— 4.2	1.7
12	1.3	— 1.0	2.9	— 2.5	2.5
13	1.3	— 0.9	2.6	— 2.0	1.9
14	1.3	— 0.5	2.7	— 3.7	1.4
15	1.6	— 1.1	2.4	— 2.7	1.1
16	1.8	— 0.1	3.5	— 3.8	1.5
17	2.8	— 0.3	2.6	— 2.4	1.4
18	2.6	— 0.5	2.3	— 3.2	0.4
19	2.1	— 1.3	2.2	— 2.4	0.9
20	1.7	— 1.0	2.8	— 5.5	1.6
21	1.0	— 0.4	2.0	— 3.9	0.8
22	1.4	— 0.8	3.3	— 5.3	0.6
23	2.7	— 0.7	3.3	— 5.4	1.8
24	2.4	— 0.4	3.1	— 5.1	1.4
25	1.6	— 0.7	3.0	— 3.5	1.5
26	1.6	— 1.2	3.2	— 3.1	1.9
27	2.6	— 1.5	3.8	— 5.8	1.4
28	2.4	— 1.9	1.6	— 3.7	0.8
29	6.1	— 7.7	1.6	— 6.9	1.7
30	1.4	— 1.0	2.6	— 2.1	1.6
31	12.8	1.8	2.1	— 1.3	2.8
32	1.9	— 1.6	2.7	0.4	0.9
33	4.4	0.6	3.3	1.8	3.7
34	0.2	— 0.6	1.3	— 0.5	0.3
35	13.4	— 8.0	0.5	8.8	— 1.4
General price variation	2.8	— 1.2	2.4	— 1.7	1.2

TABLE 68 - HYPOTHESIS B 1

Percentages of net price variations in each sector of production

(Payment out of tax revenue of 40 % of overall outlay increased to a sum corresponding to 25 % of the national income, coverage of the additional sums paid out of tax revenue by direct taxation and, for all sectors, raising of the balance in the form of contributions, 2/3 from employers, 1/3 from workers)

Sector	Belgium	France	Germany	Italy	Netherlands
1	— 1.4	1.6	— 0.9	2.2	— 0.1
2	— 1.5	— 3.2	— 1.2	— 3.6	— 3.8
3	— 0.9	— 1.5	— 1.1	0.1	— 1.4
4	0	0.1	— 1.6	— 6.9	0
5	— 1.8	1.1	— 1.3	1.3	— 1.3
6	— 1.0	— 0.4	0.5	— 3.5	...
7	— 1.6	1.3	— 0.7	1.4	— 0.3
8	— 1.9	1.0	— 0.6	0.7	— 0.4
9	— 1.3	0.9	— 0.5	0.2	— 0.3
10	— 2.2	1.8	— 1.7	0.9	— 0.6
11	— 1.5	0.4	0.4	— 2.5	0.5
12	— 1.4	0.2	0.5	— 0.8	1.3
13	— 1.4	0.4	0.2	— 0.3	0.7
14	— 1.4	0.8	0.3	— 2.0	0.2
15	— 1.1	0.1	...	— 1.0	— 0.1
16	— 0.9	1.1	1.1	— 2.2	0.3
17	— 0.1	1.0	0.1	— 0.8	0.2
18	— 0.1	0.8	— 0.1	— 1.6	— 0.7
19	— 0.7	— 0.1	— 0.2	— 0.7	— 0.3
20	— 1.0	0.2	0.4	— 3.9	0.4
21	— 1.7	0.8	— 0.4	— 2.2	— 0.4
22	— 1.4	0.4	0.9	— 3.7	— 0.5
23	— 0.1	0.5	0.9	— 3.7	0.6
24	— 0.3	0.8	0.7	— 3.4	0.2
25	— 1.2	0.5	0.6	— 1.9	0.3
26	— 1.1	0.1	0.8	— 1.5	0.7
27	— 0.1	— 0.3	1.4	— 4.1	0.2
28	— 0.4	— 0.7	— 0.8	— 2.0	— 0.4
29	3.3	— 6.6	— 0.8	— 5.3	0.5
30	— 1.3	0.3	0.2	— 0.4	0.4
31	9.7	3.1	— 0.3	0.4	1.6
32	— 0.8	— 0.4	0.3	2.2	— 0.3
33	1.6	1.9	0.8	3.5	2.5
34	— 2.5	0.6	— 1.1	1.2	— 0.9
35	10.3	— 6.8	— 1.8	10.7	— 2.6

TABLE 69 - HYPOTHESIS B 2

Percentages of gross price variations in each sector of production

(Increase of the overall outlay to a sum corresponding to 25 % of the national income and coverage of the additional sums paid out of tax revenue by proportional increases in existing direct and indirect taxes)

Sector	Belgium	France	Germany	Italy	Nether-lands
1	2.8	1.9	0.9	1.5	1.6
2	2.6	1.9	3.1	4.3	0.5
3	2.6	1.6	3.3	3.6	1.1
4	0	5.0	2.6	3.6	0
5	15.8	14.8	6.2	25.6	6.0
6	2.5	6.0	2.7	5.3	1.9
7	2.6	3.5	2.0	2.9	1.8
8	2.8	3.2	2.3	5.5	2.7
9	12.8	11.9	8.5	12.8	12.8
10	30.7	22.9	16.8	44.7	19.5
11	2.3	4.6	2.5	3.6	0.4
12	2.9	4.8	2.7	3.3	0.8
13	2.6	5.0	2.3	3.4	1.3
14	3.0	4.9	2.5	2.7	1.8
15	3.0	4.7	2.5	5.0	2.0
16	2.3	4.2	2.5	3.6	1.2
17	2.7	3.9	2.3	3.5	2.6
18	2.7	5.2	2.3	6.0	1.6
19	1.9	3.7	2.7	3.9	2.1
20	2.4	4.8	2.6	2.2	1.9
21	0.9	4.5	2.0	4.5	0.8
22	2.4	6.3	2.5	3.4	2.2
23	2.0	4.5	2.2	3.2	1.5
24	2.2	5.2	2.2	4.1	1.2
25	1.9	3.5	2.1	2.3	1.5
26	2.2	4.7	2.0	3.4	1.7
27	2.8	4.2	2.6	4.4	1.8
28	2.8	3.7	2.2	9.9	1.2
29	2.7	4.0	2.1	5.1	1.1
30	4.2	4.7	3.9	12.7	2.0
31	0.3	1.9	0.3	2.9	0.2
32	2.1	4.5	2.8	9.5	0.7
33	3.8	3.1	2.2	3.3	1.2
34	0.3	3.1	2.5	1.1	1.1
35	0	0	0.2	0	0
General price variation	3.1	4.3	2.7	5.7	1.9

TABLE 70 - HYPOTHESIS B 2

Percentages of net price variations in each sector of production

(Increase of the overall outlay to a sum corresponding to 25 % of the national income and coverage of the additional sums paid out of tax revenue by proportional increases in existing direct and indirect taxes)

Sector	Belgium	France	Germany	Italy	Nether-lands
1	— 0.4	— 2.3	— 1.7	— 4.0	— 0.4
2	— 0.5	— 2.3	0.4	— 1.3	— 1.4
3	— 0.6	— 2.6	0.6	— 2.0	— 0.8
4	0	0.6	...	— 1.9	0
5	12.3	10.1	3.5	18.8	4.0
6	— 0.6	1.6	...	— 0.4	...
7	— 0.5	— 0.8	— 0.7	— 2.7	— 0.1
8	— 0.3	— 1.1	— 0.3	— 0.2	0.8
9	9.3	7.2	5.7	6.7	10.7
10	26.7	17.8	13.7	36.9	17.3
11	— 0.8	0.3	— 0.2	— 2.0	— 1.5
12	— 0.3	0.5	...	— 2.2	— 1.1
13	— 0.5	0.6	— 0.4	— 2.1	— 0.6
14	— 0.2	0.6	— 0.2	— 2.8	— 0.1
15	— 0.2	0.4	— 0.2	— 0.6	...
16	— 0.8	— 0.1	— 0.1	— 2.0	— 0.7
17	— 0.5	— 0.4	— 0.4	— 2.1	0.6
18	— 0.5	0.9	— 0.3	0.3	— 0.3
19	— 1.2	— 0.6	...	— 1.7	0.1
20	— 0.7	0.5	— 0.1	— 3.3	...
21	— 2.2	0.2	— 0.7	— 1.1	— 1.1
22	— 0.7	1.9	— 0.1	— 2.2	0.3
23	— 1.1	0.2	— 0.5	— 2.3	— 0.4
24	— 0.9	0.9	— 0.5	— 1.5	— 0.7
25	— 1.2	— 0.7	— 0 6	— 3.2	— 0.4
26	— 0.9	0.4	— 0.7	— 2.2	— 0.2
27	— 0.3	— 0.1	...	— 1.2	— 0.1
28	— 0.3	— 0.6	— 0.5	4.0	— 0.7
29	— 0.5	— 0.3	— 0.6	— 0.6	— 0.8
30	1.0	0.4	1.1	6.6	0.1
31	— 2.7	— 2.3	— 2.3	— 2.6	— 1.7
32	— 1.0	0.2	0.1	3.6	— 1.2
33	0.6	— 1.2	— 0.4	— 2.2	— 0.7
34	— 2.8	— 1.2	— 0.2	— 4.3	— 0.8
35	— 3.1	— 4.1	— 2.5	— 5.4	— 1.9

TABLE 71 - HYPOTHESIS C

Percentages of gross price variations in each sector of production

(Payment out of tax revenue of 10 % of overall outlay, coupled with transfer of the cost of any items no longer covered out of tax revenue to the contributions made by employers and workers, in the proportions at present applied)

Sector	Belgium	France	Germany	Italy	Nether-lands
1	— 0.5	0.3	0.2	0.3	0.4
2	3.5	0.7	0.7	1.1	1.6
3	2.0	0.4	0.8	0.5	0.9
4	0	0.8	1.0	1.5	0
5	— 4.6	1.6	— 0.5	1.4	0.3
6	0.8	0.9	0.4	1.2	0.7
7	— 0.3	0.5	0.1	0.4	0.4
8	0.1	0.5	0.1	0.6	0.4
9	— 2.9	1.3	— 0.7	1.1	0.6
10	— 0.3	2.4	— 2.2	2.4	0.7
11	0.8	0.7	0.3	1.0	0.5
12	0.7	0.8	0.3	0.7	0.5
13	0.8	0.8	0.3	0.6	0.5
14	0.9	0.7	0.3	0.7	0.7
15	0.6	0.8	0.3	0.9	0.5
16	1.3	0.7	0.5	1.1	0.7
17	0.7	0.6	0.3	0.8	0.5
18	0.5	0.8	0.3	0.9	0.6
19	1.3	0.6	0.4	0.7	0.4
20	1.4	0.8	0.4	— 0.5	0.6
21	0.5	0.6	0.3	0.9	0.1
22	1.9	0.9	0.5	1.1	0.3
23	1.5	0.8	0.5	1.0	0.7
24	1.3	0.8	0.5	1.1	0.6
25	0.5	0.7	0.4	0.7	0.7
26	1.0	0.8	0.5	0.8	0.5
27	1.0	0.7	0.5	1.2	0.7
28	1.1	0.6	0.3	1.1	0.5
29	0.7	1.0	0.7	1.4	0.6
30	— 0.1	0.7	0.1	1.2	0.6
31	0.6	0.6	1.2	1.1	0.8
32	1.8	0.7	0.2	1.2	0.9
33	— 0.5	0.5	0.4	0.7	0.7
34	0.1	0.4	...	0.2	0.2
35	1.5	0.8	2.4	0.8	2.0
General price variation	0.3	0.7	0.4	0.8	0.6

TABLE 72 - HYPOTHESIS C

Percentages of net price variations in each sector of production

(Payment out of tax revenue of 10 % of overall outlay, coupled with transfer of the cost of any items no longer covered out of tax revenue to the contributions made by employers and workers, in the proportions at present applied)

Sector	Belgium	France	Germany	Italy	Nether-lands
1	— 0.8	— 0.4	— 0.1	— 0.5	— 0.3
2	3.2	...	0.3	0.2	1.0
3	1.6	— 0.3	0.4	— 0.3	0.3
4	0	0.1	0.6	0.6	0
5	— 4.9	0.9	— 0.9	0.5	— 0.4
6	0.5	0.2	...	0.4	0.1
7	— 0.6	— 0.2	— 0.2	— 0.4	— 0.2
8	— 0.2	— 0.2	— 0.3	— 0.2	— 0.3
9	— 3.2	0.6	— 1.1	0.2	...
10	— 9.6	1.6	— 2.6	1.6	...
11	0.4	...	...	0.1	— 0.1
12	0.4	0.1	— 0.1	— 0.1	— 0.1
13	0.4	...	— 0.1	— 0.2	— 0.1
14	0.5	...	— 0.1	— 0.1	...
15	0.3	...	— 0.1	0.1	— 0.1
16	0.9	...	0.1	0.3	0.1
17	0.4	— 0.1	— 0.1	...	— 0.1
18	0.2	0.1	...	0.1	— 0.1
19	1.0	— 0.1	0	— 0.2	— 0.2
20	1.1	0.1	...	— 1.4	...
21	0.1	— 0.1	— 0.1	0.1	— 0.5
22	1.6	0.2	0.2	0.2	— 0.3
23	1.2	0.1	0.1	0.2	...
24	1.0	0.1	0.1	0.2	...
25	0.1	— 0.1	0.1	— 0.1	...
26	0.7	0.1	0.1	— 0.1	— 0.1
27	0.6	...	0.2	0.4	0.1
28	0.7	— 0.1	— 0.1	0.3	— 0.1
29	0.3	0.2	0.3	0.5	— 0.1
30	— 0.5	...	— 0.3	0.3	— 0.1
31	0.3	— 0.1	0.8	0.2	0.2
32	1.4	...	— 0.2	0.4	0.3
33	— 0.9	— 0.2	...	— 0.1	...
34	— 0.3	— 0.4	— 0.4	— 0.7	— 0.4
35	1.1	0.1	2.0	...	1.4

462. All the absolute and relative indices shown in the preceding tables relate to the "potential" price variations caused by the variations in the financing system considered, applying the hypotheses and with the reservations stated in the earlier pages. At this point it is essential to give the economic significance of these indices. The indices for the gross variations relate to conditions obtaining on an isolated market or, at all events, apply on the assumption that the rates of exchange between the various national currencies remain constant, at least during the initial stage.

The indices for the percentages of the net variations presuppose a complete restoration of equilibrium in the exchange rates.

463. In order to examine the results obtained by applying the various social security financing systems as described in the different hypotheses, it would be necessary to have the prices of the principal products in each sector for the various countries and, assuming that the variations in the financing systems have a uniform effect on all the prices in each sector, to ascertain whether, in the relevant individual countries, those variations are accompanied by a rapprochement of the prices of analogous products or whether the opposite is the case.

A survey of this kind can obviously be criticized on many counts. In the first place, the labour component of the various products in any one sector usually varies, and consequently the variations in the social security financing systems have different effects on each of them. In many enterprises, however, the production costs of goods are interrelated; moreover, by means of more detailed tables the analysis can be carried far enough to achieve adequate homogeneity of the goods in each sector.

464. Secondly, at international level it is not always possible to obtain price statistics for products with similar marketing characteristics; consequently, the comparisons mentioned above may provide very debatable results. But this is a purely practical difficulty which can be overcome by standardizing the price statistics at international level—an operation that forms one of the objectives of the various countries' statistical offices and also, in particular, of the Statistical Office of the European Communities.

Moreover, one important result has already been obtained. In this connection, mention should be made of the survey carried out in 1958 in the six EEC countries on the average prices of consumer goods and services in the case of 177 items; (1) the results of this survey be used below to illustrate how the proposed method is applied.

465. Finally, it may also be said that an evaluation of the influence exerted by variations in the financing systems—i.e. to approximate the prices of similar products in the various countries or to widen the gap between the prices—can be based only on a specific index: selection of that index inevitably involves making another assumption for the purposes of the survey, and may, therefore, arouse doubts as to interpretation of the results.

Despite these comments it must none the less be stressed that, with the help of the sufficiently detailed tables available and, above all, standardized statistics for products, results can be obtained which have some value and which, subject to the reservations stated earlier, can provide an answer to the main question posed in the present chapter, a question which is of major importance for orientation of the Community's policy in this field.

466. Unfortunately, the data available at present are extremely scarce, both because the matrices for 35 sectors do not yet enable us to make sufficiently detailed analyses and because, as already pointed out, it is only in certain cases that the prices for analogous products in the six countries are available.

After allowance for all the many reservations stated above, a number of additional evaluations have been made and will be briefly described below; they serve the double purpose of extending the evaluations given in the above tables and of showing how the figures in those tables can be used.

467. First of all a study was made of wholesale prices, which correspond most closely to the ex-works prices considered in the input-output matrices; here data were found only for the following eight sectors:

Sector 1. Agricultural products (including wine), forestry and fishery products;

Sector 6. Minerals, products with a non-metallic mineral base (cement, glass, etc.);

Sector 8. Miscellaneous foodstuffs;

Sector 15. Paper, paperboard and articles thereof;

Sector 17. Rubber and asbestos articles;

Sector 18. Chemical products, man-made fibres, plastic and synthetic products;

Sector 19. Iron and steel products covered by the ECSC Treaty;

Sector 28. Electricity, gas, compressed air, steam, water supply.

(1) See Statistical Office of the European Communities, *Revenus réels CECA 1954-1958,* in Statistiques sociales, No. 2, 1960.

468. Moreover, it must be mentioned that the price of only one product for each sector has been used, namely: Sector 1, wheat; Sector 6, cement; Sector 8, pâtés; Sector 15, newsprint; Sector 17, lorry tyres; Sector 18, ammonium sulphate; Sector 19, rolled steels and Sector 28, electricity. In addition, the data employed relate only to the prices for France and Italy, except for wheat, for which the German price was also available, and for electricity for which the Belgian and Dutch prices were available.

The comparability of these prices is affected by the places where they were recorded and by the fact that the types of product considered were not identical.

469. In order to provide an initial indication allowance was first made for these shortcomings and then an examination was made of the effects of applying the various financing hypotheses to the prices for the various products. The prices were converted into Belgian francs, and the possible new prices were computed on the basis of the seven hypotheses.

The prices of the various products, expressed in Belgian francs, and the prices resulting from application of the hypotheses chosen, are given in Table 73, with due allowance for the percentages of the net variations, i.e. assuming that the variations in the social security financing system are accompanied by corresponding variations in the exchange rate.

470. To facilitate this study, we calculated the simple mean difference ([1])—expressed as a percentage of the average prices—between the original prices and the prices as charged under the different financing hypotheses: the results are given in Table 74.

471. It will thus be observed that for these 8 sectors, hypothesis B.2 is accompanied by a reduction in the average difference in 7 cases, hypotheses A.1 and A.4 in 6 cases and hypotheses A.2, A.3, B.1 and C in 5 cases. The sample survey therefore appears to show that in the majority of sectors all the financing hypotheses employed ought to mean a reduction in price differences.

Employing exactly the same method as that just described, a second practical study was made, using the average prices of the consumer goods and services available in the 1958 survey made by the Statistical Office of the European Communities. These prices were collected in the major industrial cities of Antwerp, Lyons, Frankfurt, Milan and Rotterdam and relate to 20 products.

472. The sectors covered in this example and the products concerned are listed below.

Sector 1. Agricultural products (including wine), forestry and fishery products: *common wheaten flour;*

Sector 5. Crude and refined oil (including distribution), natural gas: *petrol;*

Sector 6. Mineral products, products with a non-metallic mineral base (cement, glass, etc.): *window glass;*

Sector 7. Meat (including preserved meat), milk products, fats and oils (animal and vegetable): *veal chop;*

Sector 8. Miscellaneous foodstuffs: *macaroni, etc.;*

Sector 9. Drink: *pale ale;*

Sector 10. Tobacco: *cigarettes;*

Sector 11. Yarn, woven fabrics, knitted and crocheted goods: *material for sheets;*

Sector 12. Clothes, made-up fabrics, carpets, furs, pelts: *men's lounge suits;*

Sector 13. Leather, leather goods (excluding clothes), footwear: *men's town shoes;*

Sector 14. Wood, wooden and cork goods (including furniture): *bedroom suite;*

Sector 15. Paper, paperboard and their by-products: *exercise book;*

Sector 16. Products of the printing, publishing and related industries: *daily paper;*

Sector 17. Rubber and asbestos articles: *rubber ball;*

Sector 18. Chemical products, artificial fibres, plastic and synthetic products: *plastic bucket;*

Sector 24. Electrical machinery, equipment and supplies: *radio;*

Sector 28. Electricity, gas, compressed air, steam, water supply: *electricity;*

Sector 29. Transport and ancillary activities: *normal tariff on railway;*

Sector 31. Communication: *telephone calls;*

Sector 33. Other services: *women's hair setting.*

The results are given in Tables 75 and 76.

([1]) See footnote, page 273.

TABLE 73

Variations in the wholesale prices of some products under the various financing hypotheses

in Belgian francs

Sector	Product	Unit of measure	Country	Initial prices	Changed prices under the various financing hypotheses (allowing for the percentages of net variations)						
					A 1	A 2	A 3	A 4	B 1	B 2	C
1	Wheat	q"	France	375	372	383	381	386	381	366	373
			Germany	290	286	293	291	290	287	285	290
			Italy	512	507	523	520	532	523	492	509
6	Cement	t	France	775	784	771	772	769	772	787	777
			Italy	1 024	1 007	1 111	1 009	980	988	1 020	1 028
8	Macaroni, etc.	q	France	1 215	1 215	1 223	1 229	1 238	1 227	1 202	1 212
			Italy	1 087	1 097	1 097	1 099	1 110	1 095	1 085	1 085
15	Newsprint	q	France	755	758	751	755	756	756	758	755
			Italy	844	839	839	843	837	836	839	844
17	Lorry tyres	l	France	2 317	2 318	2 304	2 329	2 345	2 339	2 308	2 315
			Italy	4 600	4 534	4 566	4 595	4 570	4 565	4 506	4 598
18	Ammonium sulphate	q	France	268.9	272.2	268.4	269.8	271.3	271.3	271.6	269.4
			Italy	271.8	272.1	270.4	271.6	268.9	267.6	272.6	272.0
19	Rolled steel	t	France	5 318	5 291	5 299	5 324	5 321	5 313	5 285	5 314
			Italy	7 949	7 897	7 921	7 987	7 976	7 895	7 812	7 935
28	Electricity	'000 kw	Belgium	1 051	1 047	1 052	1 049	1 042	1 047	1 048	1 059
			France	877	872	879	877	873	871	872	876
			Italy	899	922	897	899	888	881	935	902
			Netherlands	847	839	850	849	847	844	841	846

N.B. The price variations considered here relate not to the price of the individual product but to the price of the entire sector to which the product belongs.
Source: Statistisches Jahrbuch of the Federal Republic of Germany, 1962: INSEE, *Annuaire statistique de la France*, 1961; *Istituto centrale di Statistica, Annuario statistico italiano*, 1961. - Quintal.

TABLE 74

Simple average differences in the initial prices and the prices as changed under the various financing hypotheses, expressed as a percentage of the average wholesale price

Sector	Product	Simple average difference							
		between the initial prices	between the prices as changed under the financing hypotheses						
			A 1	A 2	A 3	A 4	B 1	B 2	C
1	Wheat	37.72	37.85	38.28	38.51	39.98	39.55	36.22	37.17
6	Cement	27.68	24.90	36.13	26.61	24.13	24.55	25.79	27.81
8	Macaroni, etc.	11.12	10.21	10.86	11.17	10.90	11.37	10.23	11.06
15	Newsprint	11.13	10.14	11.07	11.01	10.17	10.31	10.14	11.13
17	Lorry tyres	66.01	64.68	65.85	65.45	64.35	64.48	64.51	64.05
18	Ammonium sulphate	0.11	0	0.07	0.07	0.09	0.14	0.04	0.10
19	Rolled steel	39.66	39.52	39.67	40.01	39.93	39.10	38.59	39.57
28	Electricity	11.54	12.17	11.31	11.32	10.96	11.31	12.34	12.06

N.B. The price variations considered here are the net percentages and relate not to the price of the individual product but to the price of the entire sector to which the product belongs.

