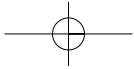
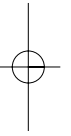
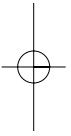


On Worlds of Welfare



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Institutions and their effects
in eleven welfare states

J.M. Wildeboer Schut
J.C. Vrooman
P.T. de Beer



Social and Cultural Planning Office
The Hague, April 2001

The Social and Cultural Planning Office of the Netherlands (SCP) was established by Royal Decree in 1973. It is an interministerial institute which conducts independent research on social and cultural developments and social policies.

The SCP has the following tasks:

- to carry out scientific surveys leading to a coherent description of social and cultural developments in the Netherlands;
- to contribute to a responsible selection of policy objectives, and an assessment of the pros and cons of the various means of achieving those objectives;
- to acquire information on the implementation of policy in the social and cultural field, in order to facilitate evaluation of that implementation.

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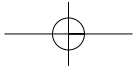
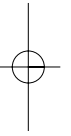
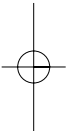
FOREWORD

The economic performance of the Netherlands has been very much in the public eye in recent years. The international acclaim for what is termed the 'polder model' focuses primarily on the high rate of economic growth, the favourable trend in employment and the low formal unemployment rate in the Netherlands. The more traditional objectives of a developed welfare state, such as curbing income inequality and combating poverty, generally receive less attention; many people seem to take it more or less for granted that the Netherlands also scores well on these social indicators. This is not so easy to demonstrate, however, because whereas a large body of internationally comparative data (albeit not always uncontroversial) is available on economic development and labour market participation rates, much less is known about performance in the areas of income distribution and the reduction of poverty. International comparisons of income inequality and poverty are often not very reliable, because data often have to be drawn from national databases and statistics, each of which have their own definitions, measurement methods and other idiosyncrasies.

For some years now, however, the Centre for Population, Poverty and Policy Studies (CEPS) in Luxembourg has administered a data archive, the Luxembourg Income Study (LIS), in which micro-databases containing income data from a large number of countries are brought together and made as comparable as possible. Using data from this archive, this SCP study compares the performance of eleven Western countries in the fields of income (re)distribution, poverty and social welfare. The familiar typology of welfare states devised by the Danish sociologist Esping-Andersen is used as an interpretation framework, and is also empirically substantiated in this study. The basic question is twofold: how much institutional variety can we find in the welfare states under study? And does this variety produce different distributional results? In doing so, the study also seeks to provide clearer insight into the question of whether the Netherlands, in line with its good performance on indicators for economic growth and employment, also compares favourably with other countries on other aspects of the welfare state. The focus of attention in this publication is limited to performance in areas relating to income: income redistribution, income inequality, social welfare and poverty. Other parts of the welfare system, such as education, health care and housing are left out of consideration. The performance of the Netherlands on these aspects has recently been placed in a European perspective in SCP's *The Netherlands in a European Perspective, Social & Cultural Report 2000* (available in both Dutch and English).

This study would not have been possible without the willing cooperation of the staff at the Luxembourg Income Study in Differdange, Luxembourg, to whom we would like to express our sincere thanks. We also wish to thank Statistics Netherlands (CBS) for allowing us to perform calculations on the Income Panel Survey (IPO), which served as a source for the Dutch analyses in this study.

Prof. Paul Schnabel
Director of SCP



1 INTRODUCTION

Empirical research into the operation of the welfare state is one of the core tasks of the Social and Cultural Planning Office (SCP). This study seeks to position the Netherlands in an international comparative perspective. The emphasis in making this comparison lies on the labour market and social security aspects of the welfare state. The analysis focuses in particular on the relationship between different types of welfare state and a number of results of those differences. The question the study seeks to answer is twofold: Are there empirical differences in the way different countries structure their socio-economic institutions, which are of such an order that we can speak of different types of welfare state? And do differing welfare state types function differently, in terms of income and welfare differentials between members of that society? The latter relates to the degree of income redistribution, income inequality, social welfare and poverty.

The first of these questions is the subject of the next chapter. In classifying countries by welfare state type, alignment is sought with the work of Esping-Andersen (1990, 1996, 1999). One objection to typological approaches is that they often have a fairly weak empirical basis. They are also frequently difficult to falsify: with a little imagination, many country characteristics can be fitted into the typology. This study attempts to follow a somewhat more 'stringent' approach, by reinforcing the empirical nature of the typology, by formulating hypotheses on the types found, and by subsequently testing those hypotheses at the level of individual households on the basis of international data.

This involves the following steps. In the first place the differences between three types of welfare state (the *liberal*, *social-democratic* and *corporatist* 'welfare regimes') are not approached exclusively from the basis of history or socio-economic theory, but an attempt is also made to ascertain whether distinctions can be drawn between country clusters on the basis of quantitative data on the labour market and social security institutions. This results in an empirical typology of countries, which is used to chart the actual differences in institutional structure between different countries (the *input* provided by the welfare states).

A number of hypotheses are then formulated concerning the *output* of the types of welfare state identified: the results for households in terms of income and welfare. Among the topics considered are the redistribution from primary to disposable income, inequality between households, and social welfare and poverty in the various countries. The hypotheses relate both to the differences between the different types of welfare state identified, and to the differences between countries placed within one and the same category.

In the following chapters the hypotheses are tested empirically for each of the eleven countries. The countries selected are those which occupy a central position in Esping-Andersen's typology. Belgium, France and Germany represent the *corporatist* type of welfare state; Sweden, Denmark and Norway the *social-democratic* type; and the United States, the United Kingdom, Canada and Australia the *liberal* type. Based on the empirical typology, the Netherlands is a hybrid welfare state and is therefore systematically compared with the three country groups.

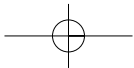
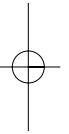
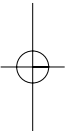
The hypotheses are tested by means of data from the Luxembourg Income Study (LIS). This is a collection of research databases on the socio-economic position of households in a large

number of countries. The coordinating organisation is based in Luxembourg, and has tuned the databases as accurately as possible in terms of content, definitions and treatment of data. For the Netherlands, however, the LIS database was not used; instead, the large-scale Income Panel Survey (IPO) was analysed, which is also used by Statistics Netherlands (CBS) for compiling the official income statistics for the Netherlands.

This report is structured as follows. Chapter 2 describes the welfare states studied and the results of the empirical analysis of country characteristics (the first question under study). Chapter 3 formulates the hypotheses on relationships between institutional structure and socio-economic results, elaborating the second study question. The chapter also looks briefly at the content and limitations of the data used. The hypotheses are then tested, with one potential function of the welfare state being examined in each chapter. Chapter 4 is devoted to the redistribution which is brought about by the welfare state between earned and disposable income. Chapter 5 examines inequality in more detail, especially by looking at standardised income differentials. Chapter 6 focuses on the possible trade-off between income inequality and average income. Is income higher in welfare state types with a higher degree of inequality? Does this reflect a preference by the population for certain income relations, so that the level of social welfare is comparable on balance? Chapter 7 homes in on the lower end of the income distribution, looking at the differences between the country groups in terms of poverty. Three poverty thresholds are used for this: a relative threshold, a threshold based on national policy norms, and the Dutch statutory minimum. This chapter also examines whether the risk groups for poverty vary in the different welfare state types. Chapter 8 summarises the findings of the study.¹

Note

- 1 Primary analyses of the LIS and IPO data were carried out by Wildeboer Schut. The chapters on the welfare state and inequality were written by Vrooman, those on redistribution and social welfare by De Beer. The chapter on poverty was compiled by Vrooman and Wildeboer Schut; the remaining sections were compiled collectively by the authors.



2 THE STRUCTURE OF WELFARE STATE INSTITUTIONS

This study sets out to explain differences between countries in terms of redistribution, income inequality, poverty and social welfare. A methodological problem quickly arises here: which causal factors should be taken into account? One option is to circumvent this problem by simply compiling an inventory of national differences and devising explanations afterwards. This approach is not very satisfactory, however: it treats countries as a sort of 'black box' and leaves it unclear whether the differences found arise from discrepancies in the role of the state, the provisions available, the power relations between the various socio-economic actors such as trade unions and employers, institutions which have developed historically, characteristics of the population and the economic structure, or the preferences which are held by the population and which may be expressed through their voting behaviour.

An alternative is to perform case studies in which the specific historical and institutional configuration of each country is made clear, and then carrying out paired country comparisons. This is quite labour-intensive, however, as illustrated by the five-volume study compiled under the editorship of Flora (1986) on the differences in the social security systems of industrialised nations. An approach such as this goes beyond the scope of this study. Explanations for the differences between countries in terms of income protection and distribution will be sought in chapters 3 to 7 in the divergent institutional structuring, or the character of the *welfare state*, in the different countries.

This chapter is concerned with the first step: mapping out the main institutional differences between the countries studied. Section 2.1 briefly summarises the emergence of the modern welfare state. The first part of the study question is then considered: are the empirical differences between the countries studied sufficiently large to enable us to speak of divergent types of welfare state? In answer to this question, the characteristics regarded as central by Esping-Andersen in his typology are systematically reconstructed (§ 2.2). A suitable indicator for the empirical differences between the countries is then sought for each characteristic. These indicators are subjected to multivariate analysis with a view to determining whether welfare states can be placed in clusters which correspond with the theoretical typology of countries (§ 2.3). As a corollary to this, the next section examines what differences exist between countries falling within one and the same empirical cluster (§ 2.4).

2.1 Development of the modern welfare state

Modern welfare states share one common characteristic, i.e. the fact that more or less extensive welfare provisions are legally provided. This is a difference compared with the way that poverty tended to be tackled until the nineteenth century. Charity at local level has been replaced in modern welfare states by a subsistence minimum which is backed up by government legislation. This enshrining of the social security system in law is connected with the rapid process of industrialisation and urbanisation which took place in the nineteenth century (see, e.g., De Swaan 1989). Workers in the towns were confronted with risks which could totally disrupt their lives and which, unlike in rural areas, were no longer covered by the traditional forms of support through the Church, the guild, or the workers' families – often made up of several generations. Accidents at work could result in permanent invalidity; and

because wages were often too low to enable workers to save any money themselves, unemployment very rapidly led to severe financial problems. Furthermore, increasing life expectancy meant that large groups of older people who could no longer work were confronted with poverty. De Swaan (1989) also points out that these risks were not limited to the working class, but also had consequences for the well-to-do *bourgeoisie* (risk of social unrest, strikes, outbreak of epidemics).