TABLE 75

Retail price variations for certain products on the basis of various hypotheses concerning financing

Sector	Product	Unit	Country	Initial price in Bfrs.	Changed price on basis of various hypotheses concerning financing (allowance made for net variations in %)						
					A 1	A 2	A 3	A 4	B 1	B 2	C
1	Wheaten flour	1 kg	Belgium	9.40	9.41	9.45	9.43	9.39	9.27	9.37	9.33
			France	7.45	7.39	7.60	7.56	7.66	7.57	7.28	7.42
			Germany	9.68	9.53	9.77	9.73	9.67	9.59	9.51	9.67
			Italy	9.66	9.56	9.87	9.82	10.03	9.87	9.27	9.61
			Netherlands	7.28	7.27	7.36	7.32	7.32	7.27	7.25	7.26
5	Petrol	1 l	Belgium	8.70	9.30	8.64	8.72	8.66	8.54	9.77	8.27
			France	12.24	13.69	12.15	12.47	12.58	12.38	13.47	12.34
			Germany	8.72	9.12	8.62	8.76	8.70	8.61	9.02	8.64
			Italy	11.43	13.03	11.38	11.67	11.89	11.58	13.58	11.49
			Netherlands	7.81	8.39	7.69	7.88	7.81	7.71	8.12	7.78
6	Window glass	1 m²	Belgium	82.00	81.65	81.65	81.93	81.22	81.19	81.47	82.40
			France	92.11	93.24	91.60	91.73	91.42	91.70	93.59	92.30
			Germany	132.18	132.14	132.26	132.12	132.73	132.83	132.19	132.22
			Italy	109.64	107.85	108.29	108.08	104.91	105.81	109.23	110.05
			Netherlands	99.25	99.05	99.29	98.97	99.00	99.24	99.27	99.35
7	Veal cutlets	1 kg	Belgium	40.00	39.98	40.13	40.10	39.85	39.36	39.78	39.75
			France	46.10	46.34	46.75	46.72	47.18	46.70	45.75	46.00
			Germany	58.08	57.87	58.22	58.33	58.09	57.67	57.69	57.95
			Italy	55.38	55.18	56.15	56.16	57.04	56.18	53.91	55.14
			Netherlands	49.39	50.00	50.11	50.10	50.03	49.75	49.83	49.79
8	Macaroni, etc.	1 kg	Belgium	22.80	22.78	22.73	22.82	22.58	22.37	22.72	22.75
			France	16.73	16.73	16.85	16.92	17.04	16.89	16.55	16.69
			Germany	15.89	15.89	15.84	15.96	15.90	15.79	15.84	15.85
			Italy	17.39	17.55	17.54	17.58	17.75	17.52	17.36	17.35
			Netherlands	18.00	18.33	17.90	18.10	18.06	17.92	18.14	17.95
9	Pale ale	1 l	Belgium	14.00	14.71	13.96	14.01	13.89	13.81	15.31	13.55
			France	12.24	13.26	12.24	12.38	12.46	12.35	13.13	12.32
			Germany	13.62	14.57	13.55	13.67	13.63	13.55	14.39	13.47
			Italy	14.49	15.21	14.52	14.60	14.67	14.52	15.46	14.52
			Netherlands	15.35	18.15	15.27	15.43	15.40	15.31	16.99	15.34
10	Cigarettes	20	Belgium	9.20	10.55	9.12	9.23	9.14	9.00	11.66	8.32
			France	9.69	11.62	9.60	9.90	10.03	9.87	11.41	9.85
			Germany	23.90	27.93	23.54	24.08	23.82	23.50	27.18	23.28
			Italy	12.88	16.14	12.77	13.12	13.32	12.99	17.63	13.08
			Netherlands	12.57	16.26	12.37	12.66	12.63	12.50	14.74	12.57
11	Material for sheets	1 m²	Belgium	32.68	32.53	32.49	32.66	32.29	32.19	32.43	32.82
			France	28.76	28.85	28.51	28.77	28.84	28.87	28.84	28.77
			Germany	31.43	31.40	31.28	31.46	31.60	31.57	31.38	31.42
			Italy	25.60	25.09	25.28	25.42	24.92	24.96	25.10	25.63
			Netherlands	25.94	25.35	25.81	25.99	26.09	26.07	25.55	25.91
12	Men's lounge suits	1	Belgium	3 060.83	3 053.61	3 047.76	3 057.80	3 021.77	3 017.49	3 052.87	3 073.20
			France	2 262.36	2 272.54	2 254.78	2 261.07	2 264.10	2 266.91	2 273.63	2 263.79
			Germany	1 734.93	1 735.54	1 729.46	1 733.49	1 744.98	1 744.06	1 734.34	1 733.92
			Italy	2 171.49	2 144.82	2 172.16	2 176.48	2 168.30	2 154.57	2 123.28	2 169.14
			Netherlands	1 854.87	1 823.34	1 849.17	1 857.30	1 873.59	1 879.09	1 834.50	1 853.11
13	Men's town shoes	1	Belgium	313.40	312.28	312.29	313.12	309.56	309.04	311.81	314.79
			France	345.07	347.35	343.99	344.98	346.02	346.32	347.23	345.21
			Germany	352.55	351.59	351.45	353.28	354.13	353.10	351.16	352.22
			Italy	283.36	281.29	284.12	285.28	285.77	282.54	277.35	282.75
			Netherlands	284.64	282.26	284.54	285.20	286.88	286.65	282.98	284.26

TABLE 75 (continued)

Secton	Product	Unit	Country	Initial price in Bfrs.	Changed price on basis of various hypotheses concerning financing (allowance made for net variations in %)						
					A 1	A 2	A 3	A 4	B 1	B 2	C
14	Bedroom suite	1	Belgium	5 571.00	5 558.13	5 562.14	5 563.03	5 491.89	5 492.00	5 562.03	5 600.14
			France	7 814.83	7 882.04	7 824.60	7 839.76	7 883.13	7 873.68	7 858.59	7 816.31
			Germany	4 705.11	4 701.49	4 704.26	4 711.27	4 727.08	4 719.04	4 697.16	4 701.53
			Italy	5 272.75	5 180.69	5 263.26	5 275.39	5 216.02	5 167.88	5 125.06	5 264.89
			Netherlands	5 211.16	5 202.46	5 191.88	5 210.80	5 216.27	5 223.77	5 207.25	5 212.88
15	Exercise book	1	Belgium	3.56	3.55	3.54	3.56	3.52	3.52	3.55	3.57
			France	2.24	2.25	2.23	2.24	2.24	2.24	2.25	2.24
			Germany	2.39	2.39	2.38	2.39	2.40	2.39	2.38	2.39
			Italy	2.42	2.41	2.41	2.42	2.40	2.40	2.41	2.42
			Netherlands	1.72	1.73	1.72	1.73	1.72	1.72	1.72	1.72
16	Daily paper	1	Belgium	2.00	1.99	1.99	2.00	1.97	1.98	1.98	2.02
			France	2.04	2.03	2.03	2.03	2.05	2.06	2.04	2.04
			Germany	2.39	2.38	2.39	2.39	2.41	2.42	2.39	2.39
			Italy	2.42	2.36	2.39	2.39	2.34	2.37	2.37	2.43
			Netherlands	1.99	1.96	1.99	1.98	1.99	2.00	1.98	1.99
17	Rubber ball	1	Belgium	15.40	15.35	15.33	15.39	15.38	15.39	15.33	15.46
			France	36.21	36.23	36.00	36.39	36.64	36.56	36.07	36.18
			Germany	23.54	23.48	23.44	23.58	23.63	23.57	23.45	23.53
			Italy	22.78	22.45	22.61	22.75	22.63	22.61	22.31	22.77
			Netherlands	14.56	14.69	14.43	14.59	14.62	14.59	14.65	14.54
18	Plastic bucket	1	Belgium	85.20	84.98	84.94	85.19	85.11	85.09	84.79	85.35
			France	122.50	123.87	122.16	122.78	123.45	123.43	123.59	122.59
			Germany	51.87	51.73	51.83	51.94	51.96	51.82	51.69	51.85
			Italy	84.53	84.61	84.09	84.47	83.63	83.21	84.78	84.60
			Netherlands	91.97	91.61	91.49	92.11	91.65	91.30	91.67	91.89
24	Radio set	1	Belgium	4 450.00	4 418.09	4 432.33	4 440.43	4 410.48	4 435.40	4 408.17	4 494.99
			France	6 229.14	6 269.88	6 201.23	6 213.32	6 245.40	6 277.54	6 284.33	6 236.18
			Germany	3 919.93	3 897.70	3 920.40	3 919.54	3 943.61	3 947.41	3 901.39	3 922.99
			Italy	5 418.62	5 303.64	5 346.12	5 351.27	5 205.56	5 233.19	5 340.00	5 430.32
			Netherlands	4 340.42	4 290.07	4 336.86	4 345.41	4 351.92	4 349.67	4 308.00	4 339.03
28	Electricity	1 Kw/h	Belgium	3.69	3.68	3.69	3.68	3.66	3.68	3.68	3.72
			France	2.75	2.73	2.75	2.75	2.74	2.73	2.73	2.75
			Germany	2.51	2.50	2.52	2.51	2.50	2.49	2.50	2.51
			Italy	3.62	3.71	3.61	3.62	3.57	3.55	3.77	3.63
			Netherlands	2.25	2.23	2.26	2.25	2.25	2.24	2.23	2.25
29	Normal tariff on railway	1 km	Belgium	0.87	0.87	0.87	0.87	0.85	0.90	0.87	0.87
			France	0.61	0.59	0.60	0.59	0.57	0.57	0.61	0.61
			Germany	0.96	0.93	0.96	0.96	0.95	0.95	0.95	0.96
			Italy	0.48	0.47	0.47	0.47	0.45	0.45	0.48	0.48
			Netherlands	0.53	0.52	0.53	0.53	0.53	0.53	0.53	0.53
31	Telephone call	1	Belgium	3.00	2.96	3.02	3.01	3.22	3.29	2.92	3.01
			France	3.06	2.95	3.04	3.02	3.08	3.15	2.99	3.06
			Germany	2.39	2.31	2.39	2.37	2.37	2.38	2.34	2.41
			Italy	2.01	1.95	2.00	1.99	1.97	2.02	1.96	2.01
			Netherlands	1.32	1.28	1.33	1.31	1.33	1.33	1.30	1.32
33	Women's shampoo set	1	Belgium	69.00	69.37	69.36	69.14	70.21	70.12	69.43	68.49
			France	76.30	75.80	77.08	76.71	77.71	77.72	75.42	76.16
			Germany	43.86	43.68	44.09	43.90	44.12	44.22	43.67	43.86
			Italy	33.01	32.63	33.28	33.12	33.83	34.17	32.27	32.97
			Netherlands	39.70	39.20	39.98	39.66	40.36	40.68	39.42	39.71

N.B. The price variations taken into account are not those of the individual product, but of the sector to which it belongs.

TABLE 76

Average simple differences in relation to initial prices and changed prices based on the various hypotheses concerning financing, expressed as percentage of the average of retail prices

Sector	Product	Average simple differences							
		Between initial prices	Between prices changed on basis of various hypotheses concerning financing						
			A 1	A 2	A 3	A 4	B 1	B 2	C
1	Wheaten flour	16.11	15.06	15.89	15.96	17.03	16.07	15.22	16.17
5	Petrol	23.52	27.08	23.71	24.24	26.18	25.61	28.73	25.77
6	Window glass	22.90	22.47	23.00	22.72	22.87	23.01	22.69	22.76
7	Veal cutlets	18.24	17.85	18.10	18.30	18.44	18.42	17.82	18.30
8	Macaroni, etc.	16.52	16.98	16.51	16.41	15.87	15.47	17.11	16.56
9	Pale ale	10.04	13.83	10.06	15.89	9.99	10.06	11.95	10.12
10	Cigarettes	47.62	47.88	47.48	47.83	47.14	47.16	45.40	49.18
11	Material for sheets	13.50	14.66	13.95	13.86	14.26	13.92	14.31	13.84
12	Men's lounge suits	27.60	27.97	27.52	27.53	26.59	26.53	27.92	27.85
13	Men's town shoes	12.60	13.05	12.31	12.39	12.39	12.74	13.50	12.66
14	Bedroom suite	23.02	23.62	23.16	23.11	23.09	23.29	23.76	23.14
15	Exercise book	32.39	32.39	32.52	32.39	32.52	32.65	32.52	32.39
16	Daily paper	13.82	9.35	9.26	9.26	9.30	13.82	9.30	13.82
17	Rubber ball	45.78	45.45	46.06	46.14	46.50	46.14	45.62	45.78
18	Plastic bucket	34.06	34.68	34.06	34.25	34.65	34.84	34.48	34.15
24	Radio	23.39	23.81	22.99	23.05	22.59	22.87	23.92	23.41
28	Electricity	27.03	25.24	26.94	27.03	27.21	27.21	30.20	26.94
29	Normal tariff on railway	43.48	44.12	43.48	44.12	44.78	44.12	43.48	43.48
31	Telephone call	38.14	39.30	38.14	38.46	41.84	41.15	39.13	50.85
33	Women's shampoo and set	44.30	44.69	44.35	44.37	44.11	43.65	44.77	44.04

N.B. The price variations taken into account are the net percentages and relate not to the prices of the individual product but to the price for the whole sector to which the product belongs.

473. It will be found that for the 20 sectors used, hypotheses A.1, B.1 and C are accompanied by an increase in the average difference in 13 cases, for hypothesis B.2 this increase occurs in 12 cases, for hypotheses A.3 and A.4 in 11 cases and for hypothesis A.2 in only 8 cases. To sum up, this second survey seems to show that for 6 of the proposed financing hypotheses, an increase in the price movements would be found in most sectors.

It should be pointed out that in this second sample the consumer goods and services studied differed from those in the previous sample; moreover, the countries from which the prices of goods were taken were not the same in both samples and that is why the results do not correspond to those in the first sample.

474. As already said, genuinely significant results could have been obtained only if complete, precise statistics for prices were available; it is therefore advisable to point out that the conclusions drawn from these two samples cannot be considered to be of general validity.

One further conclusion can be drawn from the survey carried out: when the data for the matrices are being collected, the statistics required for solving the problems under examination must also be prepared.

CHAPTER VII

Social security, the current economic situation and economic growth - Reciprocal effects

I - Problems of method

475. Social security receipts and expenditure in the member countries of the Common Market are bound to have considerable effects on the evolution of the current economic situation and growth, on account of their major quantitative importance alone (assessed, for instance, from the proportion of the national product they represent).

However, it is very difficult to find a method for ascertaining these effects.

476. From the methodological point of view it would be satisfactory to compare the trends in the current economic situation and economic growth under the various social security systems with the situation and growth which could be expected in the same national economies if those systems did not exist, and to define the difference in development as representing the effects of social security. But such a comparison could only be a very imperfect instrument for analysing these effects; in particular, it is impossible to quantify them for the following reasons:

477. When any measure taken under economic or social policy entails changes which are comparatively marginal and have no fundamental impact on the body of data on which the economic planning is based, it is justifiable to assume that the measure concerned brings about no fundamental change in the behaviour of the factors which influence the economic situation and growth (e.g. consumption and investment) and which are often known only empirically. We can then carry out significant and fairly accurate quantitative assessments of the effects of these marginal changes, such as, for example, changes in the contribution rate, a specific type of benefit, or a taxation scale. But this assumption of relative constancy in the behaviour of these factors becomes untenable when all the data guiding the behaviour of those involved in the economy undergo a radical change as a result of far-reaching economic and social reforms. Yet the social security systems now in force in the Member States of the European Economic Community are of such fundamental and vital importance for the entire economic order that without them it would be impossible to provide anything but vague suppositions concerning the behaviour of the population.

478. In view of our lack of knowledge regarding the situations our European economic systems would be in if there were no social security schemes there is a temptation to resort to an expedient which is frequently proposed and which consists in comparing developments in the current economic situation and growth obtaining in our countries with those which can be observed in countries with only rudimentary social security systems.

It is, however, very doubtful whether such comparisons do supply any conclusive evidence regarding the effects of social security on the current economic situation and growth since, in general, those countries with elementary social security systems also differ from our own in many other major factors connected with their economic situations and growth: this is particularly true of the developing countries, where the entire economic and social structure, the patterns of behaviour and the economic policy are completely different from those found in Europe. But in developed countries, too, where the ratio between social security benefits and the national product is low (such as the United States and also Australia and Canada), many of the factors which have great influence on the current economic situation and growth—for instance, national product per head, the proportion of employed persons, the age structure of the population, the numbers employed in industry and agriculture respectively—may also differ considerably from the relevant European ones. In view of all these differences, to isolate the significance of any single element of social security would appear to be possible only on the basis of highly problematic hypotheses.

479. A series of econometric models for the economic situation and growth are available for some countries and for various periods. One could be tempted to quantify the effects of social security on the economic situation and growth by using such econometric models. Unfortunately, the models available do not seem suitable for this. A considerable number of them have been established for much earlier periods, particularly before the Second World War (such as the models made by J. Tinbergen, C. Clark, E.A. Radice, L.R. Klein and A.S. Goldberger); their validity for the present day is therefore doubtful, because of the changes in behaviour which have occurred in the meantime and, in particular, the entirely transformed short-term economic policy. Moreover, most of them relate to countries outside the Common Market

(this is true of all the models mentioned except Tinbergen's). But, above all, these models do not make explicit allowance for the social security sector, and so its effects cannot be quantified from them.

Any attempt to establish econometric models which explicitly take account of social security would have exceeded the scope of this survey. To establish the hypotheses which would be required for formulating such models and which relate to the significance of social security for the various behaviour functions, it would be necessary to have empirical data concerning this behaviour under social security systems whose stages of development in the EEC countries vary considerably. For the reasons stated above, there are no such data for the recent period in these countries. It should also be noted that in recent years the Common Market countries have not experienced any really extreme or persistent recessions: this in itself explains the lack of data for the effects of social security schemes on the economic situation during such a phase of the economic cycle.

480. Moreover, if we refer to the results of the analyses in Chapter III concerning the problem of passing on charges, according to which the effects of social security measures upon the economic circuit greatly vary depending on the economic policy being followed, and if we allow for the fact that in the Common Market countries (and to some extent owing to the influence of the EEC) this economic policy is in a constant state of evolution, it is impossible not to be even more sceptical regarding the feasibility of establishing generally valid econometric models for the effects of social security.

481. As opposed to this present chapter, in the earlier ones it was possible to provide an approximate quantification of the effects of social security. This, however, could only be done subject to the following restrictions:

a) Assumption as constant of values which, owing to the interdependence of the values in the cycle, should in fact also be varied in parallel with the values that are presumed to be changed: this method has been employed in Chapter II for assessing the effects of redistribution when, for the purpose of simplification, the amount of the national product and the distribution of factor income have been assumed to be independent of the social security schemes;

b) Analysis of the effects merely of partial changes in the social security schemes in force but not their overall incidence; this was applied in Chapter III, for example with regard to the processes for passing on charges, and in Chapter VI when comparing the various types of financing constant social security benefits. On account of this assumption of changes which are to varying extents marginal, it has been possible here to justify as initial approximations the hypotheses on which the calculations are based (for example, constant consumption and production functions);

c) Allowance solely for immediate influences, excluding long-term overall effects. It was possible in Chapter VI to quantify the direct effects on costs of changes in the financing systems, assuming that the production functions for the sectors remain constant. If it was desired to assess the long-term overall effects, consideration would have had to be given to the fact that the effects on costs would change the whole national product and its distribution, and thus the demand structure and prices, which, in turn, would alter the production functions. However, the empirical data available would have proved inadequate for assessing these overall effects on a more long-term basis.

482. These deliberate limitations to merely partial changes, short-term effects, or the assumed invariability of values in the cycle which are, in fact, interrelated are not permissible when it comes to analysing the effects of social security on the current economic situation and growth, since they necessarily depend upon all the overall effects (both the most immediate and the most long-term ones) on all the data, all the forms of behaviour and all the values in the cycle. This in itself makes it impossible to quantify the effects here as in Chapters IV, V and VI—though there, too, only a very imperfect limitation of the analysis on the principles stated in (*a*) to (*c*) was permissible.

483. These methodological difficulties have led to the following conclusions concerning the present analysis: By and large, there must be no attempt at quantification. No effort can be made to ascertain the significance of social security for the successive phases of the economic cycle by comparisons between national economies with social security systems and national economies without them, since it is impossible to formulate sufficiently well-founded concepts for this latter, fictitious, group of national economies.

We intend instead to assess the effects of the existing social security systems on the current economic situation by studying whether the cyclical fluctuations in receipts, expenditure and capital investment intensify, weaken or fail to influence the cyclical fluctuations in the overall national product.

In order to study the effects of social security upon economic growth, we shall summarize the results of all these earlier chapters (which all implicitly relate to the question of economic growth) from the point of view of growth and evaluate their significance by employing valid economic production functions.

II - The effects of social security on the current economic situation

A - GENERAL CONSIDERATIONS

484. In examining the effects of social security on the current economic situation, what is to be understood by the term "current economic situation"?

It is undeniable that evaluations can no longer be based on periodic variations in economic activity in the sense of regular cycles with more or less constant duration and degrees of fluctuation in employment, incomes and prices (the Kitchin, Juglar, Kondratieff and Wellen cycles), and that any attempt to calculate valid indices for every cycle with the intention of characterizing the respective phases of the economic situation (e.g. Harvard's economic barometer) is bound to be abortive. This is all the more true since the "Keynesian revolution" in the national economies has gradually caused a more or less effective policy of full employment and stabilization to be taken for granted in every Western country, so that it is now impossible to speak of a "cycle" of economic activity in the strict sense of the word. Yet in scientific and in everyday terminology there can be generally accepted criteria, which are useful for the purpose of this examination, relating to temporary "states of tension" and "imbalances" in the economy, and such criteria will be employed in this chapter.

485. An "economic boom", "over-heated economy" or "final phase of economic expansion" occurs when full employment of the available labour potential (without long-term unemployment due to structural factors) and of the technical production capacity is assured and when the nominal income and total demand within the framework of the national economy are increasing more rapidly than the real national product.

We speak of "recession", "depression" or "period of decline" when, apart from long-term unemployment due to structural factors, the labour potential and technical production capacities are underemployed, and the nominal income, total demand and real production are lower than the real national product which could be provided by the production factors available.

Following these definitions, the analysis will be centred on the question of how social security receipts and expenditure evolve during these two situations of imbalance and whether fluctuations in the receipts and expenditure influence the overall economic demand, and consequently employment, by increasing or reducing the imbalances.

486. The effects of social security on the development of the economy will therefore be characterized as follows: (1)

Economic expansion. If, in a phase of economic expansion, the overall demand of the national economy is:

a) reduced by social security, this has an anti-cyclical effect, (2)

b) increased by social security, this has a pro-cyclical effect,

c) unaffected by social security, this has a neutral effect.

Economic decline. If, in a phase of economic decline, the overall demand of the national economy is:

a) increased by social security, this has an anti-cyclical effect,

b) reduced by social security, this has a pro-cyclical effect,

c) unaffected by social security, this has a neutral effect.

487. If, in the fields of economic and social policy, only a short-term economic view is taken, the strongest possible anti-cyclical action by social security would always be desirable in the phases of high tension.

Even if social security is assessed strictly from the standpoint of short-term economic policy, it may seem sufficient for its impact on the current situation to remain neutral in phases of minor imbalance. On the other hand, in the event of major tensions occurring in the economy, a pro-cyclical influence would by the same reasoning always be undesirable.

488. At this stage, however, it must already be emphasized that social security is first and foremost an instrument of social policy and not of short-term economic policy, and that the aims of these two policies may clash. Nor must it be forgotten that social security is also important for other economic aims such as for example, those relating to distribution or growth policies, and that there may be conflicts between these objectives and those of short-term economic policy which may prevent both groups of objectives from being attained concurrently.

When such conflicts of interests are present, the objective formed by the assistance rendered by social security in

(1) Since, moreover, the financial evolution of social security is dependent on the evolution of the current economic situation, and the current economic situation and the financial position of social security are thus interrelated, the current economic situation does have simultaneous effects, and thus a reciprocal incidence, on social security.

(2) As stated above, the terms "anti-cyclical" and "pro-cyclical" do not imply that the fluctuations have regular duration or range. These terms are simply a convenient means of describing "incidence which reduces imbalance" (i.e. anti-cyclical) or "incidence which enhances imbalance" (i.e. pro-cyclical).

stabilizing the current situation may be less important than the other objectives which are liable to be compromised by an anti-cyclical development of social security.

489. The real significance of such conflicts between different objectives will be considered in detail farther on in this chapter.

At all events, it must be understood that an anti-cyclical effect of social security is unconditionally desirable only if it prejudices no other major objective.

Moreover, allowance must be made for the possibility that, despite social security's inherent suitability as an instrument for stabilizing the current situation, other instruments of economic policy may be even more appropriate, so that it may prove unnecessary to reorganize social security in order to produce more effective anti-cyclical action. This point will also be examined in more detail later.

490. An attempt will be made to show that the form of the above-defined effects on the current economic situation depends upon the following factors:

— The sensitiveness of social security benefits to the current economic situation:

1. Sensitiveness of the risks insured under social security to the current economic situation;

2. Sensitiveness of the assessment bases for benefits to the current economic situation.

— The sensitiveness of receipts from social security contributions and taxation to the current economic situation.

1. Sensitiveness of the number of insured persons to the current economic situation;

2. Sensitiveness of the assessment bases for contributions to the current economic situation.

— Financing methods.

— Methods of investing surplus receipts and financing deficits.

B - SENSITIVENESS OF SOCIAL SECURITY BENEFITS TO THE CURRENT ECONOMIC SITUATION

491. If, for any given social security receipts, an examination is made of the short-term economic significance of fluctuations in social security benefits during the phases of the economic cycle, it will be found that these fluctuations depend first and foremost upon:

1. The sensitiveness of the risks insured under social security to the current economic situation (i.e. the dependence on the current situation of the number of cases of benefit granted when the amounts remain constant in each case);

2. The sensitiveness of assessment bases for benefits to the current economic situation (i.e. fluctuations, conditioned by the current situation, in the amount of benefit per case for a given number of cases).

492. From the point of view of the current economic situation, it would be desirable if the combined effects of these two factors were to cause a reduction in benefits when the economy is overheated and an increase when it is in recession.

If a wider view is taken, it would at least be advisable from the short-term economic aspect to aim at a situation where, in a period of peak economy, the two factors together induce a growth rate of benefits which is less than the growth rate of the gross nominal national product and where, in a period of recession, the downward rate of benefits is less than that of the nominal national product.

493. The sensitiveness of the risks and of the benefit assessment bases to the current economic situation will be examined below from this angle, first of all separately and then as regards their combined effects.

1. *Sensitiveness of the risks insured under social security to the current economic situation*

Social security benefits may be granted for individual cases which are dependent on or independent of the current economic situation.

a) Risks with an anti-cyclical reaction

494. These are risks which are liable to cause a decrease in the number of individual cases of benefit granted during an upward movement of the economy and an increase during a downward movement. Unemployment and partial unemployment constitute particularly anti-cyclical risks of this sort. The graphs on the following pages illustrate the wide range of the contrary movements of the annual rates of change in the real national product and in average unemployment figures in the Federal German Republic and Italy since 1955.

Yet, in principle, mention should be made here of all the sectors in which entitlement to social security benefits is allowed only to persons who do not obtain a specified minimum income from other sources, especially

from work, and in which that minimum income is more often attained or exceeded in a favourable economic situation than in an unfavourable one.

495. In particular, we would cite at this point public assistance, grants for training, further training and retraining, rent subsidies and other family benefits linked to income.

It must be pointed out that some risks which are formally independent of the current economic situation nevertheless have a *de facto* anti-cyclical effect; for example, disablement and premature invalidity do not, in principle, depend on the current situation, but it has been observed in Germany that when unemployment increases there is a greater tendency to apply for pensions on the grounds of disablement or premature invalidity than when the employment market is good. (1) The third of the following graphs illustrates this anti-cyclical movement.

b) Risks with a pro-cyclical reaction

496. These are risks which, in principle, cause an increase in the number of cases of individual benefit during an upward movement of the economy and a reduction during a downward movement.

Examples of these are accidents at work and certain short-term occupational illnesses which have a positive connection with the level of employment in the national economy. To them should also be added those cases where social security pays out subsidies for commitments which the beneficiary undertakes only when he has a guaranteed income from his work during a favourable economic period. In the field of family benefits, there are the building subsidies for owner-occupiers or, in Germany, the measures which, by means of unemployment insurance, are intended to encourage winter building and which would only be effective during periods when building is booming.

However, all in all the significance of risks with a pro-cyclical reaction within the social system is certainly not very great.

c) Risks without effect on the current economic situation

497. There are many risks covered by social security whose occurrence is hardly affected, if at all, by fluctuations in the economic situation: these include old age, disablement and inability to work (with the reservation mentioned above), the large majority of illnesses, family allowances and, essentially, all eventualities where benefits are granted irrespective of the beneficiaries' income from work (e.g. family allowances).

d) Overall evaluation of the sensitiveness of risks to the current economic situation

498. If the significance of the various forms of risks insured under social security is evaluated, it can be said that, as regards the number of individual cases, most of the major financial risks have no effect on the current economic situation, and the other risks with an anti-cyclical reaction—especially unemployment— are more influential than the less important pro-cyclical risks.

When the benefits remain constant for each individual case, it can therefore be assumed that the sensitiveness of the risks to the current economic situation would, taken as a whole, lead to an anti-cyclical development in social security benefits.

It is important to note that this anti-cyclical effect of risk development, which is based primarily on the evolution of unemployment, very rapidly exerts a corresponding effect on the current situation. There is therefore no occurrence here of the long and very disruptive time-lag between the planning and taking effect of anti-cyclical measures, a time-lag which is frequently found in short-term economic policy and results in the situation where measures which, when planned, were well-advised from the current economic point of view, have long since become undesirable from that point of view by the time they come into force. This absence of a time-lag makes unemployment insurance a particularly reliable instrument for stabilizing the economy.

2. *Sensitiveness of the assessment bases for benefits to the current economic situation*

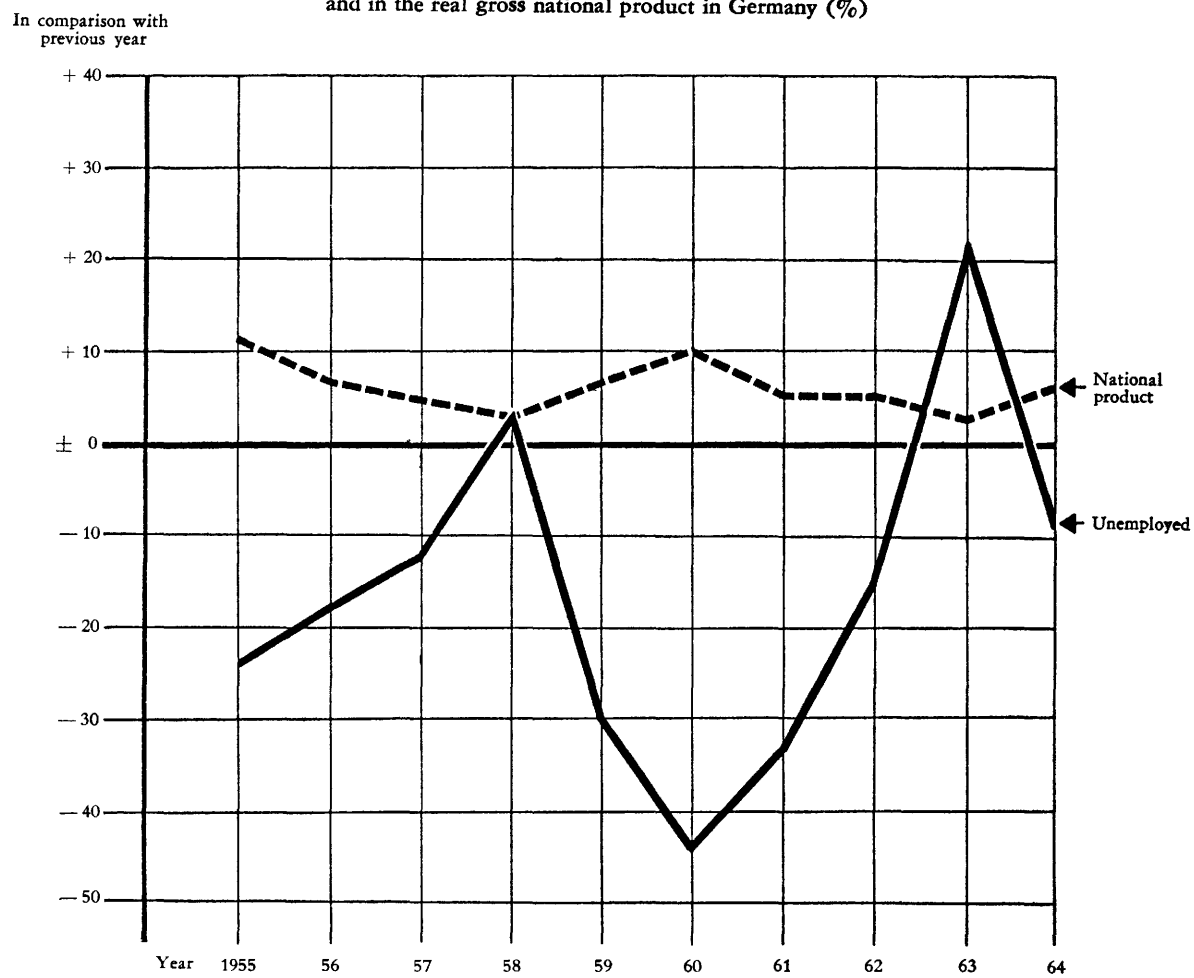
499. Even when a risk is neutral in its effect on the current economic situation, the form of the assessment basis may set off a pro- or anti-cyclical movement of the expenditure on social security benefits.

a) Anti-cyclical assessment bases

500. If by anti-cyclical assessment bases is understood those which, during an upward movement of the economy, lead to a reduction in benefits per case and, during a downward movement, cause an increase in those benefits, the following examples can be given:

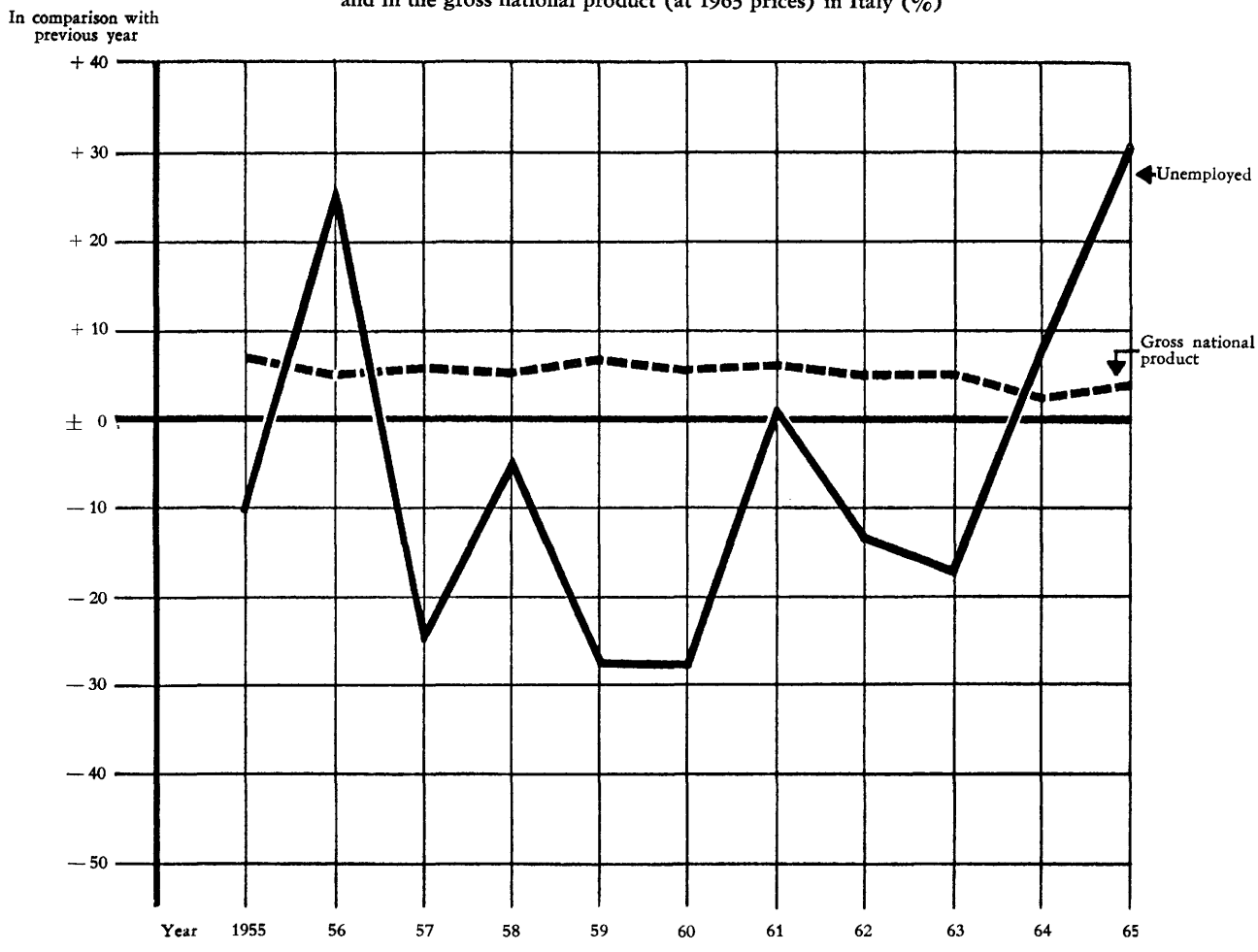
(1) Schewe, D. & Zollner, D.: *Die vorzeitige Invalidität in der sozialen Rentenversicherung* (Premature invalidity in social pension insurance). Berlin, 1957, Sozialpolitische Schriften, No. 9.

Annual rates of variation in the average number of unemployed and in the real gross national product in Germany (%)



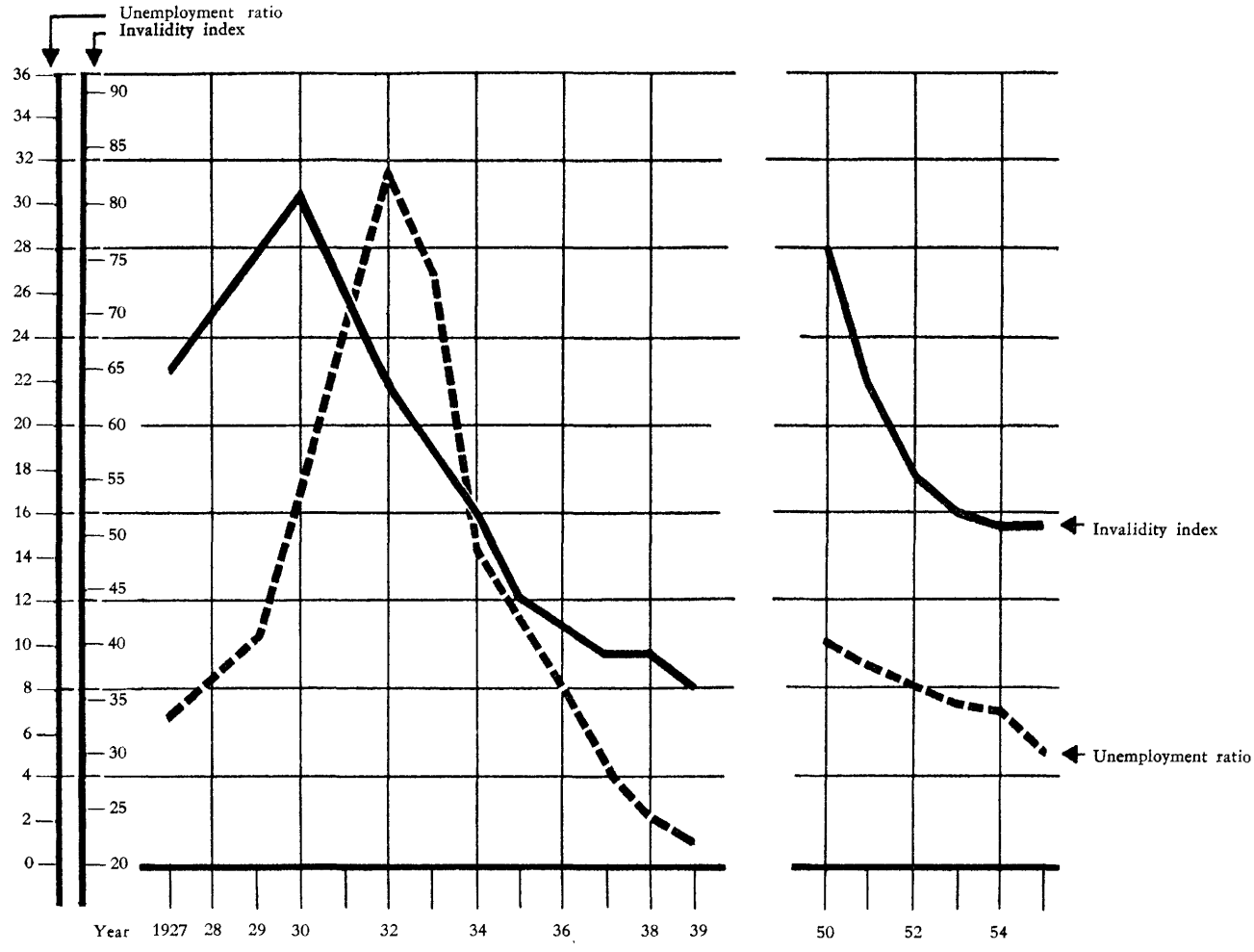
Source: Stat. Jahrbuch für die Bundesrepublik Deutschland 1965, pp. 151, 552.

Annual rates of variation in the average number of unemployed and in the gross national product (at 1963 prices) in Italy (%)



Source: Istituto centrale di statistica: I conti nazionali dell'Italia, supplemento al Bollettino mensile di Statistica, No. 3, March 1966 and Rilevazione nazionale delle forze di lavoro, 1954-65.

Unemployment and invalidity frequency in Germany



Source: Schewe, D. and Zöllner, D.: Die vorzeitige Invalidität in der sozialen Rentenversicherung, Berlin 1957. Sozialpolitische Schriften, No. 9, p. 38.

During a period of recession, it would be advisable in principle to use assessment bases which enable benefits to follow, with a short time-lag, the evolution of factors which increased during the preceding period of expansion, for example, wages, salaries and price indices. To ensure effective anti-cyclical influence the time-lag must, of course, correspond exactly with the duration of the periods of the economic cycles. Since the duration of the expansion and recession phases varies greatly from cycle to cycle, the assessment bases for benefits which, with a specific time-lag, follow the evolution of factors that are subject to pro-cyclical fluctuations, such as wages, salaries or prices, are not certain to have an anti-cyclical effect. For instance, if social insurance pensions are, in principle, adjusted to the large wage increases recorded during a period of upward movement, such adjustment being subject to a time-lag of two years, that time-lag will have an anti-cyclical effect when the economic situation is unfavourable after those two years. On the other hand, it will have a pro-cyclical effect if, in the meantime, renewed expansion has followed a period of decline.

501. This difficulty has manifested itself clearly in the Federal German Republic where, in some branches of social insurance, an attempt has been made to adjust the benefits to the incomes of the working population in a manner as well-suited as possible to the needs of the current economic situation. For the legal invalidity and old-age insurance schemes in the Federal Republic, the general basis of assessing current pensions consists in adjusting them, in principle, to the variation in the sliding average of gross wages over the previous three years. This time-lag in adjusting pensions leads to their increase during recessions, even when the incomes of the working population have ceased to rise. This anti-cyclical effect fails to occur only during very lenghty recessions.

During a period of expansion, the three-year sliding average of wages, which is taken as the assessment basis, would probably lead to immediate pro-cyclical increases in benefits.

502. The assessment basis of the German pension schemes would have to be determined somewhat differently if, during periods of expansion, an increase in pensions which was slower than the increase in wages and salaries and, during recessions, an increase in pensions which was quicker than the increase in wages and salaries were both pronounced as having an anti-cyclical effect. In accepting this principle, the Federal Republic believed that it had established an automatic instrument for stabilizing the economy by adjusting pensions in the manner described above. During a recession, pensions would be increased even more, as a result of adjustment to the average of the high wage rises which occurred during the immediately preceding years when the economic situation was favourable. Conversely, during a peak period pensions would be increased only at a rate determined by the slower evolution of the average wage during the previous years when the economic situation was less favourable. But this hypothesis postulates a regular economic cycle whose duration remains constant. Since this condition is virtually never fulfilled, the above expectations are not realized. On the contrary, urgently desired lulls in the economic situation after long periods of excessive increases in nominal wages have sometimes been endangered by the fact that a move towards slowing down the evolution of wages was offset by the time-lag in adjusting pensions to the disproportionate evolution of wages during the previous years. That is why, in the matter of the basis for assessing benefits, there is now an increasing tendency in Germany to forego this long time-lag, whose effects on the economic situation are unforeseeable, and to adjust old-age, invalidity and survivors' pensions to the wage increases of the previous year, as is done in the case of legal disablement insurance. Such an adjustment of social security benefits to factors which increase during periods of expansion and decrease during periods of decline and, moreover, with a comparatively shorter time-lag, may have short-term anti-cyclical effects during the transition from a favourable to an unfavourable situation and vice versa. However, during lengthy periods of expansion or recession, such assessment bases will, in general, have pro-cyclical effects.

503. In some branches of social insurance, several Common Market countries keep benefits in line with the evolution of the economy by adjusting them to wage increases or rises in the cost of living at irregular intervals without formally following the trends in specific indices. This is done in the case of cash benefits for accident insurance in Italy, Belgium, the Netherlands and Luxembourg, old-age pensions in the Netherlands and, hitherto, pensions to war victims in the German Federal Republic. In applying this method, it would be conceivable to synchronize these adjustments with the requirements of short-term economic policy.

In France the Social Security Benefits Committee of the Fifth Plan has proposed that benefits as a whole should be periodically programmed in conformity with the economic (and not merely the short-term economic) potential. Should this proposal be adopted, and provided the experiment is not endangered by opposition from management or labour, it would also enable social security benefits to be varied in keeping with the current economic situation.

504. In the Federal Republic, legislators in the field of the statutory pension insurance schemes have tried to retain the possibility of adapting the evolution of pensions to anti-cyclical criteria by departing from the principle of linking pensions to indices. This takes place

through the following arrangements: every year a "Social Council" (Sozialbeirat), consisting of independent members, must state its opinion as to whether, allowing for "productivity, national income per head of the working population, and economic capacity", adjustment of pensions to the changed gross wages or salaries of the insured persons is advisable in the interest of the national economy. Thus, this council may recommend that pensions should not be increased during boom periods but, on the other hand, should be increased to a particularly large extent during recessions in order to restore purchasing power.

505. However, in Germany as in the other countries, experience has shown that, especially in peak economic periods, there is a conflict between the aims of the social and short-term economic policies; it is, in fact, when the economy is over-heated that price rises are inclined to occur, causing particularly great hardship for pensioners, who represent a relatively poor section of the population. Under these circumstances it seems unthinkable from the point of view of social policy to make pensioners bear the brunt of stabilizing the economy by not increasing pensions, and, during a period when wages and salaries are rising rapidly, to distribute incomes in such a way as to penalize one of the weakest social classes. Thus, even when demand has well outstripped actual production potential, the German Social Council could not bring itself to recommended that pensions should not be raised for reasons of short-term economic policy. Consequently, the Bundestag has made regular annual increases in social insurance pensions.

The conflict in the social security field between the aim of social policy, which consists in increasing benefits as regularly as possible in the event of general economic growth, and the aim of short-term economic policy, which consists in at least slowing down the increase in benefits, if not actually reducing them, occurs not only in the Federal Republic but also in other EEC countries. It is an insoluble problem.

506. The primary role of social security lies in the field of social policy and not short-term economic policy. If, when the economy is over-heated, there is a conflict between the aims of these two policies, the former are frequently more important than the latter. Consequently, owing in particular to the fact that the income of many persons receiving benefits is still often rather small, it does not seem justifiable to slow down increases in social security benefits in order to stabilize the economy unless, at the same time, the other instruments of short-term economic policy assist in curbing the evolution of the nominal income of every social group in all the other sectors of the economic cycle. Until this condition is fulfilled, the possibility of thus using social security benefits to help stabilize an over-heated economy must appear in a very unfavourable light. It is important to note here that periods of over-heating have been much more persistent and intense than recessions in the economic history of the post-war period. From the political point of view, it is very difficult to refuse increases in benefits during boom periods when such increases are considered necessary on a medium-term basis for reasons of social policy, and to envisage making up for this during a recession, when the moment at which a serious recession will commence is completely unpredictable and probably far off. Any medium-term planning for social security benefits which fits in with the aims and means of a medium-term overall economic plan could mitigate this basic conflict between the aims of the social and short-term economic policies during periods of over-heating. Under ideal conditions, efficient planning of this kind could reduce the fluctuations in the current economic situation to such an extent that they could be dealt with adequately by means of the instruments of short-term economic policy available in sectors other than social security. By co-ordinating the use of all the instruments, including social security, it would then at least be possible to confine the anti-cyclical reductions in social security benefits within such limits as would not fundamentally jeopardize the aims of social security. However, so long as no planning, however efficient, can prevent considerable fluctuations in the current economic situation, no complete solution to this conflict will be possible.

507. On the contrary, it must be expected that the assessment criteria will be deliberately amended in an anti-cyclical direction during periods of recession when no conflict between the social and short-term economic aims stands in the way of an increase in social security benefits. It seems more likely that, in view of the often socially inadequate level of many benefits, the need to catch up on the demand for benefits, which had previously only been opposed with difficulty, will be satisfied more rapidly when short-term economic considerations no longer militate against such an operation.

b) Pro-cyclical assessment bases for benefits

508. Pro-cyclical assessment bases are bases which induce an increase in social security benefits during periods of economic expansion and a reduction during periods of recession.

These include assessment bases which, with a short time-lag, follow the trend in wages. In every Common Market country the cash benefits provided under sickness insurance and, in France, Luxembourg, the Netherlands and Germany, the cash benefits under unemployment insurance, are dependent on the wages or salaries received before the illness or unemployment occurred. Short-term adjustment of pensions to the trends in wages and

salaries is carried out in France, Germany and Luxembourg in the accident insurance sector, and in France and Luxembourg for old-age, invalidity and survivors' insurance. Practically all social security benefits in Belgium, with the exception of those granted for industrial accidents, are rapidly adjusted to wage increases.

509. If social security benefits are adjusted to the evolution of wages with a long time-lag, the effects may be pro-cyclical or anti-cyclical, as has been shown by the example of statutory pension insurance in Germany.

Despite the great inflexibility of wages fixed by collective agreement, real wages are usually inclined to fall during recessions so that, as assessment bases for social security benefits, they may lead to a pro-cyclical reduction of the benefits even during recessions.

Adjustment of benefits to increased productivity—a system which is being proposed in many German circles for various forms of social security benefits— would, during a period of expansion, generally lead to a smaller increase in social security expenditure than would be required if benefits were adjusted to nominal wages, which are usually rising at a more rapid rate: this adjustment would not, therefore, have such a strong pro-cyclical effect.

510. Generally speaking, during any period of upward movement, a pro-cyclical effect—in our sense of the term—is also obtained if social security benefits are linked with certain price indices which tend to rise when the production capacity of the economy is exceeded by demand caused by the current economic situation. This system of linking benefits with price indices occurs within the EEC in Belgium for unemployment and old-age insurance and in Luxembourg for old-age insurance. Here again, as in the case of adjustment to increased productivity, the pro-cyclical effect is less than when adjustment is made to the evolution of nominal wages, whose growth rate is higher under favourable economic conditions. Nowadays, the main price indices do not usually drop during less marked recessions: indeed, they may continue to rise. In these periods of recession, the social security benefits which are linked to price indices do not, therefore, have pro-cyclical effects: they may even have a slight anti-cyclical influence.

511. It is very important to note that, despite an assessment basis which is formally without effect on the current economic situation, benefits are frequently distributed with pro-cyclical effects. This occurs when the amount of the benefits depends in practice on the funds available to the social security bodies. Thus, for instance, in the Federal Republic the position of the Equalization Fund for Social Security Charges may improve if, during favourable economic periods, a large number of debtors pay their debts to the Fund prematurely so that the Fund may then grant more indemnities. More important still is the fact that even today the legislature is strongly inclined to make the grants and, above all, the improvement of social security benefits dependent on the funds available to the social security bodies or the State without allowing for the current economic situation. Accordingly, since the financial position of these bodies usually undergoes particular improvement in periods of economic prosperity, there is a tendency to increase social security benefits at the very times which are least suitable for doing so.

512. This attitude has been favoured by the widespread lack of knowledge of the problems involved in passing on charges, which were dealt with in Chapter III. Providing that the additional benefits are financed "soundly" by additional taxes and contributions, and the budgets of the State and social security bodies are balanced, it is believed that the action taken is without effect upon the current economic situation. Our examination of these problems (Chapter III) has shown how mistaken this theory is. We shall return to the subject later when we analyse the financing methods. Owing, again, to lack of knowledge of the problems of passing on charges, which are important for the current economic situation, some politicians are unaware of the conflict of aims between social and short-term economic policies as described above, and, in blissful ignorance, support the social against the short-term economic aims.

513. Hence, to an increasingly greater extent, some social security benefits which are formally immutable (pensions to war victims, social welfare, education grants and other family benefits, etc.) are in fact being progressively adjusted to the evolution of wages and salaries in general or, at least, of prices, with the result that political pressure in favour of making them (even formally) dynamic eventually became irresistible (thus, in the Federal Republic dynamism of accident benefits soon followed dynamism of old-age pensions and it was not long before there was a call for dynamism of pensions to war victims). A soon as such dynamism has been allowed in any one sector of social security benefits, it becomes increasingly difficult for the legislature to refuse it for the remainder.

Anyway, this tendency to dynamize many benefits, either *de jure* or *de facto,* transforms the more or less neutral effects of the benefits on the economic situation—a neutrality which was formerly much more common—into an increasingly pro-cyclical effect. This holds good at all events for favourable economic periods.

During recessions, on the other hand, when formally pro-cyclical factors such as wages or prices are used as assessment bases, benefits cannot be expected to fall proportionately with the drop in the figures employed as references. The social security benefits should then be at least kept at a constant level, or even increased, as has been said above.

514. During this phase of the economic cycle, there will undoubtedly be found some politicians or conservative financial specialists who reject any increase in benefits which is not "covered" by receipts from additional contributions and thus will appear as a deficit because it is not "soundly" financed. During the present recession, nobody in the Federal German Republic has disputed the possibility of increasing benefits in order to help relaunch the economy. But, at the same time, it is claimed that the desire for a long-term increase in the proportion of public investment in the national product makes a deficit-producing increase of investments by the public sector preferable to increasing social security benefits during a period of recession. Generally speaking, however, there is no reason to expect any successful objections to increasing benefits during a period of serious downward movement, objections based on a pre-Keynesian conception of financing or—as in the German case mentioned above—on considerations appertaining to long-term structural policy. As a rule, the social and short-term economic objective of rapidly improving the level of employment—which, under such economic conditions, also corresponds to the aims of social policy, which are promoted by an improvement in the level of social security benefits—carries more weight than all the doubts about increasing benefits. Consequently, in practice, assessment bases which are formally pro-cyclical are also employed at least with neutral effects but, more likely, with anti-cyclical effects upon the current economic situation.

c) Neutral assessment bases

515. These are bases providing benefits which remain unchanged during the successive phases of the economic cycle. They include claims which are determined merely by the amount of contributions paid in the past (the expectancy cover procedure based on the principles of private old-age insurance) and other fixed-sum claims. Rights to repayment of expenses which are not closely linked with short-term economic fluctuations (refund of medical expenses under sickness insurance, many other benefits in kind) also belong to this category.

Yet, as has been said above, many benefits which are, strictly speaking, immutable, are now in reality dynamized and have thus become pro-cyclical, at least during upward movements of the economy.

d) Overall evaluation of the sensitiveness of the benefit assessment bases to the current economic situation

516. It can thus be said that, although a considerable part of the assessment bases for social security benefits formally has no effect, or even has an anti-cyclical effect, upon the current economic situation, in reality the growing tendency to adjust benefits more rapidly to rising wages during a favourable period also increases these benefits in a pro-cyclical direction. Consequently, during phases of prosperity a pro-cyclical variation in the benefits in each individual case is mainly to be expected.

On the other hand, however, during recessions the incidence of the assessment bases applied for the benefits is predominantly anti-cyclical, especially since under these circumstances there is no conflict between the aims of social and short-term economic policies to oppose an increase in benefits.

3. *Evaluation of the sensitiveness of social security benefits as a whole to the current economic situation*

517. The sensitiveness of social security benefits as a whole to the current economic situation is caused by the fact that the risks covered and the assessment bases for the benefits depend on that situation.