The modern welfare state arose as a response to the economic, political and social circumstances which prevailed in the second half of the nineteenth century (De Swaan 1989; Esping-Andersen 1990). This was the time when the system of social insurance was introduced in most industrialised nations, based on the principle of mutual solidarity between workers. These systems were given a variety of names in the different countries. In Germany and France the government supported these initiatives in the nineteenth century, and made it compulsory for employers and employees to participate (statutory obligations on employees to pay social insurance contributions and on employers to pay benefits). The first risks covered were accidents at work, illness and old age. The oldest social insurance law is the New Zealand Accidents Act from 1882. This was quickly followed by the introduction in Germany of the Bismarck insurance laws on health insurance (1883), accident insurance (1884) and old age pension insurance (1889). Compulsory insurance for unemployment and child benefit was not introduced anywhere in the nineteenth century; these risks were only partially covered through (local) poverty relief, which was tied to strict conditions.

In Germany, political motives were the decisive factor in the introduction of social insurance systems. The process of nation-formation required that the authoritarian political elite assured itself of the loyalty of the working classes. The development of the welfare state in Great Britain and the United States is paradoxical at first sight: both countries were industrialised at an early stage, but were late in introducing collective social insurance schemes. One explanation for this is that these countries already had a long historical tradition, which meant there were no political unification motives as there were in Germany. Moreover, the *laissez-faire* ideology which long dominated political circles allowed scope only for a combination of individual social insurance and a minimal form of care for the poor. In Great Britain the sea change came with the Pensions Act which was introduced by David Lloyd George in 1908, a law made possible by a coalition of the working class and reformist liberals, for whom a social insurance system based on actuarial principles was acceptable. The United States embarked on a catching-up exercise following the financial crash of 1929. In 1932 Roosevelt and the Democratic Party came to power, and in coalition with the by now powerful trade unions the government achieved a national and compulsory system of old age pensions and unemployment insurance within three years (the Social Security Act of 1935).

The Netherlands also lagged behind in the development of a social security system. The main reasons for the creation of social insurance schemes in the Netherlands were less pressing than elsewhere; the Netherlands was a 'late industrialiser', and the size and power of the trade unions and socialist parties became a significant factor only later. On the other hand, the country was an old nation; in contrast to Germany, there was no need to promote national unification through the introduction of social insurance. The development of the Dutch social security system was however also connected with the political configuration. From the final quarter of the nineteenth century onwards, very intensive discussions on social security prevailed. Dutch industry was beginning to get off the ground in this period, precisely at a time when a long-lasting economic recession dominated the scene (1875-1895). This led to a debate on the 'social question': how must protection be offered against the risks associated

with industrial labour? The legislative process was laborious, however, because in political circles this theme had to compete with two other areas of conflict: the schools funding issue and the introduction of universal suffrage. The discussion was complicated even further by a shift in the political balance of power, caused by the rise of socialist and confessional parties. The Accidents Act (*Ongevallenwet*) (1901) was the first Dutch law to regulate loss of income. It applied to workers in a number of specifically named hazardous companies, who could claim compensation if they had an accident at work. It was not until 1921 that the scope of the Act was extended to include almost all sectors, and was no longer limited to hazardous industries. The risks of incapacity for work and old age among the workers were covered in 1919 in a fairly broad Act; non-workers could affiliate to the collective insurance of the Old Age Act (*Ouderdomswet*) (1919) on a voluntary basis. Following a lengthy parliamentary debate, the first Sickness Benefits Act (*Ziektewet*) came into force in 1930. The coverage of unemployment remained rudimentary; the Unemployment Decree (*Werkloosheidsbesluit*) of 1917 was merely a subsidy scheme: where necessary, the government provided a contribution to the voluntary unemployment funds operated by the trade unions. During the German Occupation in the Second World War, a child benefit scheme for wage-earners was introduced, as was the Compulsory Health Insurance Decree (*Ziekenfondsbesluit*).

After the Second World War, some countries added a 'new layer' to the system. Universalism was regarded as a worthwhile goal: the system, it was felt, should no longer focus exclusively on protecting employees against the adverse effects of industrial labour, but should instead offer protection for the entire population. Many felt that the social security system had to be developed in order to prevent a crisis such as that seen in the 1930s as a result of the inadequate provisions, affecting large sections of the population deeply. Giving social security rights to all citizens became an important part of the post-war reconstruction process in European countries. A political factor also promoted the creation of the welfare state: just as after the First World War, there were fears of destabilisation, particularly due to growth in the support for the successful Communist parties. The Beveridge report served as an example for many countries. This report offered a blueprint for the future of post-war social security in Great Britain, with an explicit objective: '(...) The aim of the Plan for Social Security is to make want under any circumstances unnecessary (...)' (Beveridge 1942: 9). To this end, in addition to national assistance and voluntary insurance, a system was envisaged which was based on compulsory insurance of all citizens against the risks of old age, unemployment, illness and incapacity for work, as well as the costs of childbirth and child-raising. The level of benefits would not be linked to earnings ('flat rate') – unless disability had been caused by the work itself. Benefits would in principle not be limited in terms of duration, and would not depend on means testing.

Such a universalist system was not implemented fully anywhere. As part of the large-scale development of welfare states after the Second World War, however, universalist elements were incorporated in many systems, often in order to cover medical risks which were difficult for individuals to meet themselves (National Health) and collective old age pensions.

2.2 Esping-Andersen's typology of welfare states: an overview

Increasing prosperity, the emancipation of the working class and the emergence of a new middle class have led to a strong growth in the system of social protection in the post-war period. While these trends have been fairly general in the West, however, there is still

considerable variation in the way different countries structure their welfare arrangements. There is no one single cause for these differences (cf. Esping-Andersen 1990: 105-138); rather, the cause lies in an interplay of several factors:

- economic and demographic developments (growth, wealth distribution, unemployment, number of older people);
- the power of certain political classes (labour movement, employers, farmers, religious groups, the new middle classes, older people);
- political alliances which have been possible or impossible at certain crucial moments, for example the Catholic-Socialist coalitions which created the national insurance system in the Netherlands in the 1950s;
- institutional traditions: the development of welfare arrangements built on the existing institutional structure.

Several authors have tried to summarise the main differences between countries in the form of a typology of welfare states. The scheme employed by Titmuss (1974) has become a classic. He distinguishes three 'ideal types': the *residual welfare* model, the *industrial achievement-performance* model and the *institutional-redistributive* model.

In the *residual welfare* model, the individual or the social network to which he belongs (household, family, community) bears primary responsibility for the financial consequences of social risks. Only when this private cover proves inadequate does the government step in. Benefits function as a social safety net, and are therefore minimal, temporary and accompanied by a means test to ascertain the adequacy of the individual's own income and assets.

The *industrial achievement-performance* model accords greater weight to the task of the government in protecting citizens' income. Risks are covered in proportion to the individual's contribution to the collective labour productivity. Social policy ensues from economic policy, but the operation of the free market dominates. Social security entitlements are supplementary to the social protection offered by the market (employers, trade unions), and are often built around labour performance, employment history and occupational status.

In the *institutional redistributive* model, social security is a means of expressing the collective responsibility for individual welfare. In a modern society traditional institutions (family, market) are no longer able to provide adequate and fair coverage of social risks. The government therefore has to adopt a redistributive approach, providing benefits and provisions over and above what the market provides in an attempt to meet the needs of households.

Esping-Andersen (1990, 1996, 1999) adopts a similar threefold division. His central tenet is that three divergent *welfare regimes* can be identified, which have differing social impact in terms of:

- a) de-commodification; i.e. the degree to which individuals or families are able to achieve a socially acceptable living standard, independently of their participation in the market. The level, duration and accessibility of social provisions are important variables here.
- b) stratification; this is concerned not so much with the effects on income distribution, but refers to the way countries shape citizenship through the structuring of rights. Welfare states of the same size can have very different stratification effects: one country may sustain the existing hierarchy and status division; another country may promote a two-tier system; while a third may aim at universalism.
- c) post-industrial employment; the different types of welfare state show divergent developments in employment in the 'post-industrial' sector, i.e. work concerned with

advanced methods of industrial production (e.g. professionals, information technologists) and with social and personal services (government sector, the 'fun industry' in hospitality, catering and tourism, cleaning work, etc.). Both the extent and nature of post-industrial employment varies with the type of welfare state.

Table 2.1 provides a summary of specific features of the three types identified by Esping-Andersen: the *liberal*, the *corporatist* and the *social-democratic* welfare regime. The concept *welfare regime* is wider than 'welfare state'. The basis for typology construction are welfare *regimes*, not welfare *states* nor individual social policies. 'Regimes' refers to the ways in which welfare production is allocated between state, market, and households.' (Esping-Andersen 1999: 73). However, since the emphasis in this study lies on semi-collective schemes, the term 'welfare states' will generally be used.

According to Esping-Andersen, the main representatives of the *liberal welfare states* are the Anglo-Saxon countries. This type is characterised by limited collective provisions, comparable with Titmuss' residual model. The target group is limited to those in need, who are unable to meet their basic requirements in any other way. In order to keep this group small, strict access conditions are applied: benefit recipients must not be capable of work, and stringent means-testing is used to determine the level of need. The duration of benefits is limited to the period that the recipient is unable to work. The level of the benefit is meagre, tending to be more of a 'survival benefit' than an amount which would enable the recipient to play a full part in society. Apart from civil servant schemes, there are no separate collective provisions for specific occupational groups. Levies are low and the collective provision is funded from general resources (taxation). In contrast with this system, private provisions in the liberal welfare state are relatively extensive – at least for those who have access to them. The middle and higher social classes have taken out separate insurance or enjoy employee benefits from their companies. The tax system generally encourages people to make private provision, through tax exemptions and tax allowances. Where a minimum wage exists at all it is low: so as not to interfere with the presumed operation of the pricing mechanism on the labour market, there is no interference in wage formation at minimum level. The labour market participation rate of women, older people and disabled people is fairly high, because the low level of benefits and the absence of collective retirement schemes do not create a disincentive – if anything, the reverse. There is little collectively guaranteed employment, even for groups with poor labour market prospects. Post-industrial employment is extensive and lies largely outside the government sphere. There is a dual structure: good post-industrial jobs for a large group of 'business professionals' (lawyers, consultants, personnel managers) and poor-quality 'junk jobs' which fall to the low-skilled (poorly paid jobs in the catering industry and entertainment sectors).