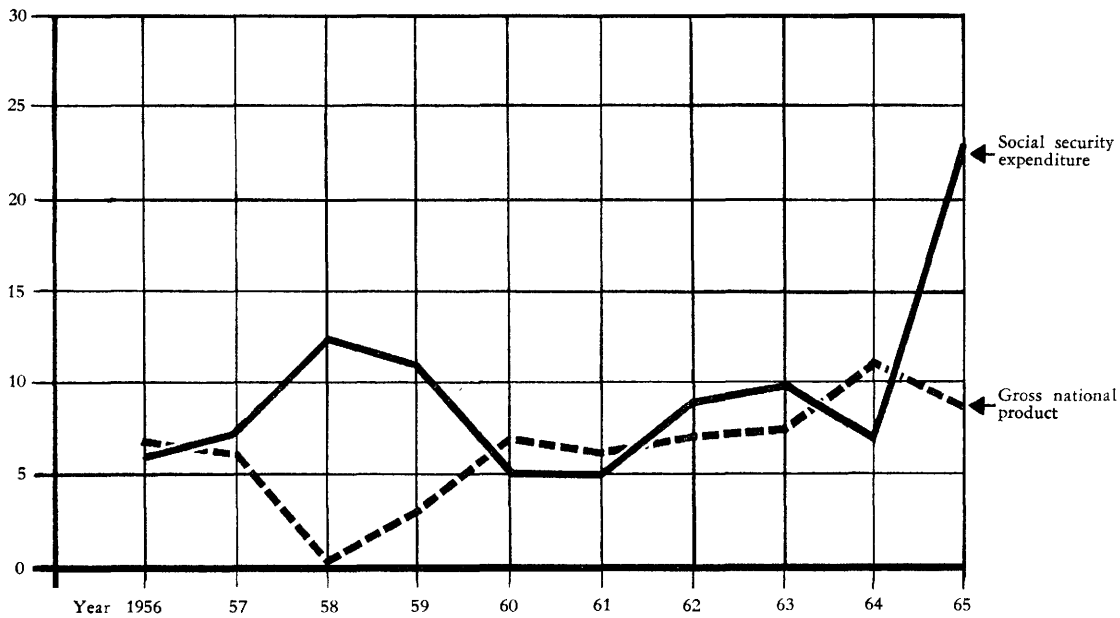
As regards the risks, it has been concluded that their reaction is mainly anti-cyclical; as regards the assessment bases for the benefits, it has been concluded that the evolution is mainly pro-cyclical during periods of expansion and anti-cyclical during recessions. However, during peak periods, the significance of the benefits' pro-cyclical evolution for each individual case is, on average, greater than the anti-cyclical factor formed by the reduction in the number of cases. As we see it, this pro-cyclical increase in benefits during peak periods is based to a considerable extent on a marked and continually growing tendency to adjust the benefits to the earnings of the working population as rapidly and as fully as possible—a tendency inducing a conflict between the aims of social and short-term economic policies which is overwhelmingly decided in favour of the former. This "built-in dynamism" of social security benefits, which has a pro-cyclical effect during boom periods, is enhanced by the very common tendency to raise benefits in parallel with the improvements in financing potential during favourable periods without allowing for the requirements of short-term economic policy. Do the statistics available confirm these arguments?

518. In the graphs opposite, the rate of increase for social security expenditure and the growth rate of the gross national product at market prices are compared for each of the six Common Market countries between 1956 and 1964.

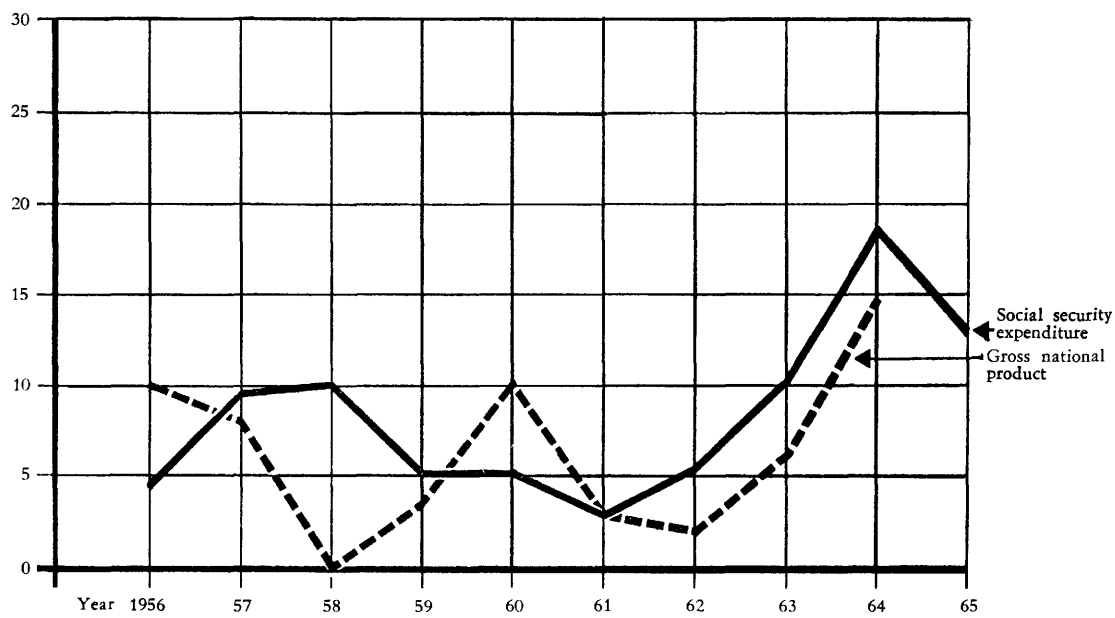
However, caution must be observed when judging the value of this comparison for use in a statistical survey of the relationship between social security benefits and the evolution of the economy.

Growth rates of the gross national product
at market prices and of social security expenditure

Belgium



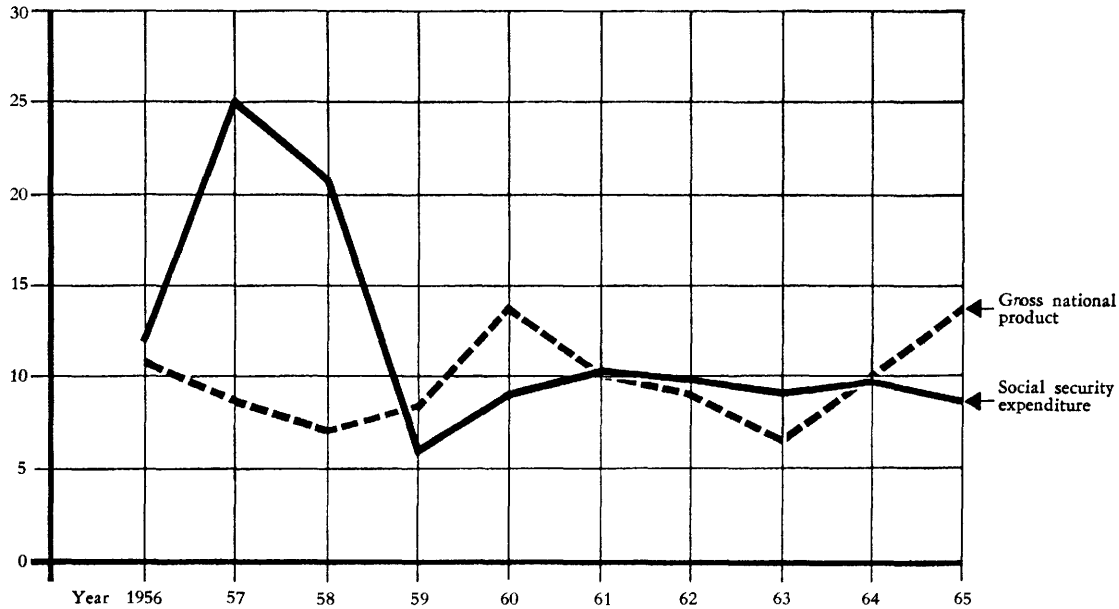
Luxembourg



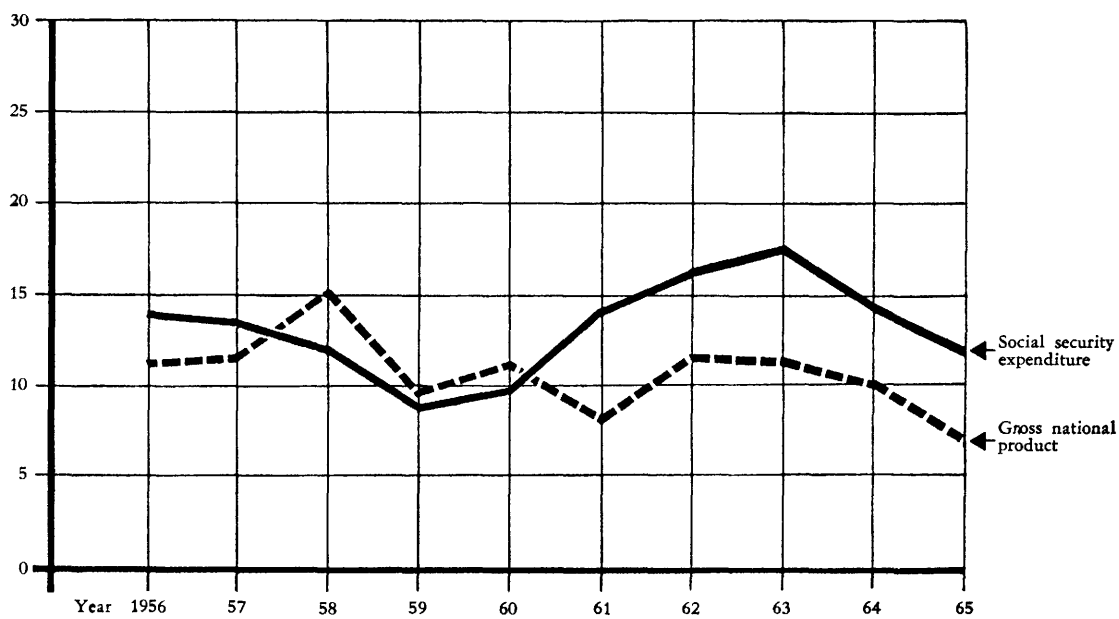
Source: Statistical Office of the European Communities.

Growth rates of the gross national product
at market prices and of social security expenditure

Germany

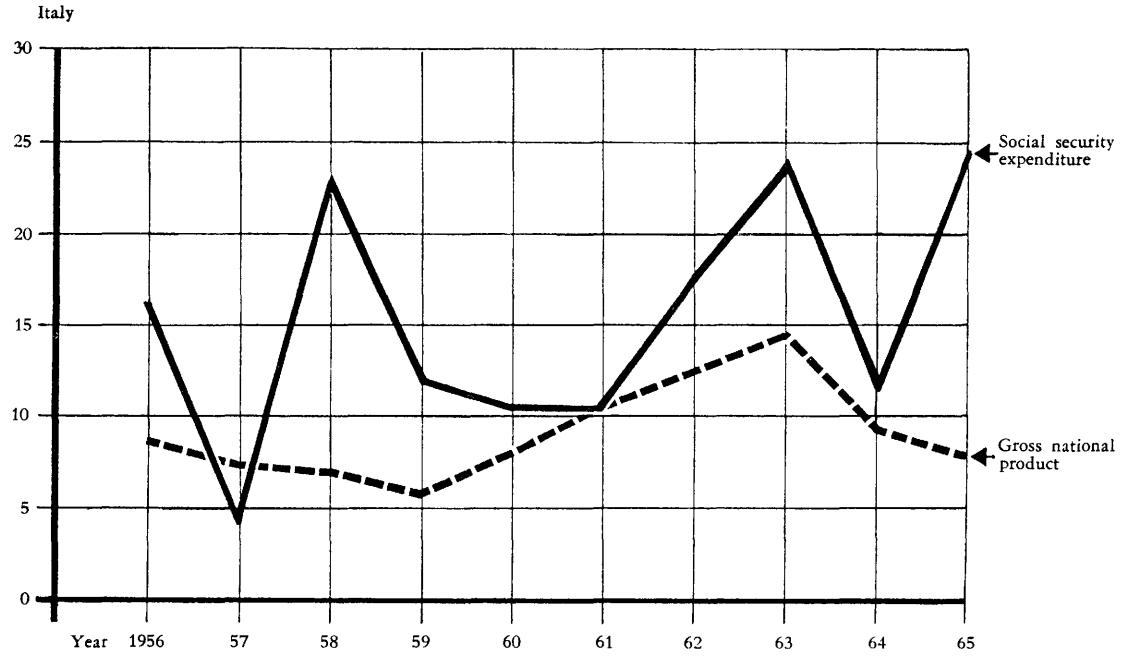


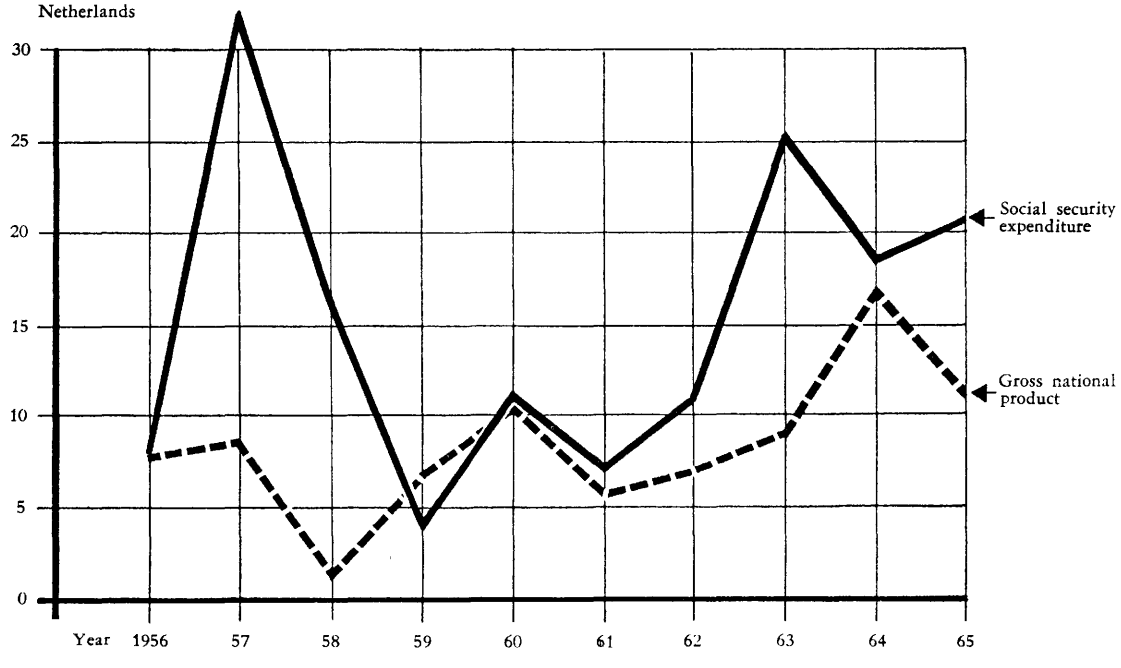
France



Source: Statistical Office of the European Communities.

Growth rates of the gross national product
at market prices and of social security expenditure





Source: Statistical Office of the European Communities.

The growth rates of gross national products give no clear indication of the evolution of economic activity. A fall in these growth rates may—but need not necessarily—coincide with a deterioration in the economic situation but it can also signify that the real growth potential is becoming exhausted during a boom period.

519. The trend in social security expenditure reflects not only the influence of the current economic situation but also and concurrently a trend in the "built-in dynamism" of benefits which is not dependent on the general situation, as well as changes in the aims of social policy and "chance events" such as elections, which are often accompanied by particularly large increases in social security benefits. For all these reasons, during the period in question the benefits systems have always been subject to reforms carried out at irregular intervals and with varying quantitative significance. It would seem pointless to "purge" the total expenditure of all other factors so as to enable the relationships between the phases of the economic cycles and the trend in social security benefits to be calculated in isolation when it is borne in mind that many of the changes made to the social security system which are formally independent of the current economic situation are in fact also conditioned by changes in that situation. Any pension increase occurring in countries where pensions are linked to the wage and salary index should undoubtedly be described as a product of the current economic situation. But should it be said that the system is changed independently of the general situation when pensions are raised in other countries which do not employ that indexing method and increase pensions at irregular intervals and, formally speaking, regardless of wage movements, even though the real motive for raising pensions in those countries—as in the countries employing the index mechanism—is to adjust them to wage rises which have been conditioned by the phases of the economic cycle? That is why we shall not misleadingly "purge" the overall expenditure of "factors which are not dependent on the current economic situation".

520. Moreover, in the analysis of the following statistics, account must be taken of the fact that during the period in question no serious recessions were recorded in the Common Market countries but only, at the most, comparatively short-term slackenings in economic growth (except in Luxembourg, where the national product dropped slightly in 1958). It is, therefore, impossible to provide any statistics whatever concerning the actual evolution of social security during deeper and more lengthy recessions; consequently, as we have done above, we can draw from the structure of the social security system only conclusions relating to its assumed evolution during a serious recession.

521. With due allowance for these limitations to the value of the information provided, the following facts can be deduced from the statistics:

In all six countries social security benefits constantly increased from 1956 to 1964, regardless of the phases of the economic cycle obtaining in the individual years. Thus, according to our strict definition, social security benefits developed pro-cyclically during periods of expansion and anti-cyclically during recessions.

522. If a comparison is made between the growth rates, it is observed that in the Netherlands, Belgium and Luxembourg the rate of increase in social security expenditure was appreciably higher than the growth rate of the national product during a period of greatly slowed-down expansion and even of slight recession (Luxembourg 1958). The anti-cyclical development of benefits during a recession is thus demonstrated particularly clearly here.

During periods of particularly strong growth in the national product, the rate of increase in social security expenditure in the six countries does, by and large, very closely follow the growth rates of the national product and often exceeds them by a wide margin. This can be taken as an indication that, even if a pro-cyclical movement is only understood to obtain when the rate of increase in social security benefits is higher than the growth rate of the nominal national product in boom periods, the evolution of social security benefits would more often be pro-cyclical than neutral or, *a fortiori,* anti-cyclical.

C - SENSITIVENESS OF RECEIPTS FROM SOCIAL SECURITY CONTRIBUTIONS AND TAXATION FOR SOCIAL SECURITY PURPOSES TO THE CURRENT ECONOMIC SITUATION

523. Before we examine the movements of social security receipts in accordance with the current economic situation, it is advisable to define which economy-related fluctations in contributions (including taxation allocated to the security sector) can be described as pro- or anti-cyclical.

When studying the question of passing on charges, we have seen that the incidence of additional contributions varies according to whether or not they are levied in order to increase benefits. If the increased contributions are employed for paying additional benefits, this leads to a pressure which is exerted by the passing on of charges and tends to augment demand (Chapter III, hypotheses 3, 5 and 6). If, on the other hand, the increased contributions are saved up by the social security institutions it will not, in general, be possible to pass on those charges

(Chapter III, hypothesis 5) and the overall demand will tend to decline. For this reason, when the contributions are examined in isolation (hypothesis of stable benefits), increased receipts from contributions can be reckoned as anti-cyclical when business is booming and pro-cyclical during a recession. By analogy, a reduction in receipts from contributions should be considered pro-cyclical when business is booming and anti-cyclical during a recession.

The manner in which social security receipts vary during the various phases of the economic cycle depends upon:

1. the sensitiveness of the number of insured persons to the current economic situation;

2. the sensitiveness of the assessment bases for contributions to the current economic situation.

1. *The sensitiveness of the number of insured persons to the current economic situation*

524. a) For any given scales of contributions and taxation, an increase in the number of insured persons during a period of expansion and a reduction in that number during a period of decline would have an anti-cyclical effect.

The main sources of finance—i.e. the contributions by employed persons and employers, as well as most of the taxes allocated for financing social security schemes—are provided by a working population whose number varies anti-cyclically in the sense defined above.

525. b) The limits for compulsory insurance have a pro-cyclical effect if the number of persons whose incomes exceed those limits increases when the economy is in expansion and decreases when it is in recession. However, this factor is only of secondary importance, especially since there is a tendency to adjust the limits to the evolution of earned incomes.

526. c) A factor which is neutral in its effects on the economy is the number of persons who help to finance social security schemes by paying indirect taxes on goods not subject to complete income elasticity, or by paying other taxes and charges not dependent on earned income (land tax, wealth tax, charges under the "Equalization of Burdens" law in Germany, etc.).

d) Overall evaluation of the sensitiveness of the number of insured persons to the current economic situation

527. Taking social security as a whole, the number of insured persons must be considered to have an anti-cyclical effect.

2. *Sensitiveness of the assessment bases for contributions to the current economic situation*

a) Anti-cyclical assessment bases

528. The contribution assessment bases which tend to lead to increased receipts during periods of expansion and reduced receipts during periods of recession chiefly include wages, salaries, profits, gross turnover and value added. Most of the taxes for financing social security benefits are levied on one of these assessment bases, which are, in principle, anti-cyclical. The contributions of employers and employed persons, which form a fixed percentage of wages and salaries, react in a less anti-cyclical manner than direct taxes for financing social security which are levied on the earnings of employed persons on the basis of a progressive tax scale. The most anti-cyclical assessment basis is, in principle, the entrepreneur's profits, because, during the fluctuations in the economic situation, gross profits vary more than wages and turnover, and also because the progression of the tax scale has a more marked effect on entrepreneurs than on employed persons. However, in contrast to taxation which affects employed persons, taxes on profits are usually levied only after a considerable time-lag from the formation of those profits so that, before the tax is paid, the economic situation may have changed and the anti-cyclical effect become pro-cyclical. There is a constant call for shortening this time-lag, which is unhealthy from the point of view of short-term economic policy. The assessment ceilings for the contributions, which are more often exceeded when the economy is expanding, and earned incomes are rising, than during recessions, reduce the anti-cyclical effects of the assessment bases linked to earned incomes.

b) Pro-cyclical assessment bases

In practice, they have no significance.

c) Neutral assessment bases

529. These are all forms of contributions which remain constant over a period: for instance, in Germany the contributions for farmers' old-age insurance and small craftsmen's insurance, the charge on mortgage profits, levies on profits from credit transactions and on wealth under the "Equalization of Burdens" law, and taxes which are not influenced by the economic situation and are used to finance social security, such as land taxes and taxes on consumer goods for which demand varies little with income.

d) Overall evaluation of the sensitiveness of assessment bases for contributions to the current economic situation

Taking all the receipts employed for financing social security as a whole it must be assumed that, for any given

contribution and taxation scale, the assessment bases for contributions are mainly anti-cyclical. The fact that their anti-cyclical nature is often weakened by changes in the contribution scales will be studied during our examination of the financing methods.

3. *Overall evaluation of the sensitiveness of social security receipts to the current economic situation*

530. Since both the number of persons contributing to social security financing and the assessment bases for the contributions are anti-cyclical in character, it could be expected that, for any given social security benefits and for any given contribution or taxation scales in every phase of the economic cycle, an anti-cyclical development will occur in the receipts from contributions, a development which is much to be desired from the point of view of short-term economic policy.

D - FINANCING METHODS

531. If the social security benefits and contributions develop in the same direction and in the same proportions, the effect produced upon the current economic situation will be quite different from what it would be if they developed disparately during the phases of the cycle.

However, the changes in the ratio between receipts and expenditure during the economic cycle depend upon the financing method chosen from those examined below.

From the point of view of short-term economic policy, there are two main types of financing:

a) financing methods which entail short-term balancing of current expenditure and receipts so that neither an appreciable surplus nor deficit results;

b) financing methods under which current expenditure and receipts are not balanced on a short-term basis, so that, in the long run, considerable surpluses or deficits may result.

a) Financing methods entailing short-term balancing of current expenditure and receipts

532. If the benefits are financed from contributions and taxes calculated on a short-term—e.g. annual—basis (with payments in anticipation of presumed obligations) so that the estimated benefits for a comparatively short period (e.g. a year) are financed by an equal sum of contributions and taxes over the same period, or if all the estimated receipts from contributions and taxes for any specified period are distributed as benefits during the same period, this constitutes a straightforward adjustable-contribution system. (The word "contribution" is used here in its broadest sense, to cover both the contributions made by employers and employed and taxes for social security purposes.) In such cases, the receipts and expenditure for the period in question always balance. This is also true when the expenditure for a relatively short period (e.g. a year) is calculated in such a way that it more or less equals the expected receipts for that period.

533. It is often said even now that these financing methods, under which the social security benefits always equal the social security contributions or taxes allocated to social security, are neutral in their effect on the economic situation. In this case the total purchasing power available is reduced, through taxation and contributions, by the same amount as the sums paid to beneficiaries. This view—to the effect that benefits and contributions cancel each other out vis-à-vis the overall demand of the economy—disregards the possibility that the marginal proportions of consumption and imports in the total demand of the main beneficiaries of social security and in the total demand of those who bear the main burden of social security charges, may differ (cf. Chapter III), and that, consequently, the overall demand which plays a part in the domestic economy is very likely to be modified for this reason alone. But, above all, this theory ignores the fact that, in order to ascertain the real effects of social security charges and benefits, allowance must be made for the potential passing-on of social security payments by employers and employed to nominal wages and prices and for the fact, as a rule, they really are passed on, at least in part, as detailed discussion of the problem in Chapter III has shown. If these passing-on processes are considered from the point of view of short-term economic policy, the following possibilities arise:

EXPANSION

1. *An increasing amount of benefits and contributions*

534. If, during a period of economic expansion, social security benefits, contributions, and taxes allocated for social security financing rise, the employed will try to pass on their charges to the employers, who, in turn, will try to pass on theirs to prices. Thus, as a rule, a pressure which is at least partly successful is exerted on the rise in overall nominal income, a rise which is undesirable from the point of view of the economic situation (cf. hypotheses 3, 4 and 6 in Chapter III). The restrictions stated in Chapter III should be remembered, namely: the charges are only very rarely passed on in their entirety, the process is less objectionable when it engenders a rise in productivity, and the pressure exerted by it may be weaker when increased benefits during a boom period can be financed by increased receipts with-

out the contribution and tax rates having to be raised than when these rates have to be raised. If allowance is made for the tendency analysed above to adjust benefits as rapidly as possible to the rise in wages and salaries and prices induced by the economic trends, together with the probability that part of the charges will be passed on, it can at any rate be seen that social security has an increasing pro-cyclical influence during boom periods in so far as this tendency is realized.

2. *A decreasing amount of benefits and contributions*

535. If, during a period of expansion, social security benefits and contributions decrease in the same proportion, the pressure exerted on the increased nominal income may weaken as a result of the reduction in social security charges. However, it should be stated here and now that, generally speaking, if the contributions are kept at the same level and the surplus is not used up, the effect from the point of view of short-term economic policy will even be considerably more favourable. It should also be remembered that there is no complete symmetry between the effects of the increases and reductions in contributions; the temptation to pass on increases in contributions is certainly stronger than the willingness to offset reductions in contribution rates by more moderate wage claims and lowered prices.