In terms of stratification, the liberal welfare regime leads, according to Esping-Andersen (1990: 65) to 'a curious mix of individual self-responsibility and dualism': a group at the bottom which is primarily dependent on stigmatising, means-tested public assistance; a middle class which is dependent primarily on social insurance; and a privileged group which succeeds in obtaining the main provisions via the market. There is the prospect of a proletarianisation effect in the future if the number of 'junk jobs' leads to a substantial group of working poor: 'At the low end of the American service economy, wages are close to poverty level, and fringe benefits almost non-existent' (Esping-Andersen 1990: 228). This proletarianisation could be concentrated in certain groups (ethnic minorities, single-parent families), but could also cross

traditional dividing lines, making the oppositions within these groups even more starkly apparent. In the American case: 'As some women become yuppies and some Blacks become bourgeois, the women and Blacks left behind will experience more keenly the phenomenon of relative deprivation' (Esping-Andersen 1990: 229). But it is also possible that proletarianisation will not occur at all, because the poorly paid jobs at the lower end of the labour market are filled only temporarily, and for most people serve as a springboard to a better position.

The level of 'de-commodification' is low in the liberal welfare state: it is difficult for people to achieve an acceptable standard of living if they do not have qualities with sufficient value for the market (or – in the case of pensioners – have not utilised those qualities in the past). The precise degree of de-commodification varies with the stringency of the means-testing and the level of benefits, however.

Table 2.1 Typology of welfare states

characteristics	welfare state		
	liberal	corporatist	social democratic
<i>collective provisions</i> coverage (target group)	very limited: the poor	selective and hierarchical: professional groups	universal: all residents
entry conditions	very strict: - incapable of work - means-testing	fairly strict (actuarial): - employment history - premiums paid	generous: - residency for a given number of years
limitation of duration	strict: benefit paid only as long as recipient cannot work	actuarial: long benefit duration is possible	not strict
level of benefit	meagre (subsistence minimum)	high (wage related)	high guaranteed minimum (income related to wages or adequate for participation)
separate collective provisions for specific occupational groups	few (civil servants)	many (status groups; high level for civil servants)	none
level of levies	low	fairly high	high
method of funding	general taxation	mainly funding through contributions	general taxation
<i>private provisions</i> coverage	high (from middle class upwards); incentive through tax benefits	low	low

Table 2.1 (continued) Typology of welfare states

characteristics	welfare state		
	liberal	corporatist	social democratic
<i>employment</i> minimum wage	absent or very low	high	high
(dis)incentives to employment: women	no disincentives: low level of benefits → reasonably high participation	many disincentives: breadwinner benefits, generous provisions for motherhood and child allowance, few childcare facilities → low participation	many incentives: individual benefit entitlement, general leave arrangements for care tasks, extensive childcare facilities, high levies force both partners to work → high participation
(dis)incentives to employment: older people and disabled	no disincentives: no collective retirement schemes → reasonably high participation	many disincentives: collective funding for early retirement, incapacity for work or unemployment → low participation	few disincentives: leaving work through collective schemes is discouraged; reintegration of disabled is actively promoted → high participation
collectively guaranteed employment (e.g. 'additional' employment)	Virtually absent	limited (sheltered employment for low-opportunity groups)	extensive
post-industrial employment	extensive, but dual structure: - good jobs: professionals in business services - poor jobs: low-skilled in 'junk jobs'	few: accent remains on industrial employment	extensive, but mainly in government sector (welfare, care, social security). Largely middle-ranking posts occupied by women.
<i>stratification</i> differences between groups of citizens which are promoted by regime	clear distinction between welfare clients/'working poor', middle class and privileged classes	reproduction of existing relationships (occupational groups and traditional lifestyle/gender)	universalism
possible future	'proletarianisation'	opposition between working/non-working (insider-outsider problem)	opposition between those working in the collective and private sectors
<i>de-commodification</i> extent to which an acceptable living standard is possible independently of participation in the market	low (depends on stringency of means-testing and level of minimum)	medium (esp. status groups with adequate employment history; depends on replacement rate and stringency of actuarial principles)	high (depends on level of benefits)
Source: Esping-Andersen (1990)			

The countries of continental Europe and Japan are characterised by Esping-Andersen as *corporatist* welfare states, though to differing degrees¹. They often have an autocratic tradition: social insurance schemes were funded in the past in order to generate direct loyalty on the part of the individual to the central state or monarchy. Under this system the existing caste and class differences were accurately replicated under the auspices of the state, through the setting up of separate collective insurances carrying rights and obligations in accordance with the individual's social position. Civil servants occupied an elevated position in these programmes because of their links with the state. Since the Catholic church was often jointly responsible for the development of the system, this type of welfare state is often slanted in favour of the traditional family structure: non-working women are generally excluded from social insurance schemes; family provisions encourage full-time motherhood, while childcare and similar facilities are under-developed.

The coverage provided by collective provisions in these welfare states is selective and hierarchical: different programmes for different occupational groups, with provisions corresponding to their social position. The access conditions are fairly strict and are based on actuarial principles: an actuarial relationship is established between the premiums paid (or the employment history) and the provisions to which the individual is entitled. Benefits may be paid for a long period, provided sufficient entitlement has been built up. The level of benefits is high and is generally a percentage of the previously earned income. The number of collective schemes is large, with civil servants enjoying a privileged position. The levies are fairly high, and schemes are usually funded through the payment of contributions.

The predominance of collective social insurance schemes means the coverage offered by private provisions is limited. A high minimum wage operates on the labour market, which is fixed by law or laid down in government-sanctioned collective labour agreements. The labour market participation rate of women is low due to the many disincentives (breadwinner benefits, generous provisions for motherhood and child allowance, limited childcare facilities). The participation rate of older and disabled people is also low: because exit from the labour market through early retirement and unemployment/incapacity for work schemes is regulated collectively, less productive workers can leave the labour process relatively painlessly during times of economic recession. There is little collectively guaranteed employment, with just a limited number of sheltered employment schemes. The amount of post-industrial employment is relatively low for several reasons. The system is geared to reducing the labour supply (keeping women and less productive workers out of the labour market); the government sector – which potentially offers much work of this type – remains relatively small; and the high levies make the creation of low-paid work in the areas of social and personal services difficult.

In terms of stratification, corporatist welfare states often tend to reinforce traditional differences based on occupational status, lifestyle and gender. As a possible future scenario, Esping-Andersen presents a division between insiders and outsiders, with working people on the one hand and non-working women, young people, the elderly and disabled on the other. The collective negotiations between employees and employers are focused in this scenario entirely on the interests of those in work; pay demands are set high at the expense of job opportunities for less productive workers and non-workers. Combined with the lack of employment incentives for women, this results in 'a diminishing yet highly productive workforce supporting a growing but unproductive outsider population' (Esping-Andersen 1990: 227).

The degree of de-commodification is generally higher than in liberal welfare states, but is largely concentrated among professionals with an adequate employment history. The precise

extent of 'market-independence' depends on the replacement rate (the relative level of the replacement income) and the flexibility with which the actuarial principles – proportionality between contributions paid/employment history and level of benefits – are applied.

According to Esping-Andersen, the Scandinavian countries represent variants of the *social-democratic welfare state*. The aim here is a high level of social protection for all residents of the country. Provisions are provided at a level which corresponds to the wishes of the most critical among the new middle classes, and no distinction is drawn between the rights of the working class and those of the better-off. This is achieved through a compulsory collective insurance scheme with earnings-related benefits. The most characteristic feature is the combination of welfare and work. Employment plays a crucial role in this system. It is an expensive system, which can only be sustained if there is a consistent commitment to full employment for both men and women. In order to be able to pay for the generous provisions, the number of benefit claimants must be limited and the number of taxpayers maximised. In the two other systems, economic inactivity by certain groups is accepted (housewives and early retirees in the corporatist welfare state; people who are unable to find a place in the market in the liberal variant).

The social-democratic variant is largely universalist: all inhabitants have access to collective provisions for a large number of social risks. The access conditions are generous: people simply have to have lived in the country for a set number of years. There are no strict limitations on the duration of benefits and provisions – if necessary, they can be paid over a long period. The level of collective benefits is high. Where possible they are linked to the most recently earned wage, and the statutory minimum income is adequate to permit full participation in society. The universalist nature of this system is also reflected in the absence of separate collective provisions for specific occupational groups: everyone falls within the same scheme. The levies needed to pay for this comprehensive welfare state are high, and are collected through general taxation.

In the social-democratic type, too, the coverage offered by private provisions is low; the extensive collective arrangements make these unnecessary.

In line with the good social provisions, the minimum wage is also high. There is however a commitment to wage moderation in the higher wage levels, because otherwise there is a danger that collective employment will become too expensive. The labour market participation rate of women is promoted through targeted provisions (individual benefit entitlements, leave arrangements in connection with care tasks, extensive childcare facilities) and by the fact that high levies encourage women to go out to work: only when both partners are working can a high family income be generated. Older people and disabled workers are discouraged from leaving the labour market by the combination of a lack of specific provisions for early retirement and an active reintegration policy. As a result, the participation rate of these groups is relatively high.

There is a large amount of collectively guaranteed employment, not just in the form of 'additional' employment, but also in the form of an extensive government sector. The lion's share of the post-industrial jobs are to be found in the (semi-)government sector: welfare, social security, care and childcare organisations. Esping-Andersen (1990: 222) refers to this as 'a social-welfare led post-industrial employment structure'. The majority of the large number of women in the labour market are absorbed by this extensive collective sector, where they occupy mainly middle-ranking positions. There are few post-industrial jobs outside the government sector: the high wages rule out the creation of large amounts of employment in the form of 'junk jobs' (with the exception of the informal circuit).

Given its universalist approach, the social-democratic welfare state is designed in principle to eliminate differences between groups of citizens. In practice, however, stratification effects can undoubtedly arise, since the level of benefits and provisions often has to be limited even in this system because of cost considerations. New forms of stratification are also possible: if wage moderation cannot be sustained, collective employment will be in danger, and conflicts of interest could arise between the – mainly female – employees in the collective sector and the – mainly male – employees in the private sector. In such a case 'social democracy can only hope that the bonds of marriage are strong enough to weather the storm of economic warfare' (Esping-Andersen 1990: 227).

In theory, their universalist and generous structure means that de-commodification is highest in the social-democratic welfare states. In practice, however, it may be lower than anticipated because of the limits to the level of collective provisions referred to earlier.

Although his division into three types of welfare states is in principle hypothetical, Esping-Andersen does provide some empirical support for his typology. In practice none of the three types occurs in 'pure' form. For example, even very corporatist states have a safety net in the form of means-tested public assistance aimed at those who are not or no longer able to benefit from the provisions for occupational groups; some universalist systems have visible insurance elements, for example in the form of employment history requirements; and liberal welfare states may sometimes have relatively good provisions for old age, which exceed the subsistence level by a wide margin. As a theoretical benchmark, however, Esping-Andersen's typology is useful, and, after empirical testing, it will therefore be used in the rest of this study to interpret the differences between countries.

It is however wise to comment on the typology in several ways before beginning.² Arts and Gelissen (1999), for example, point out that a number of authors believe there is also a fourth type of welfare state, which could be described as the 'Mediterranean' group or the 'Latin periphery'. Characteristic of this type is the rudimentary nature of many social provisions (partly through the absence of an official safety net in the form of a guaranteed minimum income), while some benefits and provisions may be generous (e.g. old age pensions). The implementation of the various schemes is also highly fragmented and divided among private organisations, encouraging patronage and clientalism. As this study does not include any countries from this group, however, this issue is of no further importance here. The same applies for the possible existence of an 'Eastern Asiatic' variant, with Japan as the textbook example. In this type, social protection is provided primarily through family and company-based care arrangements, with the public social insurance schemes acquiring a supplementary and fairly residual character.

Another criticism levelled against Esping-Andersen's classification is that the distinction between the labour market and social security positions of men and women does not weigh heavily enough in the typology, with the result that differences in the 'gender inequality' in different countries are neglected. Siaroff (1994), for example, distinguishes four types of welfare state: the 'Protestant social-democratic' countries in Scandinavia, the 'Protestant-liberal' countries in the Anglo-Saxon tradition, the 'developed Christian-democratic' countries of continental Europe, and countries with a 'late mobilisation of women' – a residual group comprising the Mediterranean countries of Europe, Japan, Ireland and Switzerland. Esping-Andersen (1999: 88), however, notes that he has in no way neglected this dimension, because this is a key point in the distinction between social-democratic and corporatist states. Arts and

Gelissen (1999) moreover observed that Siaroff's classification, despite the differences in nomenclature, displays large correspondences with that of Esping-Andersen. Only the model of the 'late mobilisation of women' is new, but this relates to countries which were not the central focus of the Esping-Andersen typology (a mix of the Mediterranean and Eastern Asiatic types). To this can be added that Siaroff based his empirical classification on a fairly limited set of indicators. His typology may well be suitable for studies focusing specifically on the 'gender-sensitive' aspects of the welfare state, but is less useful for comparing welfare states as a whole, since it is not evident that gender-related aspects of the welfare state should weigh more heavily than other factors.

Finally, it is sometimes claimed that the Antipodes – Australia and New Zealand – deviate from the liberal category in which they are placed by Esping-Andersen. These countries operate a minimum income guarantee for all households, including those which could generate an income in the market, and this, it is claimed, distinguishes them from the other liberal countries, where social protection is highly residual (i.e. focuses on people who are unable to generate market income). Esping-Andersen (1999: 74-77) is not convinced by this argument: he regards Australia and New Zealand as variants of the liberal type, with which they share much in common, for example because of the strong emphasis on means-testing, the limited number of collectively covered risks and the promotion of market arrangements ('welfare capitalism'). Since Australia is included in this analysis, it is interesting to consider the extent to which this country deviates from the liberal group if the countries are ranked in terms of empirical characteristics.

2.3 Eleven welfare states: an empirical typology

This study examines eleven welfare states. They have been selected because they occupy a central role in Esping-Andersen's original typology, rather than, say, the Mediterranean countries or Japan. Four countries are placed in the corporatist group by Esping-Andersen (the Netherlands, Belgium, France and Germany), four in the liberal cluster (Australia, Canada, the United States and the United Kingdom), and three in the social-democratic group (Sweden, Norway and Denmark).

In order to map out the actual correspondences and differences in the welfare states of these countries, a non-linear principal component analysis (Princals)³ was performed on 58 characteristics of the labour market, tax system and social security system in each country. The main indicators for the differences between welfare state types in accordance with Esping-Andersen's typology are represented in the analysis. Together, the variables – largely based on quantitative country comparisons – present a fairly complete picture of each welfare state type. Naturally, the findings are dependent on the variables used, and on the initial groupings of characteristics. As regards this latter aspect, the most neutral approach possible was attempted: the coding of the variables was based on obvious theoretical or empirical distinctions (see appendix to this chapter). The large number of variables means that the scaling results are reasonably stable.

The only way the picture could be made fundamentally different would be if many different types of indicators were input, but the broad selection of characteristics means that this is not plausible. It is, however, not completely impossible: substantial parts of the welfare state – such as the education system, justice system and health care system – have been left out of consideration in this study, because they do not play a central role in Esping-Andersen's typology.

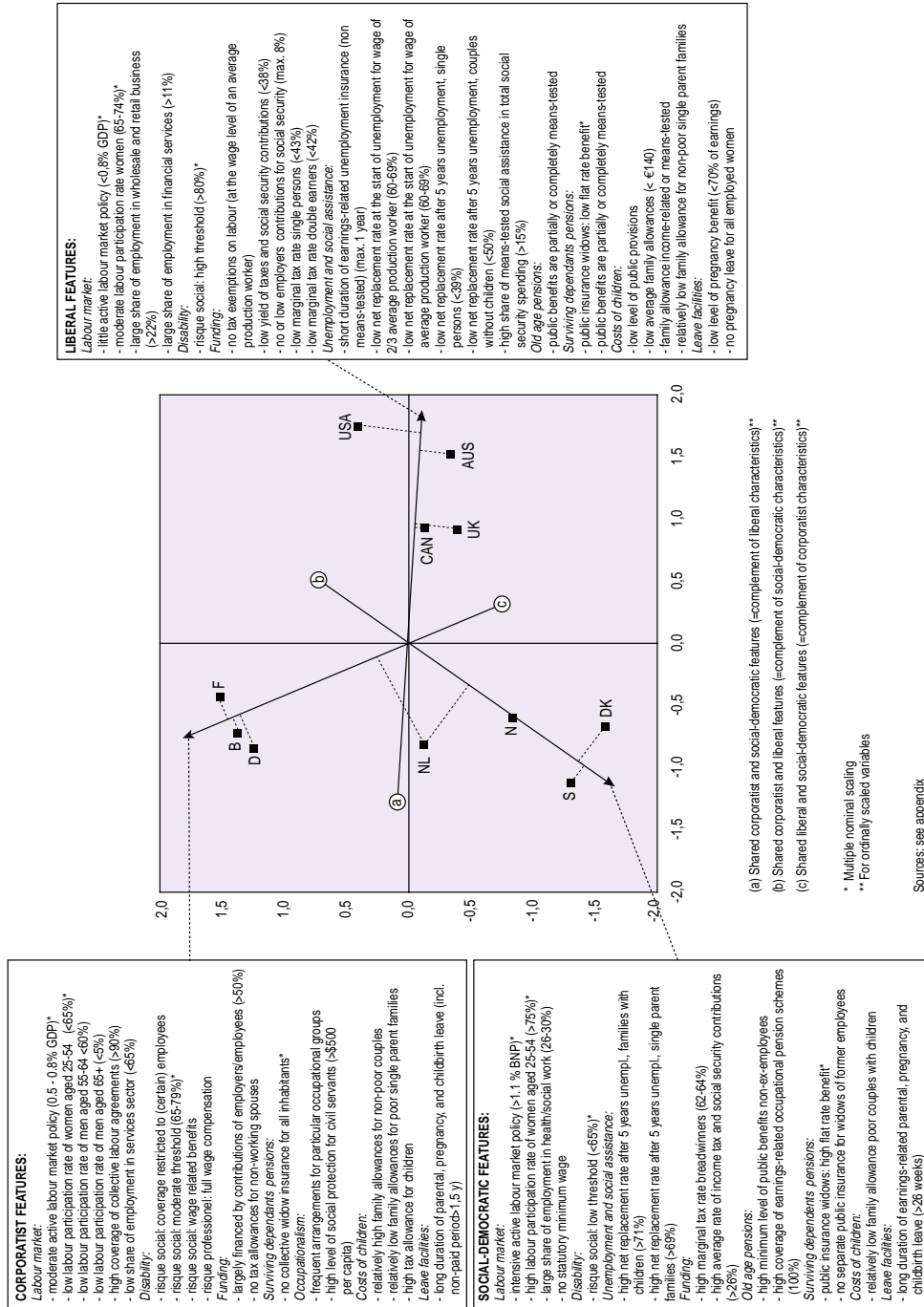
One limitation in the system characteristics studied is that they are based on the situation at the start of the 1990s, since this fits in best with the data analysed elsewhere in this study. However, this does mean that the data are more up to date than those used in the original analysis by Esping-Andersen (1990), which related to the situation in the early 1980s. Notwithstanding, the analysis takes no account of system changes later in the nineties. For the Netherlands, for example, this means that the consequences of the changes to the sickness benefits and disability schemes which took place in the 1990s are ignored, as are the consequences of the introduction of the new Surviving Dependents' Act, and of the changes to child benefit, the unemployment benefits system and the National Assistance Act (for a summary see SCP 1998: 434-462). The steady increase in the labour market participation of women is also not reflected. In the other countries, no account is taken of things such as the changes relating to German unification, Swedish accession to the European Union (EU), and the possible rationalisation of social security in order to meet the criteria for the Economic and Monetary Union (EMU). Although incorporation of these measures might have produced a somewhat different picture, it is plausible to believe that the chief differences between the country clusters would have remained visible even if more up-to-date system characteristics had been used. The decisive factor is that, for an interpretation of the findings in the remainder of this study, the country characteristics at the beginning of the 1990s are the most important, because the data mostly relate to that period.

The technique used produces optimal scaling of both the countries and the system characteristics. Countries and characteristics which have a lot in common obtain the same scores on the various dimensions, whereas states and categories with little in common are positioned a long way apart. The 58 characteristics are generally scaled at an ordinal level, with the exception of four variables for which a multiple nominal quantification was most appropriate.⁴

Figure 2.1 gives the scores for countries and country characteristics.⁵ The first dimension shows an opposition between the liberal group on the one hand and the social-democratic/corporatist group on the other. In terms of the categories of variables, we are dealing here primarily with either residual or non-residual system characteristics. The liberal countries are scaled in the direction of the residual characteristics on the first dimension, the other countries in the direction of more inclusive categories. On the second dimension, the distinction between the corporatist and social-democratic country clusters becomes visible. This corresponds with the expected opposition between selective 'Bismarckian' system characteristics – strongly focused on employment history and family protection, low participation figures for older people and a relatively weakly developed post-industrial employment structure; and on the other hand a universalist structure of social security, high employment participation for women and high levels of employment in the social services sector.