RECESSION

1. *An increasing amount of benefits and contributions*

536. If, during economic recession, increased social security benefits are financed by additional contributions and taxation, the temptation to pass them on under the unfavourable conditions obtaining during that phase may find expression in a tendency to exert pressure to increase costs and reduce profits which has a detrimental effect on enterprises' propensity to invest. In some cases this can outweigh the economic advantages which may be obtained from the increased consumption induced by any rise in social security benefits and gross wages.

2. *A decreasing amount of benefits and contributions*

537. Conversely, in the event of equivalent reductions in social security charges and benefits during a recession, easing costs pressures may have a favourable impact upon enterprises' propensity to invest. It goes without saying that a reduction in contributions accompanied by maintenance of the level of benefits, or even an increase, would have still more favourable—considerably more favourable—effects from the point of view of short-term economic policy.

While we are, therefore, obliged to reject the thesis that financing methods which do not entail appreciable surpluses or deficits in receipts are without effect on the current economic situation, it can nevertheless be said that they do in general reduce the non-neutral effects of some social security sectors. During a period of expansion, increased benefits which are not financed by additional contributions and not covered by the corresponding receipts (deficit financing) would represent that much increased purchasing power in the national economy. On the other hand, if these increased benefits are financed by increased contributions or taxation, and if it is possible to prevent at least part of these new charges from being passed on to prices and nominal income, the rise in total demand will be less than in the above example. The pro-cyclical incidence of increased benefits during expansion periods is therefore weakened when these benefits are financed by an adjustable-contribution system. Conversely, the anti-cyclical incidence of reduced benefits during expansion periods is also weakened by corresponding reductions in contributions. During recessions, the pro-cyclical effects of reduced benefits are offset by corresponding reductions in contributions and the anti-cyclical effects of increased benefits are lessened by the unfavourable influences which increased contributions have upon costs. In this connection reference should be made to the information given in Chapter III, which shows that the residual effects on the current economic situation may nevertheless be of great significance.

538. In the Common Market countries, a considerable part of public social security benefits is financed either *de facto* or *de jure* on the short-term adjustable-contribution principle. On the assumption that provisions concerning the formation of reserves which are not large in proportion to total receipts and expenditure are not regarded as violating the principle concerned, it can be said that the following benefits are financed by a more or less straightforward adjustable-contribution system:

Germany

Accident and sickness insurance, old-age and survivors' insurance for self-employed farmers, and family allowances. A similar adjustable-contribution system will probably be adopted in the near future for legal pension insurance for wage-earners and salaried employees.

Belgium

Invalidity insurance and, to a large extent, old-age and survivors' insurance for miners and persons treated as such, accident insurance, family allowances.

France

Under the general scheme: insurance against sickness, maternity, invalidity, old age, death, accidents and occupational diseases, and also family allowances. The special scheme for miners, special benefits for railway workers in the event of sickness, maternity and death.

Special agricultural scheme: sickness, maternity, old-age and survivors' benefits under the schemes for employed persons and self-employed. Scheme for self-employed persons not working in agriculture: old-age and family benefits; family allowances scheme.

Italy

Some special schemes; all general schemes (sickness and pension insurance, etc.) with the exception of industrial accident insurance.

Luxembourg

Sickness insurance, family allowances.

Netherlands

Sickness and maternity benefits, family allowances for persons in paid employment, unemployment insurance. Generally speaking, the adjustable-contribution system is more frequently employed for short-term than for long-term benefits.

539. Besides those sectors which are formally financed on the adjustable-contribution system, there are others which, while not formally run on that system, do in fact largely balance their annual expenditure and receipts. It has already been shown how rapidly social security benefits can be adjusted to increased receipts. The benefits may even be raised before the expected additional receipts from contributions come in, as has occurred in France in particular; there, as a result of such anticipatory action, in the second half of 1966, during a period of expansion, the government had to cover a deficit of around 2,000 million francs by money-creation measures of a manifestly inflationary character. Allowance must also be made for the fact that the public territorial authorities, which have to help finance many benefits from their general tax receipts, behave in an only slightly anti-cyclical manner as regards their expenditure policy; on the other hand, they soon adjust their expenditure to fluctuations in tax receipts, during upward movements of the economy at least. This can be considered similar to an adjustable-contribution system. During both expansion and recession periods, the communes frequently pursue a predominantly pro-cyclical budgetary policy whose aims relate to financial equilibrium and not short-term economic policy (as can be observed in Germany and France). However, other public bodies (the Länder and the Federal Government in Germany) pursue an anti-cyclical "deficit spending" policy during recessions, but when the economy recovers —at least, when the expansion continues for some time —only very limited budgetary surpluses can be reckoned on. It is for this reason that, in the fields financed by general tax revenue, expansive effects on the economy can undoubtedly be expected during recessions but, in the event of lengthy upward movements, effects corresponding to those of the adjustable-contribution system can be expected.

b) Financing methods by which current receipts and expenditure are not balanced on a short-term basis

540. As opposed to the financing methods described in Section 532, there are others which may cause considerable surpluses and deficits to occur in the long-term current accounts.

This is already true when, under the adjustable-contribution system, the period within which current expenditure must be covered by receipts from social security contributions and taxation is continually being lengthened, since the deficits and surpluses which are liable to appear during the various phases of the period therefore correspondingly increase and it is usually necessary to form reserves which are large in proportion to the benefits.

By virtue of legislation of their articles of association, many social security institutions are obliged to form financial reserves to an amount equal to a specified fraction of their expenditure. Naturally, the greater this fraction, the greater will be the difference between current receipts and expenditure.

541. The opposite of the straightforward short-term adjustable-contribution system is the expectancy cover (capital cover) system, a method which is essential in the private insurance sector and by which it is necessary to create reserves that correspond to the capitalized value of all the potential claims to benefit.

Where this system is applied in social insurance, the reserves have to be continually augmented, at least until a constant number of insured persons has been attained, and even beyond that point should the benefits payable per insured person be increased. Over shorter periods this system may lead to deficits, which would then be financed from the reserves.

However, it is no accident that capital cover systems pure and simple have played a far smaller part in social insurance than in private insurance.

542. In many social security branches it is impossible to make an actuarial calculation of the risk for the purpose of establishing the capital value of the potential claims (e.g. unemployment insurance). But, first and foremost, there is no longer any need for massive capital reserves in order to pay the claims which arise because, by making insurance compulsory, the State can at any time exact the amount required to cover current expenditure from the current receipts obtained by contributions and taxation.

It is impossible to say what economic effects the above financing systems will have without knowing in what phases of the business cycle surpluses or deficits will arise owing to the combined effect of the sensitiveness of receipts and expenditure to the current economic situation. This effect would be favourable if surpluses were obtained during periods of prosperity and deficits during recessions. If the effect was the opposite, it would be unfavourable.

543. In principle, there is a risk in fixing time-limits for balancing receipts and expenditure and also in provisions which prescribe that reserves must be formed, regardless of the economic situation.

This is inevitable in a straightforward expectancy cover system which makes it essential to form reserves solely in order to cover benefit rights that will have to be subsequently satisfied from capital. This aspect may at any time find itself in conflict with certain aims of short-term economic policy.

544. The German statutory pension insurance schemes for wage-earners and salaried employees, which are quantitatively very important, exemplify the risks connected with strict, long-term, time-limits from the point of view of short-term economic policy.

Until now, a phased cover system has been applied in these insurance schemes, similar to the modified adjustable-contribution systems: at the beginning of each phase of ten years a contribution rate is fixed which will be applied without any change throughout that period. This rate has to be calculated so that the receipts provided by it are sufficient to cover all foreseeable expenditure and, moreover, so that at the end of the phase a reserve remains which equals the expenditure chargeable to the insurance institutions during the last year of the phase. From the point of view of short-term economic policy this long-term inflexibility of the contribution rates, which makes no allowance for the current economic situation, may lead to very damaging surpluses or deficits during any phase, and especially during the transition from one phase to another. When expenditure for pensions is following an upward trend, large surpluses have to be formed at the beginning of the phase of cover, even if this is not at all desirable from the point of view of short-term economic policy. During the phase the surpluses would then have to be reduced and even become deficits, again regardless of the current economic situation. The risks this system entails for the current economic situation are so great that the statutory pension insurance schemes in the Federal Republic may shortly be switched over to an almost pure adjustable-contribution system, which is less objectionable from the short-term economic standpoint. The Federal Government has already put a Bill for this purpose before the legislature.

545. Even when there is no question of either an adjustable-contribution or a phased cover system, the procedure may take the form of a more or less modified adjustable-contribution system. If, for instance, in German unemployment insurance a stable contribution rate is the general rule while, in practice, contributions are reduced or temporarily discontinued when a continuously favourable situation occurs in the employment and consequently in the financial situation, the result is virtually an amended form of the adjustable-contribution system, which implies a considerable weakening of the anti-cyclical incidence of that branch of social security which is actually the most strongly anti-cyclical.

Generally speaking, from the political point of view it would seem very difficult to exact security contributions during periods of continuous expansion when those contributions are not immediately required for financing social security expenditure and can be justified only on grounds of short-term economic policy.

546. The following summary shows the extent to which the Common Market countries apply financing systems entailing considerable surpluses or deficits on current account: (1)

Germany

The "expectancy cover" system, on which the procedure for statutory pension insurance was approximately based, is no longer applied in Germany.

The "phased cover" system, described above, is still in force for the statutory pension insurance schemes for wage-earners and salaried employees; however, it will probably be replaced by a more or less straightforward adjustable-contribution system.

Great differences may also occur between the receipts and expenditure of unemployment insurance.

Belgium

The capital cover systems are applied in insurance against industrial accidents, and in old-age and survivors' insurance for salaried employees (part of the benefits) and self-employed workers (when they are covered by the General Savings and Pension Fund or by other authorized occupational or inter-occupational funds, and not by the National Pensions Office for self-employed Workers).

Old-age and survivors' insurance for salaried employees are financed by a mixed system (part of the benefits by

(1) Owing to the difficulty in distinguishing between systems which involve "considerable" gaps between current receipts and expenditure and systems involving "inconsiderable" gaps, there will obviously be some marginal cases where problems arise when it comes to classifying a financing system in the categories described under a) and b).

the adjustable-contribution system and part by the capital cover system).

France

The capital cover systems were originally much used for long-term risks, but they have gradually been abandoned (in 1941 for old-age insurance and in 1945 for all schemes). These systems still play some part in the special agricultural scheme for industrial accidents and occupational diseases and for some supplementary schemes.

The supplementary inter-occupational unemployment insurance for paid workers in commerce and industry is financed by an adjustable-contribution system within ten-year cover phases. For the special railway workers' schemes, a combination of the adjustable-contribution and capital cover system is applied in invalidity, old-age and survivors' insurance.

Italy

The capital cover system, with various ratios of reserves, is applied in some special schemes and in industrial workers' insurance against accidents at work.

Luxembourg

All contributory pension schemes employ the adjustable-contribution system to cover the capital value of the pensions due, linked with a special system for financing the expenditure required for adjusting pensions to wages and salaries.

However, the contribution rates, which in theory are raised, remain constant since any deficiency is in fact covered by the State. The State provides funds on a straightforward adjustable-contribution basis.

Accident insurance employs the system whereby annual expenditure is balanced by annual receipts, including the sums granted to cover pensions during the year.

Netherlands

The capital cover system is used for accident insurance, invalidity insurance, voluntary old-age insurance and the occupational pension funds.

A five-year cover system is employed for general old-age and widows' and orphans' insurance.

c) Overall evaluation of the effect of current financing methods on the economic situation

547. If all the social security sectors for the EEC countries are lumped together, it can be said that they are financed by means of a mixed system with great variations in the reserves from country to country.

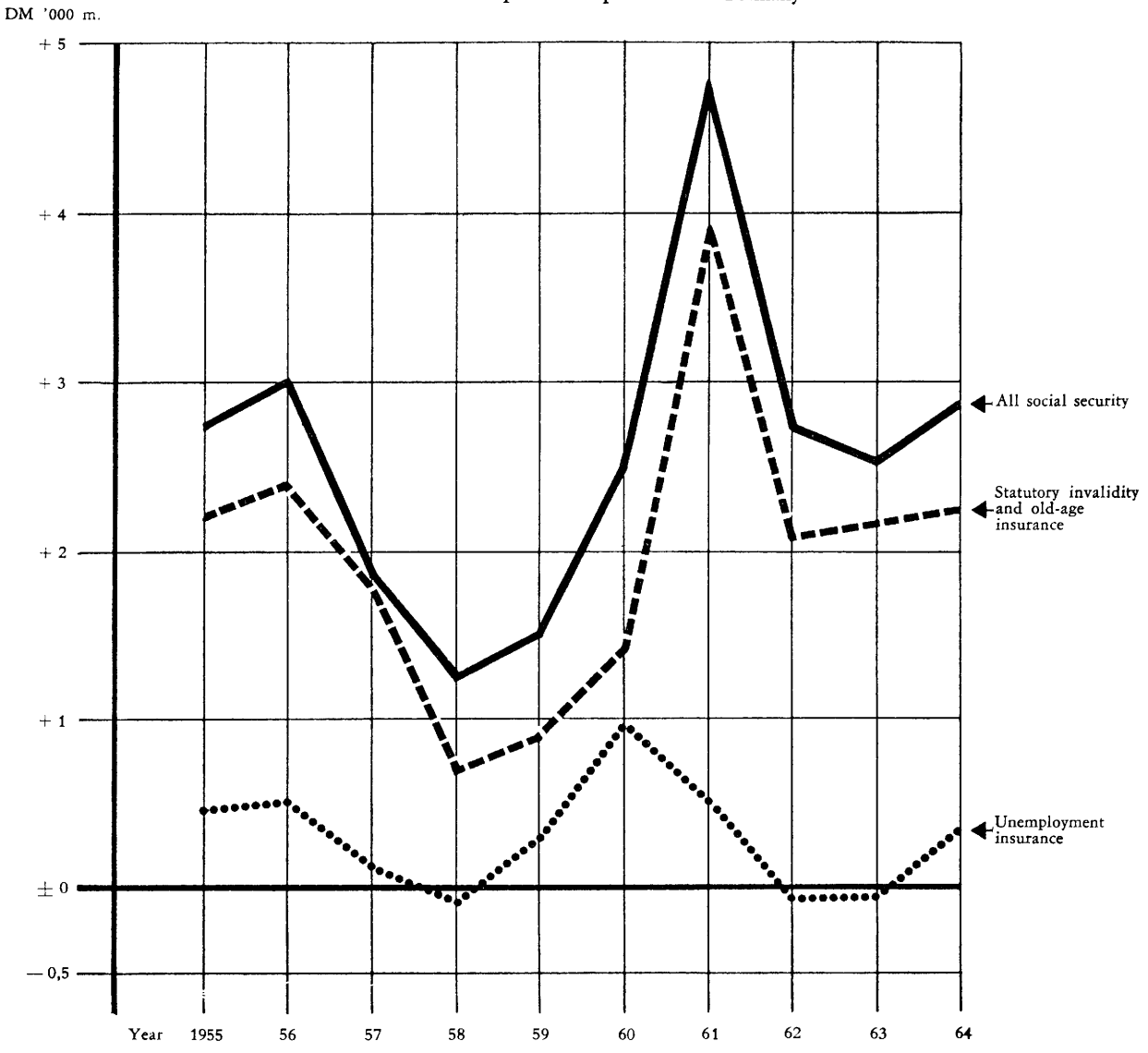
It can also be said that for most of the short-term risks the adjustable-contribution system predominates in a pure or slightly modified form while for longer-term risks longer-term adjustable-contribution systems with some capital cover—i.e. modified adjustable-contribution systems in our sense of the term—are frequently employed in addition to the pure adjustable-contribution system. The capital cover system pure and simple no longer has any major significance except in the Netherlands and Luxembourg. Moreover, during periods of expansion the tendency to adjust social security benefits more rapidly to wage and salary increases for the working population and increased social security receipts does in reality entail closer approximation to the adjustable-contribution system even if it is not formally used. However, during boom periods in Germany a tendency towards surplus formation can also be expected in this connection, as the graph on the preceding page shows. From this it will be seen that in Germany social security as a whole has acquired continuous surpluses since 1950. The fluctuations in these surpluses have on occasion been desirable from the current economic aspect (increasing surpluses during increasing over-heating) and sometimes undesirable (a drop in surpluses during periods of excessive demand on the economy). The financing method applied in practice provides no guarantee that desirable surpluses will be created during periods of expansion. During periods of serious recession, it is to be expected that Germany will move away from the adjustable-contribution principle by anti-cyclical deficit financing of those social security benefits which are not covered by the receipts allocated.

548. In contrast to Germany, the principal French social security schemes yield only small real surpluses: firstly, because they have a permanent deficit which must be covered by subsidies from the national budget (miners, farmers), and secondly, because the surpluses which occasionally occur in the general scheme are almost immediately employed to increase benefits or are absorbed by transfer to the contiguous schemes which show a deficit. Only the "autonomous" or "supplementary" pension schemes and unemployment insurance from reserves. Under these circumstances, a major anti-cyclical effect cannot be expected from French social security by the creation of surplus receipts during the periods of expansion.

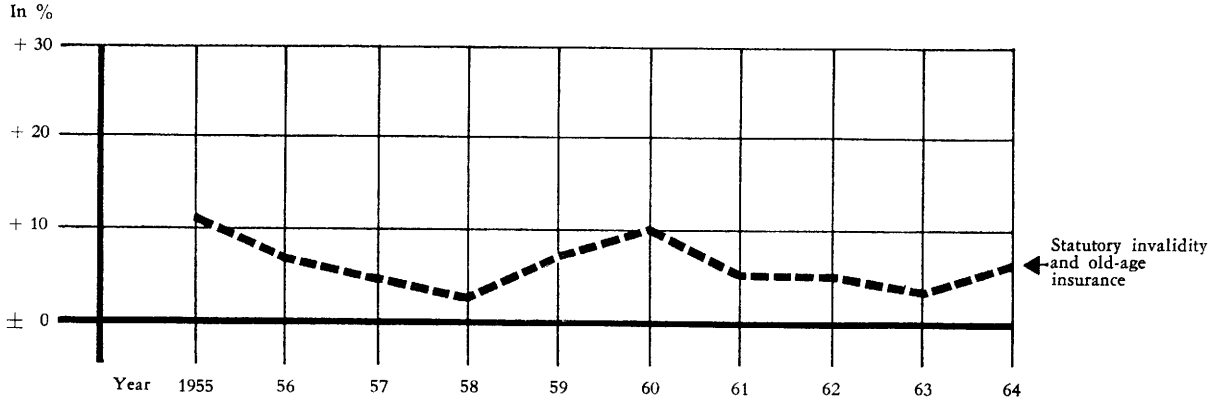
E - METHODS OF INVESTING SURPLUS RECEIPTS AND OF FINANCING DEFICITS

549. As has been stated above, in principle the formation of surplus receipts in the social security budget acts as a brake on the economy while the financing of deficits in social security benefits stimulates it. The validity of this statement does, however, vary according

Excess of receipts over expenditure in Germany



Growth rates of the real gross national product in Germany



Source: Stat. Jahrbuch für die Bundesrepublik Deutschland 1965, p. 553. Ministry of Labour and Social Affairs. Hauptergebnisse der Arbeits- und Sozialstatistik 1964.

to the method of investing surpluses and the sources used for financing deficits.

1. *Investment of surpluses*

550. If the receipts from social security contributions and taxation show a surplus over social security expenditure, this signifies a saving which reduces demand. If these surpluses are, furthermore, put aside in idle balances in the Central Banks, the effect of hoarding, which acts as a brake on the economy, is enhanced by a reduction in the liquidity of the national economy. If the economy and the State are unable to offset this reduced liquidity by money are issues from other sources, the overall economic demand and the supply of money will be diminished by the amount of the unused surpluses.

In the Federal Republic, the social security institutions are not as yet obliged to deposit their cash surpluses in the Central Bank. However, the statutory unemployment and pension insurance schemes have frequently supported a restrictive credit policy by buying open-market securities from the Deutsche Bundesbank.

551. A current Bill to amend the system for covering pension insurance for wage-earners and salaried employees includes a provision to the effect that these insurance schemes may in future be compelled to invest part of their cash surpluses in open-market securities in order to support the Bundesbank's credit restriction policy. In a Bill for stabilizing the economy, which is also at the committee stage, there is a provision for imposing this obligation upon unemployment insurance as well. In addition, this Bill is intended to oblige government territorial authorities to form reserves when the economy becomes over-heated; these reserves will have to be deposited with the Central Bank. If the Bills are adopted, the future deposits of social security contributions and taxes for social security purposes in the Central Bank will constitute a desirable anti-cyclical instrument in the sphere of influence of social security.

552. If reduced liquidity effected by social security schemes can be offset, or if the surpluses in the social security budget are invested immediately on the money and capital markets, the question is whether additional investment or borrowing requirements on the part of the State, for example, can be set against the additional savings by the social security institutions.

Since investments only partly depend on concurrent voluntary savings, the additional savings by the social security institutions will generally be greater than the additional investments induced by the improvement in financing potential. Thus there will still be a braking effect upon the economy, since part of the investments which would otherwise have to be financed by inflationary methods can be financed in a non-inflationary manner from the social security savings.

553. In the Federal Republic, the major part of the cash surpluses of the social security institutions has hitherto been invested on the money and capital markets. During the years of economic reconstruction, the surpluses from the statutory pension and unemployment insurance schemes in particular played an important part in financing growth in a non-inflationary manner, and thus in stabilizing the economy, which was showing a predominant tendency to get over-heated. Even nowadays, as the Social Council (Sozialbeirat) said only recently, under good economic conditions a major reduction in the accumulated capital of the statutory pension insurance schemes (of late, approximately DM 2,000 million a year) would lead to a trend towards shortage on the capital market which would be very undesirable from the short-term economic angle, and would encourage investors to have recourse to inflationary sources of finance to a serious extent.

554. In France too, the reserves of the "autonomous" or "supplementary" pension schemes and also of unemployment insurance, which are of importance in the social security sector, are not withdrawn from the money stream but are mainly invested in fixed-yield public or private securities that are bought at the time of issue or on the Stock Exchange and frequently resold at economically unfavourable moments. Some social security institutions also grant "social loans" to certain beneficiaries. There is some controversy concerning the interest rates to be applied to these loans, a controversy which is also not unimportant from the point of view of short-term economic policy. As regards France, it can in general be said that hitherto the social security institutions have applied purely financial and not economic criteria when arranging their investments, and those responsible for current investments oppose any restriction of choice of investment in which they have an entirely free hand at the present time—even where important economic reasons can be adduced for such a restriction.

555. If the social security institutions' surpluses are placed at the disposal of the State, their effect on the economic situation will depend upon the pro- or anti-cyclical budgetary policy of the other public institutions; much the same can be said of those cases where the State finances by means of subsidies all or part of the benefits granted by subsidiary social security branches whose financial position improves during upward movements of the economy so that the State is released from its obligation by a reduced need for subsidies. If the

government does not employ the funds which become available, the effects described above occur.

Obviously, social security surpluses do not have a calming effect upon economic trends unless they are created from taxes or contributions and thus form savings from the economic point of view. If (as has happened in the Federal Republic on several occasions over recent years in the fields of statutory pensions insurance) surpluses occur because the government assigns to the social security institutions State bonds which are then shown as surpluses, no saving takes place, and consequently no restraining effect is exerted on the economy.

2. *Covering deficits*

556. If the deficits of the social security institutions are covered by reducing their own reserves, a "dissaving" process occurs which essentially acts as a stimulus for the economy.

If the reserves are deposited with the Central Bank (or invested in open-market securities which may be returned to the Central Bank), this positive effect on demand is enhanced by an effect of increased liquidity. During recessions, this would support a policy of expansion in the money and credit sectors.

In Germany at present, the social security institutions may not have recourse to major reserves in the Central Bank. If the Bills mentioned above are adopted there will be a better chance of using this method of financing deficits, which is a desirable one in times of recession.

557. If the reserves to be released have already been invested in the money or capital markets, no increased liquidity will result. Moreover, during recessions, the additional demand arising from social security benefits which are not covered by the receipts allocated for this purpose may possibly be further offset—at least in part —by the fact that the withdrawal of funds from the money market and, in particular, from the capital market causes concern and a trend towards scarcity on the credit markets which would be reflected by less willingness to grant or take up credit and would lead to reduced investment.

There would be grounds for taking a particularly serious view of a massive sale of fixed-yield long-term capital market securities during a period of downward trend in the economy. It is, in fact, this part of the capital market that finances many investments which are only slightly dependent on the current economic situation and do not produce a fixed yield. The stimulus given to the economy by consumption arising from social security benefits not covered by the receipts allocated for this purpose may even be outweighed by the deterioration in the economy caused by the withdrawal of these investments.

558. If, during recessions, the social security bodies in the Federal Republic fell back upon the considerable investments which they have placed on the capital market, this would undoubtedly jeopardize the investments in the way that has just been described. At all events, the transfer of securities by the statutory pension insurance schemes during the 1967 recession in Germany resulted in an undesirable burdening of the capital market. From the short-term economic point of view, it would be much more advisable not to touch these capital market investments in the event of serious recession and to obtain direct cover for the deficits from the Central Bank.

If the deficits of the social security budget are financed by subsidies from the State's general budget, their effect upon the economic trend varies according to whether the State obtains these funds by means of additional taxation (which at best has a neutral effect), from the Central Bank (expansive effect) or from the money and capital markets (see above).

For the Common Market countries, it is therefore possible under these circumstances to accept a method of financing deficits which has an expansive effect upon the economy.

F - OVERALL EVALUATION OF THE EFFECTS OF SOCIAL SECURITY ON THE CURRENT ECONOMIC SITUATION

559. We shall now try to draw conclusions from our study of the effects of social security upon the current economic situation.

As regards social security benefits, the risks which, when the economy is trending downwards, entail a drop in wages that is offset by social security provisions, cause a reduction in the number of persons supported by social security when the state of the economy is good, and an increase in that number when it is bad. However, this anti-cylical reaction, which is very desirable from the short-term economic aspect, is overcompensated during upswings and, in particular, during persistent booms, since in many sectors the amount of benefits per beneficiary increases rapidly. This rise in benefits is conditioned, firstly, by benefit assessment bases which are legally bound to follow the trend in wages and prices; secondly, by the attempt to use the general increase in receipts during upward movements of the economy for improving benefits, an attempt which is based upon purely financial considerations relating to a balanced budget; thirdly, it is to a large extent conditioned by

the fact that the social aim of a rapid adjustment of social security income to earned income outweighs the economic aim of a stable economy.

560. In any case, generally speaking it must be expected as a rule that, in the Common Market countries and during this phase of the economic cycle, benefits will increase in a pro-cyclical manner. At best it can be hoped that the growth rate of benefits will not exceed the growth rate of earned income or will perhaps be slightly lower. It should be emphasized yet again that there are often excellent social reasons for such a pro-cyclical increase in benefits during this phase of the economic cycle and, quite rightly, these reasons outweigh the objections to it which are based upon short-term economic policy. On the other hand, during recessions it can be assumed that the average benefits per beneficiary will increase either because of the type of assessment bases employed for the benefits or on account of deliberate increases in benefits which are prompted by the economic situation and, in this phase of the economy, usually conform with the aims of social policy as well. During a bad period the benefits as a whole should, therefore, increase in an anti-cyclical manner.