The analysis also makes the nuances visible. The arrows in the figure show the general direction of liberal, corporatist and social-democratic characteristics.⁶ As expected, the liberal cluster comprises the United States, Canada, Australia and the United Kingdom. The projections of the country scores in the liberal direction show that the United States, based on the characteristics studied here, is far and away the most 'residual' country. It is closely followed by Australia, which is therefore also fairly residual. Australia in no way falls outside

Figure 2.1 Scaling of 11 countries and 58 characteristics of welfare (Princals object and category quantifications)



the liberal group, as was argued by Castles (1996). In Canada and the United Kingdom, however, the liberal system characteristics are less pure: their position closer to the origin shows that the welfare state in these countries is significantly less residual.

The corporatist group consists of France, Germany and Belgium, and the mutual differences in scale values are small. The Netherlands also has corporatist features, but these are much less pronounced. The Netherlands also shares a number of characteristics with the social-democratic group, and the Dutch score accordingly lies between the corporatist and social-democratic clusters, with a slight bias towards the social-democratic side. The projections on the arrows of the corporatist and social-democratic category quantifications clearly show that within the individual clusters, the Netherlands is the least corporatist and least social-democratic, respectively.

Sweden and Denmark are the purest exponents of the Nordic model: although their scores are not equal, when projected on the social-democratic direction they achieve the same degree of 'Nordicness'. Norway is positioned closer to the source and has a less uniform social-democratic welfare state – although the characteristics of this system are more clearly visible in Norway than the Netherlands.

What precisely are the characteristics with which the country clusters are empirically associated? The chief feature of the liberal group is the relatively low level of provisions and the high thresholds for take-up of provisions. The low 'performance' of the liberal system is apparent from:

- a low net replacement rate at the onset of unemployment, both for the 'average production worker' (APW) and for the low income levels (2/3 APW). People who become unemployed in the liberal countries generally receive no more than 60-69% of previous earnings if they become unemployed; in the other country clusters this percentage can rise to 78-83%;
- low net replacement rates of social assistance after five years' unemployment for people living alone and couples without children. People living alone receive an income after five years which varies from less than 10% to 39% of previous earnings; for couples without children the figures vary from under 15% to approximately 50%. For parents with children and single-parent families, although the replacement rates in the liberal countries are higher in absolute terms, in terms of the overall country ranking they are low. The relatively low replacement rates for lone-parent families in the liberal and corporatist countries contrast with the high replacement rates guaranteed in social-democratic countries (and the Netherlands) after five years of unemployment;
- the relatively large share taken by the meagre, means-tested social assistance in total spending on social security (more than 15%);
- low average child benefits, viewed across 18 family types;
- low child benefits for lone-parent families who are not poor;
- although there is a collectively organised pension for surviving dependants of non-workers, the 'flat rate' benefit is relatively low;
- meagre provisions for care tasks: not all working women are eligible for maternity leave, and in some countries there are no earnings-related maternity and parental benefits.

The high thresholds to take-up of provisions which are erected in the liberal system often take the form of a means test. This is used to determine whether a household has sufficient income or assets to cover the cost of the provision itself. In most countries social assistance benefits

are subject to such a means test. The liberal countries set themselves apart from the other clusters in the analysis, however, because they also apply means testing to the collective old age and surviving dependants' pensions, and because child benefit is often dependent on family income.

Another take-up threshold which appears to be characteristic of the liberal system according to the analysis concerns the relatively strict limitations on duration. For example, non-means-tested earnings-related unemployment benefit is paid for a maximum of one year.

The liberal group of countries often operate a specific threshold for invalidity benefit. In order to be eligible for benefit due to incapacity for work which is not related to an earlier occupation (the 'risque social'), the claimant must be almost completely (80-100%) incapacitated for work.

The residual character of the liberal welfare states is also reflected in a number of characteristics related to funding. The proportion of Gross National Product accounted for by total revenues from social security contributions, direct and indirect taxation is relatively low (less than 38% compared with 49-53% in some non-liberal countries); less money is needed than in the other countries to fund the relatively meagre provisions.⁷ Marginal tax rates for single people and double earners – with an income of 1.33 times the level of the average production worker – are also on the low side in the liberal countries (generally less than 43%, whereas in other countries the rate can be as high as 62-69%). A further characteristic is the low level of employers' contributions; in the liberal countries, the employers' contribution surcharge for a single earner with children at APW-level is 8-11%; in Sweden and Belgium it can be as high as 33-34%.

Finally, a number of characteristics of the labour market and labour market policy are also typical of the liberal states. There is little in the way of an 'activating' labour market policy: less than 0.8% of Gross National Product is spent on measures aimed at labour-market training, promoting entry of young people to the jobs market, subsidised employment, retraining of disabled workers and public employment placement services. In the corporatist and social-democratic states, the budgets for this kind of active integration are higher. Also striking is the fact that the liberal states offered few tax incentives to employees with an average income at the start of the 1990s. In the corporatist and social-democratic groups, these provisions can rise to a tax-free allowance equivalent to 8-9% of the income of a single earner with children at APW-level, for example in the form of an occupational expenses allowance. Post-industrial employment in the services sector is high, a characteristic which the liberal states share with the social-democratic group. As expected, the emphasis in the liberal cluster lies on employment in the wholesale and retail sectors (over 22%) and in financial and business services (more than 11% of total employment).

The *corporatist* countries generally offer a wide range of provisions. This distinguishes them from the liberal cluster, a fact reflected in their opposing scores on the first dimension in figure 2.1. Within the non-residual corporatist group there are a number of typical emphases which are visualised particularly in the second dimension. A typical feature of the corporatist countries is the relationship between earlier occupation and entitlement to provisions; the emphasis on protection of families with children without a commitment to economic independence of both partners; and the special role of labour market organisations. The tying of social security to occupation is reflected first and foremost in the large number of provisions made for specific occupational groups, particularly in Germany and France. The system is thus directed towards maintaining the required standard of living, and to the extent that rights and entitlements differ in practice between the various groups, this is selective, focusing on reproduction of the existing differences.

The special place traditionally occupied by civil servants in the corporatist countries is reflected in the high level of provisions for this occupational group. Per head of the population aged 15-64 years, more than 500 dollars per annum is spent in all corporatist countries on specific civil servant schemes; in Sweden, Canada and Australia, the figure is less than 150 dollars.

The greater part of the social security system (generally more than 70%) is funded from contributions, compared with less than 30% in countries such as Canada, Australia and Denmark. This reflects the strong emphasis placed in the corporate system on compulsory solidarity between workers, under the responsibility of the state.

On a number of points the analysis reveals a direct correlation between occupation and entitlement to provisions. For example, incapacity for work which is not related to the work itself (the *risque social*) is generally covered, but entitlement to benefits is limited to (specific) former workers; categories such as early disabled, the self-employed and housewives have no entitlement to this benefit. Moreover, a threshold operates, which although not as high as in the liberal countries, is higher than in the social-democratic group: an incapacity for work of 65-79% is usually the minimum requirement. In the case of employment-related incapacity for work (the '*risque professionnel*'), it is striking that the level of protection in Belgium and France is extremely good: employees who become incapacitated for work due to their employment continue to receive their full salary. It is also striking that the corporatist countries have no collective provision for their residents in terms of surviving dependents' pension: Widows, widows and orphans of non-workers therefore have to rely on their own resources or on social assistance. Finally, collective old age pension provisions in the corporatist countries often link the length of insurance (or the contributions paid) to the level of benefit.

The focus on families with children is in the corporatist cluster reflected in the special provisions for these households. Child benefit for families with many children is relatively high; this is most pronounced in Belgium and the Netherlands, where the amounts increase with the number of children.⁸ In other countries, particularly within the liberal group, the amounts for large families are also high, but only if these households have a low income. In the corporatist countries child benefit is not related to income at all, with the exception of Germany, where a limited means test is applied from the second child onwards.

Child benefit for single-parent families is stressed to a much lesser extent in the corporatist countries than in the liberal group, where substantial amounts are often paid out in benefit in the context of 'targeted' measures for poor families. This provision is also less generous than in the social-democratic cluster, where the amounts for single-parent families who are not poor are relatively high.

The corporatist countries also usually have fairly generous child allowance arrangements, and set themselves apart from the other countries with an independent, non-means-tested pension entitlement for orphans (in other countries the benefit of the surviving parent is increased, sometimes on a means-tested basis). Strikingly enough, there are usually no tax advantages in corporatist countries for having a non-working partner. The Netherlands is the only exception to this, having a tax allowance which can be transferred to the working partner. These tax advantages occur primarily in the liberal group, and compensate for the higher cost of living in those countries for a couple compared with a single person; the allowances amount to between 9% and 19% of income. This does not mean there are no tax advantages for families whatsoever in the corporatist countries, but those advantages are almost always linked to the presence of children. This may indicate that fiscal incentives for non-working partners only fit in with the corporatist tradition where children are being cared for.

Another characteristic of the corporatist countries is the length of the maternity and parental leave. In Belgium, Germany and France, this leave lasts for more than 18 months; in most other countries (with the exception of Sweden) it lasts for between six and 18 months. Much of this leave is however unpaid: the earnings-related benefit lasts for less than six months, which is shorter than is usual in the social-democratic countries.

With regard to the labour market, the high coverage of collective labour agreements is the most striking feature of the corporatist countries. In Belgium, France and Germany, more than 90% of employment contracts are covered by collective labour agreements, slightly more than in the Netherlands. The number of employment contracts covered by collective labour agreements in the liberal countries is less than 50%. The central employers' and employees' organisations therefore occupying a crucial position in the corporatist countries in negotiations on earnings, terms of employment and social security provisions.

The 'active integration' labour market policy has a wider scope in the corporatist countries than in the liberal group, but comes nowhere near the level in the social-democratic cluster: 0.5-0.8% of Gross National Product is spent on measures of this type, roughly half what is usual in the Scandinavian countries.

The limited supply of less productive labour is reflected in the low labour market participation of older men; this holds both for those in the 55-64 age group, who can take advantage of the relatively favourable early retirement schemes, and for the over-65s, who are forced to retire at that age. The labour market participation rate of 55-64 year-olds is less than 50% – slightly higher in Germany – compared with more than 70% in Sweden and Norway. Less than one in twenty over-65s are in paid employment, compared with more than 15% in the United States and Norway. The labour market participation of women aged 25-54 is also generally low in the corporatist group of countries (below 65%).

Esping-Andersen's claim that the total amount of employment in the services sector is relatively low in the corporatist countries holds only for Germany and France, though there too it accounts for 59-65% of total employment, not much lower than in Norway, Sweden, the United States and Canada (70-73%). The Netherlands and Belgium (both 69%) are virtually at the social-democratic/liberal level.

According to the scores on the first dimension shown in figure 2.1, the *social-democratic countries* share their comprehensive system of social protection with the corporatist group. On a number of points the social-democratic system is even more inclusive than the corporatist system, and this difference becomes clear on the second dimension. The high level of provisions specific to the social-democratic countries is manifest, among other things, in the replacement rates after five years' unemployment for couples with children. While the net income replacement for long-term unemployed single people and families without children does not vary much from that in the corporatist group (with the exception of Belgium, which comes out lower), the replacement rates for families with two children in Sweden and Denmark are much higher (95-100%). The replacement rates for single-parent families after five years' unemployment are higher on average in the social-democratic countries: in Belgium and Germany the rate is less than 50%, in France and Norway it is slightly higher, in the Netherlands and Sweden 69-72%, and in Denmark 90%.

The collective old age pension for people without an employment history is another example of a provision which is particularly generous in the social-democratic group. In Belgium, Germany and France the average monthly amount (including housing benefit) for single people and couples is less than 750 dollars; in Norway, Denmark and the Netherlands it is over 900 dollars. Sweden occupies an intermediate position here.

The coverage of employment and earnings-related pensions presents a less clear picture. The social-democratic group comes out high on average, because in Sweden and Denmark all employees fall under the occupational pension schemes. The coverage in Norway, however, is low: this country operates a voluntary insurance scheme, to which 25% of employees are affiliated. In Germany and France the coverage is not as high as in Sweden and Denmark, but is still considerable (65-80%). The Netherlands lags behind somewhat here (50%), while the coverage in Belgium is very low (5%) and relates primarily to people in management positions: 80-90% of managers are eligible for an occupational pension, which offers benefit amounting to 60% of the most recently earned income. It should be noted, however, that all employees in Belgium do fall under the public pension scheme, which provides an income replacement equivalent to 60% of average annual income during the recipient's career. The social-democratic group (including the Netherlands) has relatively high, uniform surviving dependants' benefits for widows of non-workers, which are available to all citizens; as already stated, such a universal provision does not exist in Belgium, Germany or France. The flipside of this is that the social-democratic countries do not have a separate collective scheme for surviving dependants of ex-employees, the dominant system in the corporatist group.

With regard to incapacity for work schemes, the group of people insured for occupational risks in the social-democratic countries is more extensive than in the corporatist group. The 'risque professionnel' is not only covered for employees, but also for the self-employed, trainees, interns, and so on. Against this, in the social-democratic countries a threshold is consistently applied: the less severely disabled have to rely on benefits designed to cover the social risk. In the corporatist group, only Germany requires a certain minimum level of disability before allowing people to make use of the occupational disability benefit schemes.

The social-democratic countries operate a relatively low threshold for the social risk: an invalidity percentage of at most 65% is sufficient for eligibility for invalidity benefit. In the liberal group, a person whose disability has not resulted from their employment must be virtually totally disabled before being eligible for benefit.

A further characteristic of the social-democratic group is the longer duration of earnings-related maternity and parental leave: more than six months in Sweden and Norway, compared with the 13-26 weeks – even less in Germany – which is the norm in Western Europe.

Denmark is an exception, in that it operates only 'flat rate' benefits. The generally high child benefits are a feature which the social-democratic group share with the corporatist countries. However, there is one population category which receives less attention from the social-democratic cluster than the countries with a corporatist or liberal system. Poor families with many children enjoy no special status in the social-democratic countries; this contrasts with the liberal group, because of the targeting of benefits at low-income groups, and with the corporatist countries, because of the extensive protection of large families.

The flipside of the high level of provisions in the social-democratic countries is the high cost of funding those provisions. The average rate of direct taxation and social security contributions is higher for the average single-earner production worker than in the corporatist countries. Here again, however, the picture is not uniform: Denmark and the Netherlands come out highest (39-41%), but the German level is comparable with that in Sweden and Norway (26-28%). The levels of direct taxation in Belgium and France correspond with those in the liberal countries (18-24%).

The tax treatment of socio-economic groups varies in the three types of welfare state. The social-democratic and corporatist countries share the characteristic that the marginal rate for single people with an income of 1.33 that of the average production worker is significantly

higher than in the liberal group. The picture is different as regards the cut-off point for double-earners: in the social-democratic countries, this group is hit significantly harder than in the corporatist and the liberal countries. In Sweden and Norway, for example, the marginal rate for single earners is 47-51%; in Denmark and the Netherlands it is 62-64%, while in France and Germany it is below 35%. The rates for double-earners vary within the social-democratic group: in Sweden and Norway the marginal rates are low, comparable with those in the United Kingdom (34-35%); but Denmark and the Netherlands have the highest marginal rates for double-earners of all countries studied (52-62%).

On the labour market, the social-democratic group sets itself apart through the strong emphasis on active integration policy and the high participation of women. The whole body of measures aimed at labour market training, promoting the entry of young people, subsidised employment, retraining and employment of disabled people, and public employment placement services accounts for between 1.1% and 1.7% of GNP, well above the level in the corporatist and liberal countries. In Sweden and Denmark, more than 85% of women aged 25-54 are in paid employment, slightly less in Norway. The figure in the corporatist countries, by contrast, generally does not exceed 65%.

A 'social welfare bias' is found particularly in Sweden and Norway, where 26-30% of employment is in the social sector (health care, welfare, education, etc.).

Strikingly, there is no statutory minimum wage in the social-democratic countries. This contrasts with some corporatist and most liberal countries: the United States, Canada and (until recently) United Kingdom have a low statutory minimum wage, while France and the Netherlands have a high minimum wage. Whether a great deal of significance should be attached to this, however, is uncertain: the high level of social security benefits and collective arrangements negotiated between employers and trade unions in the social-democratic countries may in practice offer just as much protection at the bottom end of the pay ladder as a statutory minimum wage. In theory, however, there are fewer barriers in the social-democratic countries to taking on less productive workers than in countries with a high minimum wage.

2.4 Differences within the country clusters

Not all countries share the characteristics of their cluster to an equal degree; this can be seen from the object scores, which diverge particularly within the liberal and social-democratic groups. The precise scores are determined by:

- the number of times a country possesses the characteristics typical for its own cluster (see figure 2.1);
- the number of times a country shares a score with the two other clusters, i.e. has characteristics which are typical of the country groups to which it does not theoretically belong;
- the degree to which a country exhibits such characteristics (e.g. does a corporatist country fund a large or very large share of its social security system via contributions?);
- the relative weight of these variables in the analysis, as indicated by the component loadings (correlations of the scores with the principal component).

Within the *liberal* group, the system in the *United States* is the most residual. This country displays virtually all characteristics which are typical of the liberal group, and moreover these often fall into the most extreme category. The high score for the United States on the first dimension reflects the low level of provisions, the high take-up thresholds, the emphasis on means-tested social assistance, the low tax and contribution rates, the extensive post-industrial

employment with the emphasis on commerce and financial services, the fairly high labour market participation of older men (more than 15% of the over-65s are still in paid employment), and the somewhat higher labour market participation of women compared with the corporatist countries. Moreover, there are few characteristics which the United States shares within the non-liberal clusters, and in this sense the collective system has a fairly pure residual structure. The distortions which are present are all in the corporatist direction, which explains the slightly positive score on the second dimension. The most important distortions are that a substantial proportion of social security is funded via contributions (58%, slightly lower than in Belgium), and the fact that child tax allowance is fairly high (comparable with French levels).

And yet the American system is not restricted in all respects; the meagreness is directed primarily at the least well-off. The collective 'welfare' system which targets the poor is complemented by a fairly generous system of 'social security' which is aimed primarily at the middle classes with an employment history. This division is strongly apparent in the health care provisions. Although the United States is the only OECD country without a general collective medical expenses insurance, the relative spending on health care provisions – at more than 13% – is the highest of all OECD countries. This is not attributable to the limited programmes for the needy (Medicaid) or the elderly and some disabled people (Medicare), but to the high costs of private medicine.

The American system also shows great local variation (see e.g. Eardley et al. 1996: 420-428). This is most apparent in the various national assistance schemes. The *Supplemental Security Income* (SSI) and the *Food Stamps* (FS) scheme operate at national level and are therefore uniform, but some states top them up to a higher level. The *Aid to families with dependent children* (AFDC) scheme was operated by individual states; within federal guidelines, the states could determine for themselves who was eligible for the scheme and what level of benefits they would receive. This scheme has now been replaced by one which sets a time limit of 60 months, the *Temporary Assistance to Needy Families* (TANF). *General Assistance* (GA) is of particular importance for needy households who are not eligible for other schemes, in particular single people and couples without children. This scheme does not operate at national level; in 1992 22 states had a uniform GA-scheme which operated for the whole state; 20 states had programmes operating only in some counties or cities; and in eight states this provision was not available at all.

Australia has no collective social insurance schemes and is thus a textbook example of a liberal or residual system. The country does indeed achieve a high score on the first dimension, yet is evidently less residual than the United States. The discrepancy is caused mainly by the fact that the provisions for children and the average level of child benefit are higher than in the United States, and also by fact that the replacement rates, both on commencement and after five years' unemployment, are higher in Australia than in the USA. For couples with children and single-parent families, the replacement rates after five years on benefit are actually as high as in the social-democratic countries. Although the means-tested social assistance benefit in Australia is virtually the only form of social security, therefore, it is not entirely residual. Eardley et al. (1996: 4-40) point out that the residual character of Australian social security is relative, especially in the collective old age pension provision; although the benefit is means-tested, in 1989 roughly 80% of older people were in receipt of retirement pension. The threshold amount above which there was no entitlement to collective benefit is higher than the average wage, and the means test has a high exemption threshold. The fact that the total revenues from direct and indirect taxation are the same in Australia as in

the United States in terms of GDP is therefore not caused by the fact that the provisions to be funded in Australia are equally meagre across the board. The fairly favourable age profile of the population (many young people, relatively few older people) plays a role of equal importance here.