561. As for receipts obtained from contributions, from the short-term economic point of view a favourable—and thus anti-cyclical—evolution of social security receipts must be expected during good and bad periods of the economy, both as regards the number of persons paying contributions and the alteration of the contribution assessment bases.

This potential favourable incidence on the economy is, however, weakened by the fact that the financing methods applied in social security are to a very great extent tantamount to adjustable-contribution systems—even though fairly flexible ones—under which receipts and expenditure are more or less balanced, at least when the economic situation is satisfactory. That is why the desirable formation of large surpluses during periods of overheating does not occur. On the other hand, during recessions it can be expected that the principle of the adjustable-contribution system will give way to anti-cyclical deficit financing of the social security benefits.

562. The restraining influence exerted upon the economy by social security surpluses is somewhat impaired by the fact that the major part of these surpluses is invested not with the Central Bank but on the money and capital markets. During recessions, the system of covering deficits by liquidating capital market investments also weakens the anti-cyclical incidence of deficit spending. During long periods of upward movement in the economy, the more or less parallel rise of contributions and benefits sets off a process of passing on charges which is accompanied by pro-cyclical increases in nominal wages and salaries. However, since usually only part of the additional contributions is passed on, the pro-cyclical incidence of this process is weaker when the social security contributions and benefits are increased in parallel than when the additional benefits are financed in a purely inflationary manner without simultaneously skimming off the extra purchasing power by additional contributions.

563. All these reasons incline one to consider that the effects of the entire social security sector on the short-term economic trend during lengthy boom periods are mainly pro-cyclical.

On the other hand, it must be assumed that, during recessions, the combination of increased benefits, reduced contributions and deficit financing of social security will have an anti-cyclical incidence.

While the influence of social security during boom periods can be criticized, the question arises whether any basic improvement is conceivable in this respect.

564. Owing to the conflicting aims of social and short-term economic policies, as described above, there are, unfortunately, few grounds for optimism. The German Social Survey Commission has recently said:

"Since social policy is directed to assuring the security of the individual, it calls for a high degree of continuity. This is particularly evident in the field of old-age insurance, which is designed to give the individual a form of security stretching over several decades. Economic policy, on the other hand—at least as regards many of its functions—depends upon the flexibility and mobility of various partial sectors and of individuals if it is to assure the steady, balanced development of the general economy. This is particularly true of growth policy and short-term economic policy... Thus, the need for continuity in social policy— continuity of a large aggregate which represents no less than 20 % of the national income and continuity within the elements which form this aggregate, right down to the individual himself—clashes with the need for continuity in economic policy, which requires all the aggregates to be flexible. This becomes especially evident when an over-heated economy calls for a reduction in all forms of public expenditure and the solid mass of social security expenditure largely lacks the flexibility necessary for such a reduction... Similarly, social security contributions can only be manipulated to a limited extent... Wherever possible, the endeavour should be made to orientate social policy in line with short-term economic policy within the limits it has set itself—there are even some fields, such as unemployment insurance and unemployment assistance, where the aims of social policy require this. But, taken

as a whole, social policy cannot be fitted into the framework of short-term economic policy unless it is carefully adapted to foreseeable growth as its task extends." (1)

565. Thus, it is undoubtedly recognized here that social security can only be orientated along short-term economic lines within quite narrow limits. However, the present study has none the less proved that the possibilities in this field have not yet been exhausted.

In the social security sector, many decisions which are debatable from the short-term economic aspect are based not on arguments relating to social policy, but, for instance, on narrow considerations of taxation policy (increased benefits solely because there is a rise in receipts); pure ignorance of economic mechanisms (inadequate knowledge of the problems involved in passing on charges); departmental egoism (refusal to authorize an investment of reserves when this is advisable from the short-term economic angle); or short-sighted electoral calculations. If these incorrect attitudes, which can in no way be imputed to insoluble conflicts of aims, could be eliminated, considerable progress would have been made towards reconciling short-term economic policy with social policy.

III - Social security and economic growth

A - GENERAL CONSIDERATIONS

566. The fundamental methodological difficulties which make it impossible precisely to establish the significance of social security for economic growth have been mentioned at the beginning of this chapter. A few further problems will be discussed here. As we shall explain in more detail below, no entirely satisfactory unit exists for measuring economic results and growth. If the usual index of real national product and its rise is initially taken as a valid criterion for economic growth, the difficulty remains that the theory of growth is still in such a fluid state that, despite numerous creditable attempts, there are as yet no entirely unchallengeable econometric models.

The choice of a growth model suitable for this survey depended firstly on the purpose of the survey, and secondly on the available empirical data.

567. To begin with, a decision had to be made concerning the aggregation basis of the growth model to be employed.

If the matter is considered in isolation, it would have been desirable to proceed from models which were as disaggregated as possible and which would explicitly show the incidence of social security on the growth of a large number of different production sectors. When broken down into various fields of production, these growth models would have had one special advantage in that they would have made it possible to study the danger of the development of sector imbalances, resulting from charges in social security, which would be detrimental to growth. Thus it would perhaps have been possible to see whether any increase, caused by social security, in final demand for products from one economic sector would be faced with inelasticity of supply from that sector. If so, price increases would have to be expected there. Moreover, imports of the products whose prices had risen would increase, leading to disequilibrium in the trade balance.

568. By using such models, it would also have been possible to see what economic measures could be taken to prevent these disruptions in the equilibrium of some sectors, disruptions which are prejudicial to economic growth.

The starting point for this analysis of sector growth could be the input-output tables for the Common Market countries as used in Chapter VII, supplemented by a cyclic analysis like that developed in Chapter III. A theoretical model of this type has been put forward by Professor Coppini. (2)

Unfortunately, the empirical data available do not appear sufficient for calculating a disaggregated and dynamic growth model which explicitly takes the social security sector into account. Yet it is considered that such a sector analysis of the connections between social security and economic growth is urgently required for the future.

569. Since this survey has, in any case, examined the incidence of social security on the total input and the total output of the factors of production formed by labour (particularly in Chapter V and also in Chapters III and VII) and capital (Chapters III, IV and VII), it

(1) Sozialenquête-Kommission: *Soziale Sicherung in der Bundesrepublik Deutschland* (Social security in the Federal German Republic). Stuttgart, Berlin, Cologne, Mainz, 1966, pp. 141-143.

(2) M.A. Coppini: *Un modèle pour l'étude des conséquences économiques éventuelles d'un système de sécurité sociale* (A model for study of the possible economic consequences of a social security system). Fourth International Conference of Social Security Actuaries and Statisticians, Paris, October 1966.

was finally decided to use a growth model which did not break down the input and output of these factors into sectors but treated them as a whole.

Hitherto, the econometric models which have been most frequently established for many countries and long periods have been the type which is based on an economic production function that is particularly plausible in theory, namely the Cobb-Douglas function. (1)

570. A Cobb-Douglas production function has already been employed as basis for model studies of the potential effects of social security on economic growth. (2) It is, admittedly, impossible to quantify the influence of social security on the variables and parameters of such a function. But the function does make it possible to establish the economic weight of the various growth factors which are influenced by social security, and to make approximate evaluations of the significance or insignificance of that influence. The Annex to this Chapter gives numerical deductions of the influence of social security upon economic growth on the basis of various theoretical hypotheses for the influence of social security upon the parameters and variables of a Cobb-Douglas function. Hence, as a starting point for our study of growth, we shall first determine the factors which govern economic growth under the Cobb-Douglas function.

571. According to this function, the real national product (Y) for any given period is calculated as a function of the labour (A) employed during that period, the real capital (K) employed and the technical standard, which, in its simplest form, depends on time (t).

$$(1) \qquad Y = cA^{l} K^{m} e^{nt}.$$

The growth in the real national product is therefore dependent on:

— the annual growth rate of labour ($= a$);

— the annual growth rate of capital ($= k$);

— the annual rate of technical progress ($= n$);

— constants (c) which indicate the influence of invariable production factors such as soil, climate, etc.;

— the elasticity of production in relation to the input of labour

$$(= l = \frac{\delta y}{y} : \frac{\delta A}{A});$$

— the elasticity of production in relation to the input of capital

$$(= m = \frac{\delta Y}{Y} : \frac{\delta K}{K}).$$

572. The effective growth rates of labour and capital and the functional parameters vary widely from country to country. (3) In a growth model which is intended to show the average situation of the EEC countries it is, however, possible to proceed more or less from the following values:

Annual growth rate of labour:	$a = 0.01$
Annual growth rate of capital:	$k = 0.04$
Annual rate of technical progress:	$n = 0.02$
Elasticity of production in relation to labour:	$l = 2/3$
Elasticity of production in relation to capital:	$m = 1/3$

If we assume that labour increases annually at a rate a from the initial value A_0, and that capital increases annually at a rate k from the initial value K_0:

$$(2) \qquad A = A_0 e^{at}$$

$$(3) \qquad K = K_0 e^{kt}$$

The real national product thus obtained is:

$$(4) \qquad Y = c A_0^{l} K_0^{m} e^{(al+km+n)t}$$

573. The annual growth rate of the real national product can be obtained from (4):

$$(5) \qquad \frac{\frac{dy}{dt}}{Y} = al + km + n$$

i.e. the annual growth rate of the real national product is the sum of:

— the labour growth rate multiplied by the elasticity of production in relation to labour;

— the capital growth rate multiplied by the elasticity of production in relation to capital;

— the rate of technical progress.

If we fill in in (5) the numerical values of the model as given in sec. 572, the following real annual growth is obtained:

(1) In particular, those calculated for the European Communities by a group of experts set up to establish "methods for forecasting long-term economic development". Cf. Statistical Office of the European Communities: *Informations Statistiques*, 1960, No. 6, November/December.

(2) R. Consael: *Sécurité Sociale et croissance économique, essai de représentation économétrique.* Revue internationale d'actuariat et de statistique de la sécurité sociale, No. 10, 1964.

(3) Statistical Office of the European Communities: *Informations Statistiques*, 1960, No. 6, November/December.

— as a result of increased labour: $al = 0.0067$

— as a result of increased capital: $km = 0.0133$

— as a result of technical progress: $n = 0.02$

Overall growth: $al + km + n = 0.04 = 4\ \%$

574. From these figures it is possible to observe immediately the predominant significance of technical progress irrespective of the input values for the factors, the lesser importance of capital increases, and the even smaller importance of labour increases, despite the high value of 1, for the national product growth rates which are now customary.

We shall now try to summarize and supplement the results of the analyses in the earlier chapters and in the first part of this chapter from the point of view of economic growth and, even if quantification is impossible, at any rate to determine whether or not the effects of growth are so strong that the growth factors assumed by the empirically plausible production function explained above are decisively influenced by them.

B - SOCIAL SECURITY AND LABOUR INPUT

Labour supply

575. In Chapter V the conclusion was reached that social security undoubtedly increases the labour supply in that it restores and improves the health of individuals in the event of illness and accidents, assures subsistence and thus the continued capacity to work in the event of temporary retirement from working life (unemployment insurance, assistance) and, in the long term, probably encourages an increased birth rate through family allowances. It is to be assumed that less importance attaches to the negative side of this, e.g. the reducing effect on the labour supply caused by unjustifiably premature sickness claims from members of the working population, by a weakening in the interest of unemployed people in recommencing work, or by premature invalidity claims from persons who are still capable of work. This assumption is amply justified in view of the usually effective controls which are intended to prevent abuses of social security benefits, and the considerable gap which still exists between benefits and wages. The age of retirement fixed in old-age insurance undoubtedly induces many people to stop working when, if this form of insurance did not exist, they would offer their services on the labour market for some further time. The supply of female labour may be reduced by family allowances, and the supply of young labour may also be diminished by these allowances and by education and training grants (which are in the interest of an improved standard of labour). It is an open question how far the reduction in take-home pay caused by the charges imposed in the form of social security contributions leads to any appreciable weakening of the incentive to work or, conversely, to a desire to offset these contributions by additional work.

Labour demand

576. Social security influences the demand for labour in that the contributions form a costing factor and the benefits constitute a source of demand. The way in which social security charges affect costs and profits and thus, indirectly, demand for labour depends primarily on the passing-on processes offset by the social security charges. The exhaustive analysis of the problems of passing-on charges given in Chapter III has shown that possibilities of passing on charges vary widely according to the current economic situation and the economic policy applied.

577. The following long-term effects seem to be the most likely:

Part of the contributions must be the workers' responsibility via a reduction in their take-home pay which makes it less than it would be if the social security scheme did not exist. This part of contributions does not cause increased costs and a reduced demand for manpower.

The balance of the contributions is passed on to the employers by the workers by means of rises in gross wages which increase costs. Yet since the employers can usually in their turn pass on a large proportion of these costs to prices, owing to developing overall demand, their profits are reduced by a far smaller ratio than the increased costs. It is for this reason that social security charges cause only a slight reduction in the demand for labour. In the long term, the pressure exerted on profits by wage costs may even stimulate growth when a corresponding increase in mass incomes entails sufficient expansion of the demand for consumer goods and of the labour demand required to satisfy it. This point will be dealt with when capital is examined as a growth factor.

578. It should be noted that wages and salaries form by far the most important assessment basis for social security benefits. As was said in Chapters V and VI, for this reason social security has a particularly strong effect on the costs of labour-intensive production processes. This may encourage a tendency to substitute capital for labour which will reduce the demand for labour.

Finally, the incidence of social security on the current economic situation also plays an important part in the demand for labour. In the section of Chapter VII dealing with this question, it has been said that the social security schemes now applied in the EEC countries usally

cause a pro-cyclical increase in overall demand during booms and an anti-cyclical increase during recessions. During these two phases of economic imbalance, this leads to an increased demand or labour which is undesirable in the event of over-heating accompanied by a trend towards over-employment but very welcome during recessions.

Balancing labour supply and demand

579. If the public employment exchanges are considered as part of the social security scheme (in Germany, for instance, they are an element of the unemployment insurance scheme), they must be acknowledged as having a very positive influence on a more efficient balance between the labour supply and demand by considerably improving the transparency of the labour market. Since the rights to social security benefits can be transferred between the various regional and occupational social security bodies, the mobility of labour at regional or sector level will undoubtedly not be impeded by them to any appreciable extent— except in special cases such as those arising from supplementary insurance schemes provided by individual enterprises.

Overall incidence on the utilization of labour

580. It is impossible to say whether or not social security schemes promote labour supply and demand more than they restrict demand. Even if these factors could be separately quantified, there could be no question of merely balancing them. For instance, what is perhaps one of the major negative influences on the supply of labour, i.e. the loss of manpower represented by old-age pensioners, undoubtedly has much less effect on the level of employment than on the supply of labour, because the demand for older workers is so small that it would in any case absorb only part of a possible increase in the number of older persons seeking employment.

If we accept the presumably realistic values given above for the Cobb-Douglas function as being valid for evaluating the importance of the increase in labour input to overall economic growth, we should nevertheless like to suggest that the influence of social security schemes on utilization of the "labour" factor of production does not play a decisive part in economic growth.

581. As an undoubtedly extreme hypothesis concerning the effects which reduce employment, let it be assumed that, without a social security scheme, the growth rate of the labour input would be twice what it is at present, i.e. 2 % instead of 1 %. Under these circumstances, if the value $1 = 2/3$, as adopted above in function 5 (sec. 573), is taken to be constant, the annual growth rate of the real national product would only be increased by 2/3 of 1 %. If, on the other hand, as an equally extreme hypothesis concerning the effects which encourage employment, it is assumed that, without a social security scheme, labour input increased only half as rapidly as the currently accepted realistic average, i.e. by 0.5 % instead of 1 %, then, with $1 = 2/3$ remaining constant, according to function 5 this would produce only a 1/3 of 1 % reduction per annum in the growth rate of the real national product. (1)

Irrespective of whether it is considered more realistic to assume this influence as negative or as positive, in neither case would it have any decisive importance as one of the factors determining growth.

C - SOCIAL SECURITY AND THE AMOUNT OF REAL CAPITAL EMPLOYED

582. During each period, the real capital of a national economy increases by the amount of the net investments. This amount is equal to the effective saving (voluntary and compulsory), less the capital contributed from abroad (if we concern ourselves only with the growth effect of domestic investments).

As regards the influence of social security on savings and investments, we have been obliged to state in previous chapters that this too cannot be quantified. We shall now draw conclusions from the relevant results of our analysis from the point of view of economic growth.

583. Chapter II examined the redistributive effects of social security schemes under the limiting hypothesis that the national product and the distribution of factor incomes among the recipients of income are constants. If it is also assumed that the functional dependence of consumption on the income available to the groups among which the income is redistributed is also constant and known empirically, it is possible to deduce the incidence of social security schemes on planned savings from the effects of redistribution as assessed in Chapter II.

If account is also taken of the vertical redistribution of income which benefits the poorer classes, as calculated for Germany in Table 2 of Chapter II, in the consumption functions (2) which are established for the same period and show the consumption of each household in relation to its disposable income, then, on the basis of

(1) See also the numerical model calculations in the Annex to this chapter.

(2) Cf. Schmidt - Schwarz - Thiebach: *Die Umverteilung des Volkseinkommens in der Bundesrepublik Deutschland 1955 und 1960,* Institut für angewandte Wirtschaftsforschung in Tübingen, Schriftenreihe Vol. 4, Tübingen 1965, p. 117.

the assumed effects of redistribution (since the beneficiaries of social security schemes show a smaller marginal propensity to save than the totality of the groups paying for social security schemes), the result is a decrease in the households' voluntary savings which amounted to some DM 2,000 million for 1960. (1) This represented almost 0.75 % of the 1960 net national product. However, since the savings of the German social security sector in 1960 totalled some DM 2,700 million, it could be said that on the basis of these calculations the social security scheme has even caused an increase, albeit a small one, in the total savings.

584. In Chapter II, according to the method applied there, redistribution was also calculated for France, operating downwards from the higher income to the lower income groups. A similar trend must be assumed for the other Common Market countries. Since the savings rates always drop when the disposable income is reduced, according to this method of assessment a slight decrease in savings—as found in Germany—must be expected.

The passing-on process and capital formation

585. Unfortunately, calculations such as those described above are misleading, since neither the total national product nor the redistribution of income among the various social classes remains constant when a social security scheme plays its part in the economic process. Allowance was made for this in Chapter III, but the unrealistic hypothesis that consumer (or savings) functions are not dependent upon social security was retained. It was shown that the incidence of social security then varies completely, according to the phases of the economic cycle and the aims and methods of economic policy. In the case of the economic phases which most frequently occur in the long run, and of the economic policy which is now most commonly applied, the following major consequences were deduced for capital formation: a proportion of the social security charges is passed on from the workers to the employers, who in turn pass them on to prices. The method of passing on part of the contributions by increasing gross wages causes the contributors to reduce their savings to a lesser extent than is to be assumed under the hypotheses described in Chapter II. If the overall demand remains constant, the wage increases will reduce profits and, owing to the high percentage of savings by enterprises, would cause a great reduction in these savings. Yet, since enterprises are able to pass on to prices a considerable proportion of the social security charges which are initially passed on to them, their profits and savings do not fall to any large extent. Taken as a whole, allowing for the passing-on process there may be some reduction in planned savings. However, it is important to note that investments cannot usually be brought down to the reduced level of voluntary savings: to a large extent they are maintained, and financed by inflationary methods. From this aspect, therefore, social security schemes primarily cause a reduction in the proportion of real capital formation which is financed by voluntary savings; an increase in the proportion financed by inflationary methods; and, to a lesser extent, a reduction in real capital formation itself. At all events, these are the conclusions to be drawn from the model and also from the econometric model for the Federal Republic (Annex II, Chapter III), and they are confirmed by the evaluations in Chapter IV of the effects of passing on charges entailed by the introduction of an old-age insurance scheme in the Netherlands. According to these evaluations, only a negligible drop (between 0.1 and 0.2 %) in the savings: national product ratio is to be expected.

Social security, the current economic situation and capital formation

586. We have reached the conviction that during recessions social security schemes help to cause an anti-cyclical expansion of demand which is desirable from the short-term economic point of view. This increased demand leads to better utilization of the available real capital and thus to an increase in the capital actually employed for production purposes. On the other hand, the growing propensity to consume, caused during the same phase of the economy, in no way implies a reduction in the formation of fresh real capital since the propensity to invest is in any case too weak at that stage to reintroduce all planned savings into the economic circuit. Entirely in accordance with a Keynesian stabilization policy, social security schemes only help to close the deflationary gap between planned savings and investments and thus to prevent a further weakening in the propensity to invest.

We have been obliged to conclude that, during boom periods, social security schemes effect a predominantly pro-cyclical expansion of overall demand. In order to curb the inflationary results of such expansion, a restrictive economic policy will be applied, with the object of limiting investments. But, since such a policy is often far from successful, social security schemes will— as has just been explained—reduce not so much the real investments themselves as the extent to which they are financed by non-inflationary methods.

Social security and private savings functions

587. It has so far been expressly or tacitly assumed that the disposable incomes, but not the savings percentage of

(1) If the calculations of horizontal redistribution as applicable for the Federal Republic in accordance with Table 1, Chapter II, are introduced into the consumption functions given in Annex II of Chapter III, an even smaller decrease in private savings results.

the disposable incomes of individuals, are changed by social security schemes. But this occurs at best in the event of "marginal" changes in the social security schemes in force, whose effect upon savings and capital formation under specified circumstances can therefore be evaluated to a degree of accuracy which is satisfactory for practical purposes—by employing simple circular-flow models of the kind established in Chapter III or, even better, by incorporating the input-output tables used in Chapter VI in multi-sector circular-flow models, applying such a method as that proposed by Professor Coppini. (1) On the other hand, it has rightly been said in Chapter IV that only very vague hypotheses can be formulated concerning the behaviour to be expected of private savings in the absence of any form of social security. Under such circumstances a more marked propensity on the part of individuals to save for private insurance would be expected, in order to cover risks which are now covered by social security. We have strong doubts whether there would then be as much voluntary private insurance as is now imposed by law, but we are unable to produce conclusive evidence either to substantiate or to dispel these doubts. However, it must also be kept in mind that, with private insurance, considerably more private dissaving would take place when risks materialized than is the case at present. It is important to note that private insurance companies, from which insurance would have to be obtained in the absence of social security schemes, operate on the capital cover system and must, therefore, accumulate correspondingly high capital reserves, which is not necessary in social insurance schemes based on compulsory insurance.

Financing methods for social security schemes and capital formation

588. It has been seen that, as regards social security, the capital cover systems required in the private insurance sector are applied only in a small number of insurance schemes in some countries. The principal methods approximate to the adjustable-contribution system with appreciably smaller reserves than would be required to guarantee the claims to social security benefits under the methods used in the private insurance sector. However, in some countries these reserves are nevertheless so large that they cannot be ignored as a factor for offsetting any reduction in private savings caused by social security schemes.

It is often claimed that the fact that social insurance schemes do not usually operate on the capital cover system prejudices economic growth. Early in 1966 Heubeck, the actuary, estimated that under the expectancy cover system a reserve of some DM 520,000 million would have been necessary to meet the statutory pension insurance claims in the Federal Republic at that time. (2) In actual fact, the assets of those schemes were then only around one-twentieth of that sum. DM 520,000 million would probably have exceeded the net fixed assets of German industry in 1966 by more than 100 %! (2)

589. In view of such comparative figures, are there grounds for expecting that the propensity to invest will be sufficient to re-introduce into the economic circuit the enormous amounts of savings required for a social security scheme aiming at complete capital cover? Or would that not be liable to produce a deflationary gap between planned savings and investments which would have long-term depressive effects on the economy? Because of this danger, it is necessary to challenge the extremely popular theory that the widest possible application of pure capital cover systems to social security schemes with such large and rapidly increasing claims as ours acts as a stimulus to growth.

The national economy's capacity for absorbing savings

590. The problem mentioned above brings us to an important point which is frequently overlooked by those who criticize social security for reducing capital formation in the national economy. These criticisms are often based on the naïve thesis—which has been conclusively disproved since J.M. Keynes—that investment is bound to increase (either immediately or, at least, after a time-lag) by the amount of any increase in planned savings. This attitude has been encouraged by post-war experience, when investment showed a tendency to exceed voluntary savings and the risk of an "inflationary gap" was predominant. The biased nature of this thesis can be shown simply by recalling the period of international economic crisis when there was a threat of a long-term "deflationary gap" and several economists (especially J.M. Keynes, A.P. Lerner, A. Hanson and R.F. Harrod) feared "secular stagnation" accompanied by a propensity to hoard which would be over-high in relation to the inclination to invest. This danger of stagnation certainly does not exist at the present time but it cannot be excluded *a priori* in considering the future of an "affluent society" (J.K. Galbraith). In no case can unlimited elasticity of the propensity to invest in relation to the absorption of large savings be assumed, even if it is impossible to quantify the maximum percentage of savings to be absorbed. (3)

The version of the "acceleration principle" which occurs in the works of many theorists (especially A. Aftalion, J.M. Clark and P.A. Samuelson), and according to which

(1) M.A. Coppini: *Un modèle pour l'étude des conséquences économiques éventuelles d'un système de sécurité sociale.* Fourth International Conference of Social Security Actuaries and Statisticians, Paris, October 1966.

(2) Report of the Sozialenquête-Kommission: *Soziale Sicherung in der Bundesrepublik Deutschland.* Stuttgart, Berlin, Cologne, Mainz, 1966, p. 186.

(3) See B. Horvat: *The Optimum Rate of Investment.* Ec. Journal, Vol. 68, 1958, pp. 747-767.

investment is—at least in part—a function of increased consumption, has been econometrically tested and confirmed on many occasions (e.g. by C. Clark and J. Tinbergen). If this theory is correct, an incidence of social security which may promote consumption and curb savings must not automatically be considered as reducing investment and growth. In the long run, increased consumption may also have the effect of promoting investment and stimulating growth.

Conclusion

591. As in the case of labour, no firm opinion can be given on whether social security schemes do on the whole curb or speed up the growth rate of the amount of capital invested, although there is much evidence to support the former view. But, if a Cobb-Douglas function with equation (1), as given in sec. 571, is taken as a valid model for economic growth, it can be said that the detrimental repercussions on the growth rate of the real national product of any reduction in the net investment made by social security schemes are often over-estimated. (1)

592. Any increase in the rate of investment in the national economy first and foremost raises the growth rate of capital and thus, according to equation (5) (sec. 573), the growth rate of the real national product. But, for this reason, the capital/production coefficient (K/A) increases concurrently. However, the lower the ratio between the labour employed and the capital employed, the lower will be the increase in potential production per additional unit of capital (partial marginal productivity of capital). (2) This decrease in the marginal productivity of capital when the capital/production coefficient is raised always, and to an increasing extent, offsets the incentive to growth resulting initially from an increased rate of investment. Since the ratio between national product and amount of capital (Y/K) also drops at such times, the capital growth rate ($k = \frac{I}{K} = \frac{sY}{K}$) falls again when the average percentage of savings and investments ($s = \frac{S}{Y}$) remains constant. It can be shown that in the end the growth rate of the national product and the capital growth rate approximate asymptotically to the following limiting value: (3)

$$(6) \qquad \lim_{t \to \infty} y = \lim_{t \to \infty} k = \frac{al + n}{1 - m}$$

(y = annual growth rate of the national product). (4)

593. Thus this long-term marginal value depends solely on the growth rate of labour (a), the rate of technical progress (n) and the elasticity of production in relation to labour (l) and to capital (m), but it is in no way affected by the level of the investment percentage in the national product.