Canada is less uniformly liberal than the United States and Australia, with a number of the typical residual characteristics not being found in the Canadian system. For example, the share of means-tested social security is significantly lower than in the USA and Australia; a number of provisions are near to the levels found in the social-democratic countries; the level of the minimum old age pension for people without an employment history, which is covered by the *Old Age Security* scheme, is comparable with that in Sweden; child benefit has a universal structure and is not income-related, while the total level of provisions to cover costs of children is significantly higher than in United States. Moreover, all working women are eligible for maternity leave, while in the other liberal countries up to 50% cannot claim this. The labour market participation rate of women is also higher in Canada than usual, being roughly comparable with the level in Norway. One correspondence with the corporatist group is the absence of a surviving dependents' scheme for all citizens.

Nevertheless, Canada also exhibits a fairly large number of residual system characteristics, and thus fits within the liberal group. The replacement rates of unemployment and national assistance benefit, both at the onset and after five years' unemployment, are low. Moreover, earnings-related unemployment benefit is of short duration. In addition, a means test is applied in the collective old age pension scheme for the supplements which are provided to pensioners with little supplementary income or younger partners with a low income (*Guaranteed Income Supplement* and *Spouse's Allowance*). There is a highly threshold for the social risk in the invalidity benefit scheme. On the labour market, the share of post-industrial employment in commerce and financial services is high, and there is little investment in an active labour market policy. The required funding, measured against the total revenues from tax and social insurance contributions, is relatively limited, and marginal rates are therefore relatively low. For people with an employment history there are fairly generous earnings-related benefits to cover the risks of retirement, incapacity for work and death, based on the *Canada Pension Plan* and the *Quebec Pension Plan*. Unemployment, sickness, maternity and parental benefit are all covered by the *Unemployment Insurance* scheme. Social assistance is partly funded at federal level, but the provinces and local authorities have a wide degree of freedom in determining the eligibility criteria, the use of a means test, and the level of benefits. There is also a separate welfare scheme for 'native Canadians' who live on reserves. This leads to considerable regional variation, as in the United States. The norm amounts for child benefit also vary widely between the provinces: some provinces provide top-ups or vary the amounts depending on the age and number of children. The system in Quebec, in particular, consequently exhibits corporatist characteristics.

The post-war welfare state in the *United Kingdom* was initially not residual but universalist. The system devised by Beveridge which was introduced after the Second World War, with a national social insurance, premium-based funding, flat-rate benefits and a limited social safety net, was developed even further in the following decades. In the 1960s and 1970s, benefits were increasingly related to earnings, and cover was also introduced for those who had paid insufficient contributions, as well as to cover the cost of medical treatment for those who had difficulty meeting these expenses themselves. Under the influence of the economic crisis and the neo-liberal philosophy of the Conservative government, however, earnings-related benefits

were gradually phased out in the early 1980s, and the conditions for eligibility for unemployment benefit were tightened up – among other things by stating that people had to be available for work. The anti-fraud policy was intensified and the benefits for short-term sickness and maternity leave were privatised. The changes to the system culminated in the *Social Security Act* of 1986, in which the national earnings-related pension provision was abolished, the national assistance scheme restructured, and incentives built in to encourage a switch from public to private provisions. Eardley et al. (1996: 388-389) describe this development as a shift in emphasis in the collective social security system towards targeting and means-tested social assistance. This implies a weakening of the universalist nature of the British social security system, a break with the Beveridge system, with '(...) social assistance becoming a mass scheme instead of a residual safety net (...)’.

Nevertheless, universalist elements can still be found in the British system, which go back to the philosophy introduced by Beveridge. The analysis therefore reveals the United Kingdom as moderately residual – comparable with Canada – with a certain distortion in the direction of the social-democratic countries.

The residual characteristics of the United Kingdom relate to the low spending on social security, the relatively low marginal tax rates, the relatively high proportion of means-tested social assistance, short-term unemployment benefit and little in the way of a labour market policy geared towards active integration.

The universalist aspects of the British system are reflected in the first place in the replacement rates, which are higher than in the other liberal countries. The initial benefit on commencement of unemployment for households with a low income is a fairly high percentage of previously earned income, as is the benefit after five years' unemployment for single people and couples without children. For couples with children, the replacement rate after five years is actually high, comparable with that of Denmark. The minimum level in the collective old age pension is also relatively high for people without an employment history, corresponding with the level of benefits in Sweden. Moreover, the threshold for eligibility for invalidity benefit to cover the social risk is very low, comparable with that in Norway and the Netherlands (less than 50%). The provisions for children are also more generous than is usual in the liberal states: the total range of provisions to help cover the costs of children is reasonable, child benefit is universal and not related to income, and the level of child benefit is higher than in the United States and Canada. Finally, the level of employment in the trading sectors is lower than any other liberal country; on the other hand, the level of employment in financial services is just as high in the United Kingdom as in the rest of this cluster.

It is apparent from the foregoing that the more or less equal scores for the United Kingdom and Canada on the first dimension have a different background. In the British system, the deviation from the liberal model relates to the higher replacement rates of unemployment benefit and social assistance, the low invalidity benefit threshold, the low level employment in commerce and reasonable provisions for the costs of children. Canada only shares the latter deviation with the United Kingdom; important aspects there are the high labour market participation rate of women, the general availability of maternity leave, the good old age provision for people without an employment history, the absence of a surviving dependants' provision for all citizens, and the low importance of means-tested social assistance.

In the corporatist group, the differences between Belgium, Germany and France are small. They share most of the corporatist characteristics and have relatively little in common with the liberal and social-democratic countries. Nevertheless, there are a few discrepancies.

Belgium matches the general corporatist picture painted earlier, with three exceptions. First, employment in the services sector is higher than the usual. In addition, the replacement rate of the 'bare' social assistance after five years without work is low for single people and couples without children, being at the level of the liberal countries. This comment should be qualified by stating that the various assistance schemes in Belgium – separate provisions for the disabled, the elderly and *Minimex* ('Revenu minimum de moyens d'existence et de l'integration') – are of relatively subordinate importance because many risks are covered by social insurance schemes; one of these, the unemployment insurance scheme, continues until the age of 65. However, the third exception is that the replacement rate of the initial unemployment benefit is also low – at least for employees with an income equivalent to that of the average production worker – and take-up of this provision is high. The reason for this is that unemployment benefit (60% of previous earnings) is tied to minimum and maximum amounts, which do not diverge by a wide margin.⁹ The Belgian unemployment benefit scheme, due to the low range of benefits, the minimum and maximum levels differentiated by household type and the absence of any limitations on the duration, comes close to having the nature of a social assistance provision. What sets it apart from this is that no means test is applied and the scheme is also generous in certain respects. For example, the unemployment benefit scheme allows for the possibility of career interruption, paying benefit to people wishing to withdraw from the labour market temporarily (six months to a year), or wishing to switch from full-time to part-time working (for a maximum of five years).

France matches the corporatist system characteristics described earlier in every respect except one: the labour market participation rate of women is slightly higher than in Belgium and Germany, and tends more towards the levels found in the liberal cluster. France also shares a number of other characteristics with the liberal group, with the result that its score on the first dimension tends in that direction somewhat. These characteristics include the relatively high importance of social assistance. Although France has had a general social safety net only since 1989 (*Revenu minimum d'insertion*), specific provisions have existed for long time for groups such as older people, the disabled and widows. Eardley et al. (1996) list eight social assistance schemes with different target groups. In addition there are programmes at both department and local level, as well as in each of the three branches of the French social security system,¹⁰ which provide special assistance (*Aide Sociale and Action Sociale*). As a result of all these schemes, the share of means-tested social assistance in total social security spending is estimated at 15% (Eardley et al 1996: 156). This is not surprising, because social assistance is often paid as a top-up benefit in cases where the mainstream insurance schemes fall short. France has no collective basic retirement pension provision, for instance; the *Minimum Vieillesse* is only paid to older people who have built up insufficient pension rights. The provisions for surviving dependants (including the *Allocation Veuvage*) are subject to a similar means test.

Marginal rates in France are also at the level of liberal systems, as personal income tax and employee social insurance contributions are relatively low. However, this is offset by higher indirect taxes and employers' contributions, so that ultimately the total revenues from taxation and contributions account for the same proportion of GNP as in the other corporatist countries (44-46%).

The origin of the corporatist system was *Germany*, but this does not mean that the characteristics of this system are more prominent in that country than elsewhere. Germany does have a clear corporatist system, but there are also a number of exceptions, most of them

related to shared scores with the social-democratic countries in the area of disability benefit insurance. For example, the threshold for non-work-related disability benefit is low. And although there is a minimum disability requirement for the occupational risk, this is offset by the fact that the target group is broadly defined. On these three points, the German system is precisely the same as that in Sweden and Norway.

However, there are also aspects on which the German system tends towards the liberal system. For example, child benefit for households with a higher income – especially single-parent families – is relatively low, because a partial means test is applied. The total revenues from taxation and social insurance contributions are also on the low side (38% of GNP, slightly higher than in the United Kingdom). This is caused by the fact that the revenue from tax levies other than personal income tax is low in Germany: 14% of GNP compared with approximately 17-20% in most of the other countries. Only the United States scores lower here, with 11%.

In the social-democratic group, the system in *Denmark* exhibits virtually all typical characteristics. Denmark has a universal pension for retirement and disability, social insurance schemes for unemployment, illness and incapacity for work, and a safety net in the form of social assistance. There are also subsidies to help with housing costs and the costs of children, and fairly extensive social welfare provisions (nursing homes, childcare facilities). Eardley et al. (1996: 112) conclude that '(...) the combination of universal and insurance-based social security places Denmark firmly in the Scandinavian model of welfare states (...)'. An important difference compared with Sweden and Norway, however, is that Danish social security – including the social insurances – is funded almost entirely from taxation. Of the total revenue from taxation (49% of GNP), only 2% comes from employees' contribution; 53% comes through personal income tax and 43% from other taxes. The employers' share of social insurance contributions is zero. The average and marginal tax rates in Denmark (and the Netherlands) are the highest of all countries studied.

As would be expected within the social-democratic system, the replacement rates are generally high; the replacement income after five years of unemployment for a single-parent family with two children is in fact significantly higher than in all other countries (90% compared with 69-72% in Sweden and the Netherlands).

And yet the Danish system does not meet the social-democratic model in every respect. Total employment in the social services sector is lower than in Sweden and Norway, and many collective provisions are not related to earnings but are paid on a flat-rate basis. Of the variables included in this analysis, this applies for paid care leave and benefits for non-work-related disability. The collective provision for old age and surviving dependants also contains a means test. Deviations such as these mean that there is a slight distortion in Denmark in the direction of the liberal system, a fact reflected in its more residual score on the first dimension in figure 2.1.