If, in the absence of any social security schemes, the percentage of savings and investment in the national economy had been genuinely higher in the past and remained so in the future, there would undoubtedly be reason to expect higher growth rates of the real national product at first but, in the long run, the national product would not continue to grow at appreciably higher rates despite higher absolute figures.

D - SOCIAL SECURITY AND TECHNICAL PROGRESS

594. According to production function (2) of sec. 572, there exists a form of "technical progress" which is entirely independent of the number of production factor units employed and is based on qualitative improvements of the factors utilized and on their more effective combination.

Given the growth rates and function parameters mentioned in secs. 571 and 572, half of the total growth of the real national product would have to be ascribed to this "technical progress". In fact, two-thirds of the growth of the real national product per gainfully employed person (and thus of the increase in productivity) would then have to be attributed to this "technical progress" whereas only one-third of that growth would be due to the rise in the capital coefficient (the quantitative ratio K/A). Other econometric studies have obtained similar or even higher values for the part technical progress plays in overall economic growth. (5)

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(1) See also the model calculations in the Annex to this chapter.

(2) $\frac{\delta Y}{\delta K} = mc \frac{A^l}{K^{l-m}}$. This formula diminishes for all values of $m < 1$ when the A/K ratio drops.

(3) We shall not give here the long mathematical derivation of these ratios which are often described in the new growth theory. This is given, for example, in J.E. Meade: *A Neo-Classical Theory of Economic Growth,* London 1961, pp. 30-46 and 108-110.

(4) If these have the numerical values assumed in secs. 572 and 573, this limiting value of the growth rates of the national product and capital would be exactly 4 %.

(5) See, for example, R.M. Solow: *Technical Change and the Aggregate Production Function,* The Review of Economics and Statistics, Vol. 39, 1957, pp. 312-320.
The increase in capital would have proportionally greater significance for growth if, contrary to the hypothesis formulated in function, (1) technical progress was "labour-saving", i.e. if, for specified amounts of capital and labour employed, the marginal productivity of the capital increased at a higher rate than that of the labour. But opinions vary on whether technical progress is "labour-saving". See A.E. Ott: *Produktionsfunktion, technischer Fortschritt und Wirtschaftwachstum* (Production function, technical progress and economic growth), in: Einkommensverteilung und technischer Fortschritt, Schriften des Vereins für Sozialpolitik, N.F., Vol. 17, Berlin 1959, p. 155 *et seq.*

595. Any effect of social security schemes on the quality of the factors of production and the effectiveness of their combined action would thus be just as important as the effects studied so far on the joint amounts on labour capital employed (1) and, if the increase in income per head is taken into account, the former effect would be even more important than all the effects of the quantitative factors combined.

Social security and the quality of manpower

596. Chapter V showed that social security has a number of beneficial effects on the quality of manpower. Above all, it was found that education and vocational training improved, in addition to improvement in health. As regards the social security expenditure which results in a higher standard of education and vocational training, reference can be made to a number of studies concerning the economics of training and education which attempt to evaluate the productivity of the investments involved. (2) These studies—which are not unchallengeable from the methodological and statistical points of view—usually lead to the conclusion that higher, and never lower, productivity is obtained from training expenditure than from investments in equipment.

Social security and efforts to attain economic efficiency

597. It can be assumed that, like every other form of pressure exerted by costs, the pressure which social security charges exert on the profits of enterprises acts as an incentive to rationalization on the part of the enterprises.

It is impossible to prove or disprove the thesis that, when added to the other forms of taxation, social security charges have now reached such a level as to discourage the individual from producing. The argument that, by taking over risks, social security paralyzes initiative and the individual's resourcefulness, could be countered by the opposite conviction that, by relieving the individual of the burden of risks which are entirely or partly beyond his powers to bear, social security releases energies which increase economic efficiency. Neither of these two effects can be evaluated.

Social security, a condition of a peaceful society

598. Social security has a further effect which' in our opinion, is much more important for the efficiency of the economic process. Our present industrial society cannot achieve the political stability which is essential for its existence and development unless it manages to relax social tension sufficiently to ensure social peace. But this is only possible if the individual has adequate cover against the numerous social risks of our constantly and rapidly changing society. Admittedly, there are higher developed countries (the United States is the prime example) which leave a much larger proportion of insurance against these risks to the individual's initiative than is the case in the Common Market countries. But these other countries are also coming more and more to the conclusion that the private precautions which can be taken against such risks are inadequate, and efforts are being made there to extend the social security schemes based on legal compulsion along the lines customary in Europe. In the EEC countries it is at all events considered essential, by means of comprehensive social security schemes, to compensate these risks at national level for the benefit of the classes threatened by them. Thus any appreciable diminution of the protection provided by the social security schemes would not be politically tolerated and would destroy social peace, a basic requirement for steady economic growth.

599. In particular, the economic and social structural changes which are essential for economic growth would not be acceptable to the persons initially affected (e.g. the workers who would become unemployed in agriculture, mining and other declining sectors and occupations) unless these "growing pains" and losses for which they are not themselves responsible and which they could not be expected to foresee are made bearable by social security benefits. These are, therefore, the price of society's consent to economic progress.

Nevertheless, this argument could obviously in no way provide across-the-board justification for social security benefits of every sort and size on the grounds that they are an essential condition for growth.

Conclusion

600. It is impossible to give figures for the effects of social security on that part of economic growth which is not attributable to a quantitative increase in the factors of production but to an improvement in their quality and to better economic use of them. However owing to the importance of the elements mentioned above we consider it justifiable to say that this "technical progress", an essential factor of growth, is not appreciably impeded by social security even under the most unfavourable circumstances. It should be emphasized that, unlike the possible effects on the extent of capital formation, effects on technical progress are frequently felt only in the very long term.

(1) Cf. the model calculations in the Annex to this chapter.
(2) See, for example, H.S. Parnes (ed.): *Planning Education for Economic and Social Development,* OECD, Paris, 1963; E.F. Denison: *The Sources of Economic Growth in the United States and the Alternatives before Us:* CED, Suppl. Paper No. 13, New York, 1962; T.W. Schultz: *Capital Formation by Education,* Journal of Political Economy, Vol. 68, 1960; J.R. Walsh: *Capital Concept applied to Man,* Quarterly Journal of Economics, Vol. 49, 1935, pp. 255-285; H.J. Vosgerau: *Uber Kosten und Erträge von Ausbildungsinvestitionen* (Education investments: costs and returns), Kyklos, Vol. 18, 1965, Fasc. 3, pp. 434-450.

E - SUMMARY OF FINDINGS

601. Both for statistical and for basically methodological reasons, it is impossible to evaluate the incidence of all the current social security schemes on economic growth in the sense of an increase in the real national product. Valid numerical evaluations are conceivable especially within the scope of multi-sector growth models which should be evolved in the future, perhaps for future changes in the current schemes.

As regards the quantitative factors of production represented by the labour and real capital employed, we can indicate a large number of isolated effects which encourage or curb growth but we cannot quantify the resulting overall incidence. Nevertheless, from examination of the potential overall incidence in the light of feasible economic production functions, it can be assumed that its significance for the long-term forecast growth rate of the national product is often overestimated.

602. It is also possible to show the favourable or unfavourable isolated effects of social security on the principal growth factor, i.e. "technical progress"; social security is considered to exert its most important effect here as a social compensating element, assuring the peaceful society which is the essential basis for economic growth.

In view of all the reservations made, the provisional nature of these findings should be obvious, as also should the urgent need for further, exhaustive investigations, which were beyond our powers, in order to solve this major problem. Since, when evaluations of social security are made, the public authorities attach great importance to its impact on economic growth, it seems expedient to conclude by pointing out the danger involved in over-accentuating the aim of economic growth.

603. High and continuous economic growth is only one aim among many. It is not our task to judge whether any slowing-down in the growth rate of the national product which may be induced by social security schemes should be considered more, or less, important than the contribution they make towards the achievement of other aims, particularly those of a social nature. However, at this point we should give a further warning against overestimating the significance of changes in the real national product index on the basis of which economic growth is assessed, in general and by ourselves in this survey. Discussion of this index has shown that it provides little information concerning production efficiency and the satisfaction of individual and social needs as the real object of economic activity. (1) In particular, the index makes no allowance for the distribution of national income, on which depends the extent to which individual and, from the point of view of a social welfare function, social requirements are satisfied—the only valid criterion for economic success. Acceptance of this criterion implies that, since the redistributive effects of social security are taken into account in the considerations concerning growth, growth effects would be attributed to social security which, in their extent and orientation, would diverge considerably from the effects on the "national product" as it is usually defined. At all events, the problems involved in the customary criteria for growth, and the fact that it can never be the sole objective, should be borne in mind before hasty judgments are made regarding the value of social security schemes.

ANNEX TO CHAPTER VII

Simplified dynamic model for calculating the overall impact of social security on economic development (2)

604. The model considered below is based on a production function of the Cobb-Douglas type, i.e.:

$$O_t = aL^{\lambda}{}_t \, K^{\mu}{}_t \, (1 + \nu)^t, \qquad (1)$$

in which

- O_t = gross domestic product for year t;
- L_t = employment in the same year t;
- K_t = the stock of capital in existence at the beginning of the year t;
- λ = elasticity of output in relation to labour;
- μ = elasticity of output in relation to capital;
- ν = annual growth rate of the residual trend;
- a = a constant of size.

605. For simplicity, employment is treated as an exogenous variable which gives

$$L_t = L_o \, (1 + \pi)^t, \qquad (H_1)$$

where π is the annual growth rate of the labour force.

Formula (1) can, then, be written

$$O_t = bK^{\mu}{}_t \, (1 + \pi)^{\lambda t} \, (1 + \nu)^t, \qquad (2)$$

where b is a constant which gives

$$O_o = 100 \quad \text{with} \quad K_o = \frac{1.000}{3}$$

(1) See T. Scitovsky: *Welfare and Competition,* London, 1958.
(2) The numerical calculations were done by the Centre belge de calcul mécanique.

At the same time it is, by and large, true that:

$$O_t = A_t + Y_t + (C^g_t + S^g_t) + (C^s_t + S^s_t) \qquad (3)$$

in which, for the reference year:

A_t = the amount of economic depreciation;

Y_t = the disposable income of households and enterprises;

C^g_t = consumption by the public authorities, excluding the operational expenses of social security;

S^g_t = savings by the public authorities;

C^s_t = the operational expenses of social security;

S^s_t = savings by the social security institutions.

606. For simplicity it is assumed that: $A_t = O$ (H_2) which is tantamount to considering O_t as the net domestic product;

$$S^g_t = O, \qquad (H_3)$$

whence it can be deduced that income from the investments made by the public authorities is offset by the current payments to be made on the public debt and that the public authorities' budget for current operations is balanced.

Thus

$$O_t = Y_t + C^g_t - C^s_t + S^s_t \qquad (4)$$

and

$$S_t = V_t + (X_t - M_t),$$

where S_t = total savings,

V_t = net investment,

$X_t - M_t$ = the balance of current external transactions.

It is assumed that

$$X_t - M_t = O \qquad (H_4)$$

As

$$S_t = S^p_t + S^g_t + S^s_t,$$

where S^p_t = private savings, then

$$V_t = K_{t+1} - K_t = S^p_t + S^s_t \qquad (5)$$

It is also taken that

$$S^p_t = \delta\, Y_t \qquad (H_5)$$

where δ = the savings ratio of households and enterprises.

607. For the social security appropriation account, the equation expressing the balance of resources and outlay can be, by and large:

$$Ct = R_s + T_{gs} = C_s + P_s + S_s,$$

where C_t = the employers' and workers' contributions to social security,

R_s = the financial income of social security minus direct taxes,

T_{gs} = the transfers by the public authorities to social security,

P_s = the social security benefits.

Taking k_t as representing the social security reserves at the beginning of year t,

$$S^s_t = k_{t+1} - k_t = Ct + T_{gs} + R_s - (P_s + C_s) \qquad (6)$$

R_s can then be written

$$\delta t \cdot kt$$

in which

$$\delta t = \mu \frac{O_t}{K t}, \qquad (H_6)$$

showing that the price of capital is equal to its marginal productivity.

608. Finally, the following functions were adopted:

$$C_t = \alpha\, O_t \qquad (H_7)$$

$$T_{gs} = \beta\, O_t \qquad (H_8)$$

$$C^s_t = \gamma\, P^s_t \qquad (H_9)$$

$$C^g_t = \Theta\, O_t \qquad (H_{10})$$

and

$$P^s_t = P^s_o\,(1 + \rho)^t$$

where α, β, γ, Θ and ρ are constants.

Thus the amount of social security benefits is treated as an exogenous variable whose annual growth rate is a constant, ρ.

609. The model can therefore be reduced to the following four equations:

$$O_t = b\, K^{\mu}_t\,(1 + \pi)^{\lambda t}\,(1 + \nu)^t \qquad (7)$$

$$k_{t+1} = k_t = (\alpha + \beta)\, O_t + \mu \frac{kt}{Kt} O_t - \\ - (1 + \gamma)\, \rho^s_o\,(1 + \rho)^t \qquad (8)$$

$$Y_t = (1 - \Theta)\, O_t - (k_{t+1} - k_t) - \\ - \gamma\, P^s_o\,(1 + \rho)^t \qquad (9)$$

$$K_{t+1} = K_t + \delta\, Y_t + (k_{t+1} - k_t) \qquad (10)$$

with four unknowns, O_t, Y_t, K_t and k_t, which can be solved by iteration.

Values of the parameters and initial conditions:

$\lambda = 0.75$ $\mu = 0,25$

$\pi = 0.015$ and $\pi = 0.020$

$\nu = 0.015$ and $\nu = 0.020$

$\alpha = 0.0125$

$\beta = 0.03$

$\gamma = 0.05$

$\Theta = 0.12$

Furthermore

$$k_0 = P^s{}_0 = 15$$

When

$$O_0 = 100 \quad \text{and} \quad K_0 = \frac{1.000}{3}$$

then

$Y = 86.375$; $k_1 - k_0 = 0.875$ and $K_1 - k_0 = 6.0575$

610. The results of the calculations are given in Tables 77 to 85.

TABLE 77

$\pi = 0.015$; $\nu = 0.015$; $\rho = 0.035$

t	k_{t+1}	K_{t+1}	O_t	%	Yt	%
0	15.9	339.4	100		86.4	
				3.1		3.1
1	16.8	345.6	103.1		89.1	
				3.1		3.1
2	17.6	352.0	106.3		91.8	
				3.1		3.1
3	18.5	358.6	109.6		94.7	
				3.1		3.1
4	19.4	365.4	113.0		97.7	
				3.1		3.1
5	20.4	372.3	116.5		100.8	
				3.1		3.1
6	21.3	379.5	120.2		103.9	
				3.1		3.1
7	22.2	386.8	123.9		107.2	
				3.1		3.2
8	23.1	394.3	127.8		110.6	
				3.1		3.2
9	24.0	402.1	131.8		114.1	
				3.1		3.2
10	24.9	410.0	136.0		117.7	
				3.1		3.2
11	25.7	418.2	140.2		121.4	
				3.1		3.2
12	26.6	426.6	144.7		125.3	
				3.1		3.2
13	27.4	435.2	149.2		129.3	
				3.1		3.2
14	28.2	443.9	153.9		133.4	
				3.1		3.2
15	29.0	453.0	158.8		137.7	
				3.2		3.2
16	29.6	462.2	163.8		142.1	
				3.2		3.2
17	30.3	471.6	169.0		146.7	
				3.2		3.2
18	30.8	481.3	174.3		151.4	
				3.2		3.2
19	31.3	491.1	179.8		156.3	
				3.2		3.2
20	31.7	501.2	185.5		161.4	

TABLE 78

$\pi = 0.020$; $\nu = 0.015$; $\rho = 0.035$

t	k_{t+1}	K_{t+1}	O_t	%	Yt	%
0	15.9	339.4	100		86.4	
				3.5		3.4
1	16.8	345.7	103.5		89.3	
				3.5		3.4
2	17.8	352.3	107.1		92.4	
				3.5		3.4
3	19.0	359.1	110.8		95.6	
				3.5		3.4
4	20.2	366.3	114.7		98.9	
				3.5		3.4
5	21.5	373.8	118.8		102.3	
				3.5		3.5
6	23.0	381.6	123.0		105.8	
				3.6		3.5
7	24.6	389.8	127.4		109.5	
				3.6		3.5
8	26.4	398.4	131.9		113.3	
				3.6		3.5
9	28.4	407.4	136.6		117.2	
				3.6		3.5
10	30.6	416.8	141.5		121.3	
				3.6		3.5
11	33.0	426.8	146.6		125.5	
				3.6		3.5
12	35.7	437.3	152.0		129.9	
				3.6		3.5
13	38.7	448.4	157.5		134.4	
				3.7		3.5
14	42.1	460.1	163.3		139.1	
				3.7		3.5
15	45.8	472.4	169.3		144.0	
				3.7		3.5
16	49.9	485.5	175.6		149.0	
				3.7		3.5
17	54.6	499.4	182.1		154.3	
				3.7		3.5
18	59.8	514.2	188.9		159.7	
				3.8		3.5
19	65.6	529.9	196.1		165.3	
				3.8		3.5
20	72.1	546.7	203.5		171.1	

Tables 77, 78 and 79 correspond to an annual growth rate of the total amount of social security benefits by 3.5 %.

The results in Table 77 show that an expansion of social security benefits of this order of magnitude, i.e. at a growth rate higher than that of the gross national product (from 3.1 % to 3.2 %), cannot harm economic development provided certain essential conditions, which constitute basic hypotheses, for the model, are satisfied (balanced budget for current operations, favourable current external trade balance, productive investments).

In the present case, although the savings ratio of households and enterprises is relatively low and the level of technical progress is modest, capital formation develops favourably, helping to ensure a disposable income which

TABLE 79

$\pi = 0.015$; $\nu = 0.020$; $\rho = 0.035$

t	k_{t+1}	K_{t+1}	O_t	%	Yt	%
0	15.9	339.4	100		86.4	
				3.6		3.5
1	16.8	345.7	103.6		89.4	
				3.6		3.5
2	17.9	352.3	107.3		92.6	
				3.6		3.5
3	19.1	359.3	111.2		95.9	
				3.6		3.5
4	20.4	366.6	115.3		99.3	
				3.7		3.6
5	21.9	374.2	119.5		102.8	
				3.7		3.6
6	23.6	382.3	123.9		106.5	
				3.7		3.6
7	25.5	390.8	128.5		110.3	
				3.7		3.6
8	27.6	399.7	133.3		114.2	
				3.7		3.6
9	29.9	409.2	138.3		118.3	
				3.7		3.6
10	32.6	419.2	143.4		122.5	
				3.8		3.6
11	35.5	429.8	148.9		126.9	
				3.8		3.6
12	38.9	441.0	154.5		131.5	
				3.8		3.6
13	42.6	452.9	160.4		136.2	
				3.8		3.6
14	46.9	465.6	166.5		141.1	
				3.9		3.6
15	51.6	479.2	173.0		146.2	
				3.9		3.6
16	57.0	493.6	179.7		151.4	
				3.9		3.6
17	63.1	509.1	186.7		156.9	
				3.9		3.6
18	69.9	525.7	194.1		162.6	
				4.0		3.6
19	77.6	543.5	201.8		168.4	
				4.0		3.6
20	86.3	562.7	209.9		174.5	

grows in exactly the same way as the gross national product.

611. Furthermore, Tables 78 and 79 show that, when the growth rates of social security benefits are maintained during a certain period at the level of the growth rate of the GNP, social security is likely to have a good effect on economic development. This trend will obviously be strengthened when the growth rate of the labour force increases or when the level of technical progress rises.

The results shown in Tables 80 to 82 are based on an annual growth rate of the overall amount of social security benefits by 5 %.

In all these cases the growth of the disposable income of households and enterprises speeds up, whereas the growth rate of the GNP slackens. The social security reserves decrease after reaching a peak, and dissaving finally occurs to a greater or lesser extent.

612. The results in Tables 83 to 85 are based on a growth rate for social security benefits of 10 %. It is obvious that in this case social security is liable to disturb economic development more or less seriously, i.e. when the overall amount of benefits grows at an excessive rate. It goes without saying that, if an expansion of this amplitude is to be reconciled with the requirements of a balanced administration of social security, parameters α and ρ cannot remain constant; in other words, here it will be necessary to raise the rates of contributions and the subsidies provided by the public authorities.

Naturally, the unfavourable tendency illustrated in Tables 83 to 85 could be alleviated if the central authority, instead of balancing its operational budget as supposed, financed all or part of its investments from its current receipts.

TABLE 80

$\pi = 0.015$; $\nu = 0.015$; $\rho = 0.05$

t	k_{t+1}	K_{t+1}	O_t	%	Yt	%
0	15.9	339.4	100		86.4	
				3.1		3.4
1	16.5	345.4	103.1		89.3	
				3.1		3.4
2	16.9	351.3	106.3		92.3	
				3.1		3.4
3	17.0	357.1	109.5		95.5	
				3.1		3.4
4	16.7	362.7	112.9		98.7	
				3.0		3.4
5	15.9	368.1	116.3		102.1	
				3.0		3.5
6	14.7	373.3	119.8		105.7	
				3.0		3.5
7	12.9	378.0	123.4		109.4	
				3.0		3.5
8	10.4	382.3	127.1		113.2	
				2.9		3.6
9	7.1	386.0	130.8		117.2	
				2.9		3.6
10	2.9	389.2	134.6		121.4	
				2.8		3.6
11	— 2.3	391.5	138.4		125.7	
				2.8		3.6
12	— 8.7	392.9	142.3		130.3	
				2.7		3.7
13	— 16.6	393.1	146.2		135.1	
				2.7		3.7
14	— 26.1	392.0	150.1		140.1	
				2.6		3.7
15	— 37.5	389.3	153.9		145.3	

TABLE 81

$\pi = 0.020$; $\nu = 0.015$; $\rho = 0.05$

t	k_{t+1}	K_{t+1}	O_t	%	Yt	%
0	15.9	339.4	100		86.4	
				3.5		3.7
1	16.6	345.5	103.5		89.6	
				3.5		3.7
2	17.1	351.6	107.1		92.9	
				3.5		3.7
3	17.4	357.6	110.8		96.3	
				3.5		3.7
4	17.4	363.6	114.6		99.9	
				3.4		3.7
5	17.1	369.6	118.6		103.7	
				3.4		3.8
6	16.4	375.3	122.6		107.6	
				3.4		3.8
7	15.3	380.9	126.8		111.7	
				3.4		3.8
8	13.7	386.2	131.1		115.9	
				3.4		3.8
9	11.5	391.2	135.6		120.4	
				3.4		3.8
10	8.5	395.8	140.1		125.0	
				3.3		3.9
11	4.8	399.9	144.8		129.8	
				3.3		3.9
12	1.7	403.3	149.5		134.9	
				3.2		3.9
13	— 5.6	406.0	154.4		140.2	
				3.2		4.0
14	— 12.6	407.7	159.3		145.7	
				3.1		4.0
15	— 21.2	408.2	164.3		151.1	

TABLE 82

$\pi = 0.015$; $\nu = 0.020$; $\rho = 0.05$

t	k_{t+1}	K_{t+1}	O_t	%	Yt	%
0	15.9	339.4	100		86.4	
				3.6		3.8
1	16.6	345.5	103.6		89.6	
				3.6		3.8
2	17.2	351.6	107.3		93.1	
				3.6		3.8
3	17.5	357.8	111.2		96.6	
				3.6		3.8
4	17.6	363.9	115.2		100.3	
				3.6		3.9
5	17.5	370.0	119.3		104.2	
				3.6		3.9
6	17.0	376.0	123.6		108.2	
				3.6		3.9
7	16.1	381.9	128.0		112.4	
				3.5		3.9
8	14.8	387.6	132.5		116.8	
				3.5		3.9
9	12.9	393.0	137.2		121.4	
				3.5		3.9
10	10.5	398.1	142.0		126.2	
				3.5		4.0
11	7.3	402.8	147.0		131.2	
				3.4		4.0
12	3.2	407.0	152.0		136.5	
				3.4		4.0
13	— 1.8	410.4	157.2		141.9	
				3.4		4.0
14	— 8.0	413.1	162.5		147.7	
				3.3		4.1
15	— 15.5	414.8	167.9		153.7	

TABLE 83

$\pi = 0.015$; $\nu = 0.015$; $\rho = 0.10$

t	k_{t+1}	K_{t+1}	O_t	%	Yt	%
0	15.9	339.4	100		86.4	
				3.1		4.2
1	15.7	344.6	103.1		90.0	
				3.0		4.3
2	14.3	348.9	106.2		93.9	
				3.0		4.4
3	11.5	351.9	109.4		98.1	
				2.9		4.6
4	6.8	353.3	112.5		102.6	
				2.7		4.7
5	— 1.4	352.9	115.6		107.4	
				2.6		4.8
6	— 9.7	350.1	118.6		112.6	
				2.4		5.0
7	— 22.4	344.5	121.5		118.1	
				2.2		5.1
8	— 38.9	335.4	124.2		124.2	

TABLE 84

$\pi = 0.020$; $\nu = 0.015$; $\rho = 0.10$

t	k_{t+1}	K_{t+1}	O_t	%	Yt	%
0	15.9	339.4	100		86.4	
				3.5		4.6
1	15.8	344.7	103.5		90.3	
				3.4		4.6
2	14.6	349.2	107.0		94.5	
				3.3		4.7
3	11.9	352.4	110.6		99.0	
				3.3		4.8
4	7.5	354.3	114.2		103.8	
				3.1		5.0
5	1.0	354.3	117.8		108.9	
				3.0		5.1
6	— 8.0	352.2	121.4		114.5	
				2.9		5.2
7	— 20.1	347.3	124.8		120.4	
				2.7		5.4
8	— 35.8	339.2	128.2		126.9	

TABLE 85

$\pi = 0.015$; $\nu = 0.020$; $\rho = 0.10$

t	k_{t+1}	K_{t+1}	O_t	%	Yt	%
0	15.9	339.4	100		86.4	
				3.6		4.7
1	15.8	344.8	103.6		90.4	
				3.6		4.7
2	14.6	349.2	107.3		94.7	
				3.5		4.8
3	12.0	352.6	111.0		99.3	
				3.4		4.9
4	7.7	354.6	114.8		104.2	
				3.3		5.0
5	1.4	354.8	118.5		109.5	
				3.2		5.2
6	— 7.4	352.9	122.3		115.1	
				3.0		5.3
7	— 19.3	348.3	126.0		121.2	
				2.8		5.5
8	— 34.7	340.5	129.5		127.8	

613. In its present form, this study could not contain definitive conclusions. As was already stated in Chapter I, it represents only a first step, for the purpose of informing the Community on the position of investigations and work which have not been and could not be exhaustive, and which have not been able even to touch upon certain points of vital importance.

The main intention of the Committee of experts here is to recapitulate succinctly, in a more co-ordinated and systematic fashion, considerations which have already been developed in the preceding chapters from angles that sometimes differed.

614. The Committee also thinks it worthwhile to emphasize again the principal difficulties encountered during its investigations, some of which prevented it from following the course it had marked out for itself as closely as it would have wished.

It was no easy task to decide the limits for the studies, or to select the features for priority treatment. And, although the Committee succeeded in evolving new methods for detailed examination of certain difficult questions, in the case of other questions lack of data which were suitable, sufficient and comparable from one country to another sometimes prevented it from drawing conclusions supported by satisfactory quantitative arguments.

615. Moreover, for the economist, even the limits of social security are not clearly and unambiguously marked. As a whole, the social policies of the six countries of the Community resemble each other much more than they differ. But the part of these overall policies that the social security institutions are responsible for administering is not everywhere the same. Thus, benefits (or levies) which are of clearly social nature may very well not be legally classified, in certain countries, under social security in the strict sense or even in the broad sense, whereas their effects on the economy are wholly comparable to those of social security. (Here, to give only a few examples, we might quote holiday allowances and various forms of medical care: industrial, preventive, curative...) However, as was said in Chapter I, the Committee was able to choose as framework the social security systems that conformed to the definition given in the recent study by the Statistical Office of the European Communities *"Les comptes sociaux des pays membres de la CEE"*; when, in certain cases, this rule was departed from, this has been explicitly stated.

616. Naturally, the personal experiences of each of the experts relate chiefly to the methods of implementing social security in his own country. These methods may sometimes differ sufficiently for their economic effects not to be the same from one Member State to another. This fact has led certain experts to suggest conclusions that are no doubt valid for their own national institutions, which had served them as example, but could not be accepted by some of their colleagues, since the situation seemed to them to be distinctly different in *their* country.

617. Despite very remarkable efforts by the Statistical Office of the European Communities, the lack of coherence and homogeneity which still characterizes too many of the data collected and used for compilation of national statistics, and even, in some cases the complete absence of such data, gave the editors of the various chapters a great deal of trouble. The editors have only rarely been able to make quantitative comparisons between countries and between institutions which were sufficiently valid to enable conclusions to be drawn regarding the relative social and economic effectiveness of the various national arrangements.

618. Finally, the very limited number of detailed studies in this field to which reference could be made (at national level and, especially, international level) obliged several of the experts to work out entirely new methods or to modify others profoundly in order to adapt them to the special case of the Community. The need to simplify lines of reasoning and calculations often meant that the models used could not take account of certain elements which it would have been technically desirable to introduce into them. However, we hope that the results obtained, limited and partial though they may be, will make a very useful contribution towards a more scientific and rational knowledge of these problems which are still generally so little understood.

There is therefore all the more reason for recapitulating, at any rate summarily, the substance of the preceding chapters, and for drawing the conclusions that each of them seems to call for.

Chapter II

619. a) This chapter contains an examination of the immediate effects of social security on the initial distribution of incomes, examination of the remote effects being deferred to Chapter III.

After the initial distribution of incomes has been defined as "the distribution of the national income among the owners of the means of production, resulting from the allocation to each of them their share by virtue of contracts or of laws in force", it is seen that the effects of social security on the distribution of incomes can be examined, with reference to the particular aims in view, by considering the distribution according to the socio-economic status of the recipients (horizontal distribution), the amount of income received (vertical distribution), or the place of residence of the recipients (territorial distribution).

620. The extent to which social security will influence the initial distribution of incomes is then shown to depend on various factors, such as the form of administration, the form of financing, and the nature of the benefits.

b) The next object of study is the method of calculating the distribution of derived incomes by socio-economic category, by income class or by region, i.e. the initial distribution modified by the action of social security. It is seen that the accounting method applied at the macro-economic or national, aggregated level is valid but insufficient for calculations at the disaggregated, micro-economic level. At micro-economic level the method has to be supplemented by other procedures, which will vary from country to country according to the statistical material available.

By way of example mention is then made of the procedures followed in various countries in order to ascertain the initial distribution of incomes, benefits and contributions levied, by socio-economic category, by income class, or by region.

621. With all the necessary reservations, the results are then given of some surveys carried out by various specialists in three Community countries (France, Germany and Italy). These show that the derived distribution by socio-economic category differs, to an extent which is far from being negligible, from the initial distribution in so far that the incomes of the highest socio-economic categories have diminished whereas those of pensioners have increased. The derived distribution by income class also proves, at any rate in Germany, to differ greatly from the initial distribution because the incomes of the lowest classes have increased whereas those of the highest classes have decreased.

It was also found that social security considerably modifies the initial territorial distribution (France, Italy) as a result of transfers of income which generally take place from regions in which the average income per head is higher to regions where the average income is lower.

Chapter III

622. The levying of social security contributions, and the grant of social security benefits, initiate processes of adjustment which change all the income flows in the incomes circuit. A simple circular-flow model has been worked out in this chapter for the purpose of analysing these important consequences at the level of distribution policy, prices, the economic situation and economic growth. It enables a comparison to be made of the general flows which determine the genesis, distribution and utilization of the national product, before and after changes in social security benefits and contributions.

623. Several examples based on reasonable hypotheses concerning the most important forms of behaviour made it possible to show that the effects on the flows of a change in benefits and contributions depend on a number of factors which vary considerably from one country to anther or even with the economic situation within one country. However, the Committee of experts thinks it can show that, in the medium and long term, some part at least of the payments made under the heading of social security is generally passed on as increases in wages and prices; that the workers have to bear a considerable proportion of the real burden of social security benefits; that heads of enterprises are hardly affected by it; and that the real value of social security benefits is reduced for the recipients by price increases resulting from their repercussion.

624. The theoretical model worked out in this chapter was chosen in such a way that the necessary hypotheses of behaviour had already been determined econometrically (see Annex II), or could be so determined for the most part, with little trouble and with sufficient accuracy for the purposes of economic policy, on the basis of economic and social policy data available in the Common Market countries (for example, consumption functions and tax functions for various social categories). The model is therefore a suitable basis for planning measures of social policy and analysing their effect. Since models of this kind make it possible to analyse the effect not only of measures taken in the field of social security but also of all the financial interventions of public budgets in the incomes circuit, they can likewise be used to harmonize social policy with the other objectives of economic and financial policy in the framework of short- or medium-term economic planning.

625. It seems desirable, and perfectly practicable in view of the constant progress being made in national accounting and its economic application, to expand, in the future, this simple circular-flow model by elaborating its individual variables. A more detailed breakdown of household budgets between social categories and administrations' budgets between public bodies, would yield valuable additional information on economic and social policy. An input-output table giving a breakdown between a larger number of production sectors for the whole value-added sector in the model would also be extremely useful. It would enable the circuit analysis of Chapter III to be linked with the analysis of the effects of changes in social security on the costs which was carried out by means of input-output tables in Chapter VI. In particular, connection of the circular-flow model with an input-output table would enable us to see whether measures of social policy may give rise to imbalances between supply and demand in various economic sectors.

Chapter IV

626. The volume and pattern of consumption are determined to a large extent by the distribution of incomes. It is therefore obvious that the incidence of social security on consumption depends upon its incidence on the distribution of incomes.

Starting from this hypothesis, it was possible to see whether the results of the method used in Chapter II to ascertain the incidence of social security on the distribution of incomes could serve as basis for the quantification of its incidence on consumption. Our conclusion had to be negative, since we do not know either the portion of income which a society without social security would devote to consumption or the pattern of that consumption. This conclusion is illustrated by a general analysis of the way in which a society lacking a social security system could meet needs which at present are covered by social security.

627. This objection does not apply to quantification of the effects of changes in the social security system on consumption. The resulting modifications in the distribution of incomes can be ascertained. If sufficient data are available on the correlation between the volume of incomes and that of consumption, it will be possible to determine the effect of a change in the distribution of incomes on consumption. However, this can only be done if the consumption ratios are not influenced by the changes in social security. When such changes are marginal, it can, in general, be supposed that the consumption ratios will remain unchanged. When the changes are relatively substantial, it will be necessary to bear in mind the fact that a modification in the pattern of expenditure can cause a variation in the consumption ratios. Moreover, the effects of possible passing-on of the modified charges will then be more perceptible.

628. Various conditions therefore have to be met if the effect of changes in social security arrangements on consumption is to be quantified. The first of these conditions is a knowledge of consumption functions indicating the relation between the level of incomes and the volume of consumption. Since changes in social security arrangements often concern specific socio-economic categories, the consumption functions for those categories would also have to be determined separately. And, in view of the possibilities of repercussion, it is also desirable that the consumption functions should be included in a circular-flow model.

629. The impact of social security on consumption is a result of transfers of income caused by social security. The volume and direction of these transfers are not predetermined, but depend on various factors such as the level of entitlement and the methods of financing. An attempt has been made to give a general view of the influence that certain combinations of these factors may have on consumption.

630. For cash benefits which replace incomes, it is estimated that the influence of social security on consumption will probably depend on the level of benefits in relation to the initial income, bearing in mind a possible diminution in social security contributions and direct taxes. Naturally, the method of financing is also of importance. If financing is carried out with the help of public funds, its effect on consumption cannot be exactly measured. If financing is carried out by the payment of contributions, the overall effect on consumption can be ascertained by studying a number of cases. Finally, attention is drawn to the specific problems arising when old-age benefits are financed by the capital cover system. The possible changes in the value of currency then constitute a factor which also influences the consumption possibilities of the beneficiaries.

In the matter of family allowances, the conclusion is reached that, whatever the way in which they are financed, they will cause an increase in the consumption of families with children.

631. Special attention is given to insurance against costs of medical treatment and health care. Entitlement here depends on the consumption of certain goods, while the systems adopted—benefits in kind, total or almost total reimbursement of expenses—cause the buying power of the persons concerned to have little or no influence on consumption. As regards the quite considerable rise in the costs connected with this branch of social security, and the claims that these schemes lead to excessive consumption, it is suggested that the question be examined of those benefits where the volume of consumption depends on the behaviour of the insured persons and on the behaviour of the medical personnel. In the matter of

the benefits whose volume can be influenced by the insured persons, attention is drawn to the importance of studies aimed at obtaining an idea of what effect a reduction in the compensation under a specific benefit may have on the volume of consumption.

Chapter V

632. The study of the effects of social security on employment was based to a very large extent on the quantitative data available, and no particular method of approach was proposed in this chapter.

These effects are varied, and sometimes conflict with each other. They are exerted both on the supply and on the demand for manpower.

633. The effects on the supply of manpower can be classified in three main groups:

(*a*) The effects which raise the quantity and quality of the supply of manpower. These include the family allowance schemes, because of their demographic incidence and the influence they exert on the raising of the school-leaving age, and the sickness and invalidity insurance schemes because of the beneficial influence they have on the level of health of the population;

(*b*) The effects which temporarily reduce the supply of manpower. This group includes the family allowance schemes because they favour a longer time at school and more thorough vocational preparation and because they postpone the age at which young people enter economic life, and the invalidity and maternity leave schemes because they relieve the persons concerned of the pressing need for income and enable them to return to work fully restored to health and strength;

(*c*) The effects which reduce the supply of manpower. The result of the old-age pension schemes is that most workers leave the labour market at the legal pensionable age. The existence of such schemes constitutes an indispensable social achievement, but nevertheless reduces the supply of manpower.

634. Everything indicates that, apart from entirely marginal cases, unemployment insurance does not have the effect of reducing the supply of manpower. The latter depends on the demand for manpower, and is not voluntarily reduced as a result of the existence of insurance against unemployment risks.

Furthermore, the supply of manpower does not seem to be reduced by the level of the social security contributions levied on wages and salaries. The individual's material and moral obligation to work necessarily prevails over the aspect of the weight of social security contributions.

635. The effects of social security on the demand for manpower can be analysed via the benefits, and, in particular, via the redistribution of part of the national income in accordance with health requirements or social needs. This redistribution has direct effects on household budgets, and stimulates the demand for certain consumer goods and consequently employment in certain fields.

636. As regards financing, it is observed that the employer's contribution on the basis of his wage bill, which is a major element in financing social security in the Community countries, is an inducement for employers to reduce their labour costs and even to proceed to automation.

The effects would nevertheless be different if social security were to be financed by a contribution based on value added, or if it was financed directly and wholly by taxation.

637. There is therefore no strict connection between the various effects of social security. Through its benefits it tends to increase, in the lives of insured persons, the proportion of time off to the time spent at work, and this result is, moreover, one of the main social achievements of our time. Through its stimulating effect on consumption, social security has a positive influence on the demand for manpower, but the way in which it is financed in the countries of the European Community urges employers to reduce their labour costs.

In general, social security undoubtedly influences strains on the labour market. This stimulating action is beneficial in situations of stagnation or recession, but may promote inflation in periods of overemployement.

Chapter VI

638. Social security has certain effects on the price system because the grant of benefits influences consumption and the levying of means to finance it helps to determine production costs. Chapter VI is devoted to examination of the second of these aspects, for it was found very important to ascertain the extent to which the systems of financing social security are at the root of differences in costs, and consequently in prices, in the Common Market, and whether a possible harmonization of these schemes would or would not reduce the differences considered.

639. This question was approached, to begin with, by an extremely simple method which nevertheless furnished some useful information. In order to analyse the immediate effect of social security contributions on total labour costs, the statistics, provided by the EEC on

labour costs and their components were examined and processed; this led to the conclusion that there is no actual correlation in the Community between the level of social charges and overall labour costs. Furthermore, it was found possible to conclude, albeit with some reservations, that the general thesis that any approximation of the level of social charges in the various countries would inevitably bring about approximation of the level of labour costs was inexact; the examples chosen showed that in certain cases these charges increase the differences to an equal extent.

640. However, social security contributions represent only a part of the production cost and, in consequence, of the price of a product. Owing to the economic interdependence of the various sectors, labour costs in one sector have repercussions on the cost of the raw material used by the other sectors, so that the price of a product will be influenced both directly and indirectly by a measure which changes the criteria for financing social security.

The second part of this chapter was aimed at determining whether possible harmonization of the financing systems in the six countries would or would not cause an approximation in prices and consequently mitigate distortions, due account being taken of the economic interdependence mentioned.

641. For this purpose, an original method was used, based on the input-output tables already available for five of the six Community countries.

Like all economic methods, ours is subject to certain limitations and hypotheses. For it is based on potential variations in price, without taking account of variations in consumption, factors of production, etc.; nevertheless, it gives useful information on the possible effect on prices of a change in the system of financing social security, provided sufficiently detailed tables and homogeneous price series are available.

642. Unfortunately, the excessive number of sectors (35) figuring in the available tables, the need to have recourse in some cases to estimates rather than concrete figures, and, finally, the lack of homogeneous price statistics limit, to a certain extent, the conclusions that can be drawn from the method. However, its application to five countries in the Common Market, on the basis of seven different hypotheses for harmonization of the systems of financing social security, proves that extreme caution must be observed in taking steps to harmonize these systems, because such steps may have opposite effects at one and the same time as regards the different industries, the different products, wholesale and retail prices, etc.

Although no general conclusions could be drawn, it became clear that detailed studies should be carried out at national level by the method mentioned, and that, for this purpose, all the countries should make arrangements for collection of statistical material suitable for more significant investigations than the present one.

Chapter VII

643. The effects of social security on the development of short-term economic processes are studied in this chapter. An analysis is carried out of the extent to which the variations undergone by social security receipts, expenditure, and investments from one phase of the economy to another reinforce (pro-cyclical effect), weaken (anti-cyclical effect) or do not influence (neutral effect) the short-term fluctuations of the national product.

644. These effects could not be quantified. This is only very partially due to lack of statistics, because the main data on receipts and expenditure in the various fields of social security at different stages in the current economic situation are available. More serious reasons consist in our inadequate knowledge of conditions of repercussion, studied in Chapter III, which are of importance for short-term economic effects, and the lack of sufficiently well-tried behaviour functions in the econometric sphere (for example, consumption and investment functions). Hence, a vast field remains open for investigation. However, the impossibility of quantifying these effects is due first and foremost to simple methodological difficulties such as ignorance of the development of the economic situation in fictitious economies without social security, a development with which that of the economic situation in our real economies could be compared and the impossibility of clearly distinguishing long-term structural changes in social security from short-term economic changes.

645. It was nevertheless possible to draw important conclusions regarding quality from the data available. In the EEC countries, the method of calculating the benefits and contributions of the social security schemes is such that, during an economic recession, one can expect an anti-cyclical increase in expenditure on social security benefits and a decrease in income from contributions, which is favourable from the point of view of short-term economic policy. In times of economic expansion, if social benefits per recipient were to remain the same, an anti-cyclical effect could also be expected which would again be favourable from the point of view of short-term economic policy, namely, an increase in contributions and a decrease in expenditure. Nevertheless, this tendency is more than counterbalanced, in particular, by the entirely justified propensity in social policy to improve social security benefits in boom periods at the same rapid rate as incomes from employment. As a rule, social policy sets its face against saddling the recipients

of social security benefits with the burden of stabilizing the economy by requiring them to give up income. The only way of appreciably mitigating this conflict between social policy and short-term economic policy would seem to be a co-ordinated policy for the economy and for incomes which would enlist the help of all social classes in stabilizing the economic situation.

646. Analysis of the effects of social security on economic growth is much less certain even than the analysis of its effects on the current economic situation, because at present there is no incontestable growth theory, adequately confirmed by experience, on which it could be based. Since the present study has embraced analysis of the influence of social security on the volume and effectiveness of the factors of production employed, labour (Chapters V and VII) and capital (Chapters III, IV and VII), the basis taken was, quite naturally, a growth model which explicitly takes account of the volume and effectiveness of these factors of production and has been sufficiently tried, in the econometric field, in respect of a large number of economies, viz., the Cobb-Douglas economic production function.

647. Unfortunately it was not possible to quantify as much as was desirable the effects of social security on the volume and productivity of the two factors labour and capital, in order to calculate the resulting growth statistically. However, the Annex to Chapter VII shows what quantitative influence the growth rates of the national product can undergo if various plausible theories are adopted for the possible effect of social security on labour and the formation of capital. Since the universal applicability of the theories could not be proved, the Committee confined itself to analysing, by the production function mentioned, the possible significance for economic of the qualitative conclusions reached in the part of the chapter concerning the impact of social security on these growth factors. A dual hypothesis was put forward. According to this, the alleged negative influence that social security could exert on the formation of capital, and consequently on economic growth, by eliminating the need for private savings to cover the risks now covered by social security, is overestimated, and the factors inhibiting growth are counterbalanced by others which favour it.

648. The Committee of experts knows that its work requires considerable improvement, more particularly as regards knowledge of the connection between social security and economic growth. Topics for analysis which seem especially promising are the breakdown of the growth model used in Chapter VII and, above all, use of the input-output tables already calculated for the Common Market countries, in order to study the extent to which changes in the social security system provoke imbalances between sectors which are prejudicial to growth or structural conversion which is favourable to it.

649. In addition to the few main problems which were studied in the seven chapters of the report—and certain others which were mentioned and sometimes partially dealt with at the same time—it would obviously have been highly desirable to give much attention to subjects of topical interest, the study of which had, for that matter, been envisaged at the first meetings of the Committee but could not be accorded priority treatment By way of example, one might quote the effects of social security:

(*i*) on the demographic trend (in particular on the ageing or rejuvenation of the population);

(*ii*) on the mobility of the various factors of production, in particular manpower;

(*iii*) on the interaction of the various methods of financing social security with the taxation system proper.

650. Some of the experts would have liked to investigate the extent to which a traditional, liberal, competitive medical system is compatible with compulsory collective coverage of social risks. A further suitable subject for study would have been the conditions of coexistence between State schemes, schemes established by collective agreement, and private insurance.

651. It would undoubtedly have been useful to try to ascertain the effects of social security (or of the various social security schemes) on competitiveness and on competition at both international and Community level; this is a topical problem of which certain aspects are dealt with in some of the chapters anyway. But, after a first examination, it was found preferable to postpone exhaustive study of the question to a later phase; for it would have to be treated as part of a complex process of development and attention would have to be given at the same time to its general economic, fiscal, financial and even short-term economic aspects.

652. Another "dynamic" study, concerning the probable medium-term trend in expenditure and receipts of the various European social security institutions, was assigned to another group of independent experts and is still in progress. It is bound to call for other studies to be made, as was stated in "l'Exposé sur la situation économique et sociale de la Communauté en 1965" (Report on the economic and social situation in the Community in 1965), section 147, according to which, in several countries "economic and financial considerations" have led to the incorporation of "social security into an overall view of future economic and social development".

"Now, it is obvious that such incorporation raises, in its turn, a number of problems which are far from being negligible at Community level. In the first place, it presupposes a systematic economic evaluation of the factor 'social security' but also and primarily, deep thinking about the role and the place of social security in a society undergoing rapid change."

653. The Report goes on to say that "if investigation of these two aspects were to be carried on exclusively in a national context, it is to be feared that it would end in divergent conclusions, and finally, in options that would compromise the future in such a way as to make subsequent acceptance of the smallest corrective on Community grounds very difficult."

654. These various considerations therefore bring us back to the very delicate problem of harmonization. The Committee was not able to examine the possible content and limits of such harmonization; but, being aware of the extreme importance of the matter, it feels that some—very general—remarks are called for.

655. There is a great temptation to postpone harmonization in a specific sector—especially when it might also give rise to tricky social problems—until the distortions existing in neighbouring sectors have been eliminated. But the experts consider that such an extreme and negative standpoint would be illogical and calculated to block all possibility of achieving a real economic Community. The fact that great progress has been recently made towards harmonization of indirect taxes also deprives those favouring the *status quo* of an important argument.

656. Furthermore, the various national social security schemes represent the culmination of long historical processes which have often given them the character of "social victories". This is apparent notably in their legal structures, in the multiplicity in certain countries of "special" or "supplementary" schemes side by side with the general scheme. Among these, some are relatively young, others have reached maturity, while the obsolescence of some of them sometimes raises special problems.

All according to the periods when the various schemes were established or modified, and the political and ethical concepts prevailing at the time, we find differences in the principles on which they were based and which justified the different ways in which they were applied.

657. The significance of benefits in the net income of households, like that of indirect wages in proportion to direct wages, varies from country to country. The share in financing required from the insured persons, from the employers, from the public budgets (a share which, as Chapter III shows, does not always correspond with the share which the apparent payers actually have to bear) greatly varies from scheme to scheme within the same country and from country to country.

658. As regards expenditure, a more or less large proportion goes to old-age pensions (granted sooner or later), to family allowances, to invalidity or sickness benefits, and to unemployment benefit. Naturally, as was explained in Chapter II, the principles and methods chiefly derive from the traditional conception of social insurance (with benefits proportioned to the share borne by the insured) or from the principles of "solidarity" which Lord Beveridge explained so lucidly.

659. As a result, there are arrangements which yield more, or less, advantages (either really or apparently, according to whether they entail heavier actual burdens for the beneficiaries, as a counterbalancing element); hence, in individual schemes and countries, "acquired rights" are found which are above the average and which some experts consider are never likely to be lowered, since, for psychological and political reasons, in practice social security benefits can only be harmonized upwards.

660. Although, as a whole, the social security systems of the six countries resemble each other more than they differ, these problems should not be underestimated, for they are the reasons why harmonization between the particular national schemes has remained imperfect.

However, the main object must be to ensure that in the future the European social security systems grow together more and more, instead of diverging without heeding Community interests.

661. One of the first questions to be resolved would be the definition of what is meant by harmonization.

At first sight a harmonization "by costs" looks like a very useful supplement to the harmonization of taxation already embarked upon; but it is obviously difficult to decide on a general optimum rate of financing for "indirect wages" without previously agreeing on the weight to be given to the "social" part in comparison with the "economic" part of wages, and hence without devoting some attention to harmonization of the benefits themselves.

662. Differences in social charges in one branch from one country to another do not necessarily lead to distortions of competition if they leave gross wages unchanged and modify only the relation of direct wages (available) to indirect wages (linked to social contributions). The extent to which this is the case, and the extent to which differences in social charges lead to differences harmful to competition, are questions that remain to be examined.

663. In any case, harmonization by costs is at present the question that raises the most pressing problems from the economic point of view. The experts would therefore like to suggest that studies should be undertaken with the

object of establishing the necessary criteria for a gradual harmonization of social legislation, and that the list should then be proposed of successive measures whose adoption would appear advisable in order to achieve a gradual approximation of the various national social security systems.

664. Bearing in mind the development of standards of living in the Member States, the possible increases in social charges from taxation which the general economy and households can bear, and the requirements of the economic situation, the Community authorities would then periodically review the position to see wether the moment had come for applying certain of the measures which had been decided on in principle.

At all events this method would have the advantage, without jeopardizing present progress, of asserting the ultimate need for effective (if not complete) harmonization of Community social policies.

665. The experts think that, in every case, Community guidelines would be indispensable to ensure that the national laws and regulations are not modified unilaterally before the Six are consulted, in order to avoid, as far as possible, the initiation of additional divergences in conflict with the spirit if not with the letter of the Treaty of Rome.

666. At this moment, which sees the completion of its task, the Committee of experts would like to place very special emphasis on the following points:

667. 1. The Committee is becoming more and more convinced of the need to pursue, in the field of social security and allied fields, researches for the purpose of obtaining more coherent and more complete economic and statistical knowledge of social security and its interactions with the general economy in the six countries.

No criticism is intended here of the Statistical Office of the European Communities, for whose very considerable work the experts had nothing but praise: but, generally speaking, they noted that, in several of the member countries, knowledge of the following matters was very approximate or imperfect:

i) the "protected population" (classified by socio-occupational categories and by income classes);

ii) redistribution phenomena (with comparisons, according to the same categories, of incomes before and after "social transfers");

iii) costs and advantages of the various methods applied by each of the European schemes for granting equivalent benefits.

All this means that it is necessary to be very careful in drawing conclusions from economic studies which, if they could be based on more reliable sources, should not present great difficulties.

668. 2. The fundamental aim of social security is to further human progress. But, in addition, it is an element making for social equilibrium which has become essential in our European countries where the rapid economic growth that is necessary for generally raising the standards of living overturns the traditional structures and thus creates painful strains. These strains have to be alleviated by guaranteeing more security and solidarity, in particular by the distribution of increased social benefits.

669. 3. However, the fact that social security plays this prominent role, and also contributes, through certain of its effects, to economic expansion (as several chapters have shown), does not mean that its "own dynamism" must remain uncontrolled, and that the growth rate of social expenditure may exceed that of the national income for a long time and by much.

The increased benefits necessarily resulting from "the fruits of expansion" also tend to limit expansion (cf. Annex to Chapter VII). Hence, we are faced with the ticklish problem of the optimum, which logically leads to that "incorporation of social security in an overall forecast of economic and social development" (cf. sections 652 and 653) which found expression notably in certain provisions of the Fifth French Plan and of the recent Italian Programme.

670. 4. There will be all the more chance of solving these difficult problems if they are tackled in the Community context of a gradual harmonization of national social policies and in the light of the steady expansion that should result from a common medium-term economic policy.

671. The experts, in presenting this report, are conscious of the relative modesty of the results of their first efforts. Nevertheless, they are convinced that studies of this kind, both in the field of methodological exploration and in that of processing the statistical data, would be very useful, and would make it possible to obtain sufficient information, in the medium term, to enable social policy to be directed in the right, progressive direction, while, at the same time, an economic development would be promoted which would be strong enough to raise standards of living and prepare the way for solution of the main social problems.

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