The welfare state in *Sweden* also displays virtually all social-democratic characteristics, though here there is no liberal distortion. One striking feature is the funding structure, which differs from that in Denmark. Since Sweden has relatively high employers' social insurance contributions (a surcharge of approximately 33% of the income of the average employee, comparable with the rate in Belgium), the marginal rates for households are lower than in Denmark. This applies particularly for double-earners, who pay a low marginal rate by international standards (approximately 34% for an income of 1.33 times that of the average production worker), which is comparable with that in the United Kingdom. Sweden also shares a number of characteristics with the corporatist group, including the

longer duration of paid and unpaid care leave and the continued full payment of wages in the event of work-related disability.

The system in *Norway* is in some respects less social-democratic than that in Denmark or Sweden. There are a number of differences of degree, as a result of which the scores for Norway in figure 2.1 are closer to the source. The labour market participation rate of women is somewhat lower, slightly less money is spent on an active labour market policy, and the replacement rates are lower across the board. Tax rates are lower than in Denmark, because the system is partially funded from social insurance contributions. In contrast to Sweden, contributions are paid by both employers and employees; employers' contributions in Norway, however, are lower. A clear difference compared with the other social-democratic countries is the very low coverage of earnings-related supplementary pension insurance. This is a voluntary insurance in Norway, which reaches approximately 25% of employees. In Sweden and Denmark this insurance is compulsory and all employees are covered by definition.

The Netherlands, finally, is the only one of the countries studied which cannot be placed squarely in one of the three clusters. In the period studied – the early 1990s – the Dutch system was a hybrid with corporatist and social-democratic characteristics. Aspects which the Netherlands share with the corporatist countries are the fact that a large proportion of social security is funded through social insurance contributions (paid mainly by employees), that social security schemes make a certain distinction between different occupational groups, and that provisions for civil servants are relatively generous. The Netherlands also occupies a middle position in terms of active integration policy on the labour market, and the labour market participation rate of women and older men is low. Subsidies towards the costs of children, in contrast with the majority of the corporatist countries, are fairly limited. This does not apply for large families, however, which, under the Child Benefit Act which was in force until 1995, received rising levels of benefit depending on the number of children. The correspondences with the social-democratic countries relate in the first place to the high replacement rates at the onset and after five years of unemployment. Often, the benefits are at the same level as in Sweden and Denmark (with the exception of the benefit for couples with children after five years' unemployment, who receive a very high replacement income – 95-100% – in the latter countries). This is reflected in the high Dutch tax rates, which are of the same order as those in Denmark – the highest of all countries studied. The Netherlands also shares a low level of selectivity with the social-democratic countries, a fact reflected for example in the high level of benefits for surviving dependants of non-workers (the old Widows' and Orphans' Benefits Act) and the low degree of disability needed in order to be eligible for disability benefit (partly because the Netherlands does not distinguish between work-related and general disability).

Employment in the services sector as a whole is also high, and is significantly above that in France and Germany (69% versus 58-65%). This is caused in the first place by the fact that the social services sector is highly developed, although it is somewhat smaller than in Sweden and Norway (22% versus 26-29%). In addition, employment in financial and business services is relatively extensive, at 11%, comparable with that in the United Kingdom, Australia and Canada, but more extensive than in Sweden and Norway.

More generally, the Dutch system in the period considered here is a hybrid between the universal target group (most manifest in the national insurance schemes), the generous benefit conditions and the high costs of funding of the social-democratic system on the one hand, and the low 'employment incentives', the limitations on the labour supply of women and less

productive workers, and the protection of the acquired standard of living which characterises the corporatist countries on the other. Esping-Andersen (1990: 53, 87) was initially fairly unclear about the position of the Netherlands in his typology: sometimes the country was placed among the social-democratic states, sometimes in the corporatist cluster. In a recent publication he is more pronounced about 'the Dutch enigma', and acknowledges the fundamentally hybrid nature of the system: '(...) the Netherlands remains a Janus-headed welfare regime, combining both social democratic and conservative attributes (...)' (Esping-Andersen 1999: 88). The Janus head of the Dutch welfare state is also clearly visible in the results of the empirical analysis carried out here.

Notes

- 1 Thus the Netherlands – with Belgium and Austria – 'heads' the corporatist group in terms of de-commodification (Esping-Andersen 1990: 53). In terms of pension provision, however, the Netherlands is classified more as a 'universalist' state together with Norway, Sweden, New Zealand and, possibly, Denmark (*ibid.*, 87).
- 2 Several other criticisms of the work of Esping-Andersen are of less importance for this study, but are mentioned briefly here for the sake of completeness:
 - the generalisations are sometimes very broad; this means that typical country differences within the clusters are neglected. This criticism is accommodated in this study by applying the rather more refined classification of countries as outlined in the previous section.
 - Esping-Andersen largely ignores the importance of international developments (liberalisation and globalisation of the market economy, enlargement and internal strengthening of the European Union); countries are analysed as relatively closed and autonomous political systems.
 - Esping-Andersen's original analysis related to the development of the welfare state up to the 1980s. As a result, several later developments are ignored. The cutbacks and economies of later years – reductions in benefit levels, abolition of certain provisions, privatisation and strengthening of market forces – may have influenced the systems in several countries in various ways, with the result that the typological distinction between countries may well have become less 'pure'. In addition, the positive view of the Nordic model in terms of de-commodification is not qualified by later experiences, although Esping-Andersen does refer to the Achilles heel of this system: it comes under pressure if wage moderation and full employment can no longer be achieved, and this is precisely what happened in Sweden in the 1990s. Finally, the analysis ignores the implications of recent political changes (the opening up of the borders with Eastern Europe and German reunification); as a result, it was possible to reduce defence spending in Western Europe and the US, and slightly more scope was created in government budgets. In his later work Esping-Andersen (1996, 1999) addresses some of these points; while he acknowledges that the welfare state is 'in transition', he sticks to the structural differences between the three types of welfare regimes.
- 3 Princals (Principal components analysis by alternating least squares) is a form of non-linear principal components analysis. In normal principal components analysis (PCA), variables are reduced to a limited number of uncorrelated dimensions, and the average correlation of the variables with these dimensions is maximised. In PCA it is assumed in advance that the original variables have an interval measurement level. With the Princals method the initial measurement level is given and the variables, given this restriction, are scored optimally by choosing quantifications which maximise the correlation with the principal components. See also Gifi (1990).
- 4 In the analysis presented, all variables were first scored on a single ordinal basis. This implies that the quantifications must be chosen in such a way that the original ranking of the categories is maintained; the distance between the scores is however free. For ten variables, the ordinality requirement results in a loss of fit of more than 0.50 across two dimensions. Better scoring of the characteristics can be achieved by making the measurement level less restrictive; in this case that would mean not requiring that the original ranking of categories has to be maintained in one line (multiple nominal quantifications). Further analysis shows that, for six of these variables, the loss of fit is acceptable because the ordinality requirement leads to a substantively more easily interpretable score. For the four remaining variables, however, this is not the case, because the three country clusters are concentrated separately around certain characteristics, which cannot be adequately expressed by means of an ordinal quantifications on one line in two dimensions. For these variables – active labour market policy, labour market participation of women, the disability benefit threshold for the 'risque social' and the presence of a collective surviving dependants' scheme for residents – a multiple nominal quantification reflects most accurately the differences between the countries, and this method has therefore been used.
- 5 The eigenvalue of the first dimension is 0.40; that of the second is 0.28. A supplementary analysis was also carried out with a five-dimensional solution. The eigenvalue of the three 'higher' dimensions turned out to be much lower (0.14 for the third dimension, 0.09 for the fourth and 0.07 for the fifth). This analysis did not produce any new substantive insights. On the first two dimensions, the same differences and country clusters remained, while on the last three dimensions a few less easily interpretable systematic differences between countries were found. For example, the third dimension is dominated by a number of differences between the Netherlands on the one hand and Sweden and Norway on the other. These differences relate among other things to the somewhat higher share of the social services sector and the higher marginal tax

- rates in the Netherlands, the absence of a full early retirement scheme in Sweden and Norway, and the absence of a collective surviving dependants' insurance specifically for employees in the Netherlands.
- 6 It was decided to indicate the general direction of the characteristics, because a plot of all category quantifications would make the picture very unclear.
 - 7 This income is not spent entirely on the elements of the welfare state investigated here, but is also used for government tasks such as justice, defence, education and health care.
 - 8 The progressiveness of child benefit levels was abolished in the Netherlands as part of the overhaul of the Child Benefit Act in 1995.
 - 9 A couple with children received benefit of 60% of the most recent earnings in Belgium in 1989, with a minimum amount of BEF 898 and a maximum of BEF 1079 per day. By way of comparison, in 1990 an unemployed person in the Netherlands was eligible for 70% of a maximum daily wage of NLG 265 in 1990.
 - 10 These branches are the fund for family provisions (*Caisse d'Allocations Familiales*), the pension fund for wage employees (*Caisse Nationale d'Assurance Vieillesse des Travailleurs Salarisés*), and the health insurance fund (*Caisse Nationale d'Assurance Malade*).

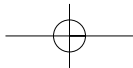
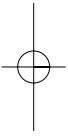
characteristic	Classification of countries by 58 system characteristics											
	countries											
	NL	B	D	F	S	N	DK	UK	USA	CAN	AUS	source
occupationalism												
schemes for occupational groups	2	2	3	3	1	1	1	2	1	1	1	US Dpt. Health & Human Services (1991)
level of protection for civil servants ^{b)}	4	4	4	4	1	2	2	2	3	1	1	ILO (1992)
	1=not; 2=moderate; 3=frequent 1=<150\$; 2=150-299\$; 3=300-499\$; 4=>500\$ per hoofd bevolking 15-64 jaar											
funding												
total revenues from direct and indirect taxes and social insurance contributions/GNP (1991)	3	3	2	3	4	3	4	2	1	2	1	OECD (1995a)
average rate of direct taxation and social insurance contributions (single earner+children, APW) (1991)	4	2	3	1	3	3	4	2	1	1	1	OECD (1995a)
marginal rate for single person, 1.33 APW (1991/92, tax + social insurance contributions)	5	4	3	1	4	3	5	1	2	2	3	OECD (1994b; 262)
marginal rate for single earner + children, 1.33 APW (1991/92, tax + social insurance contributions)	3	2	1	1	2	2	3	1	1	2	2	OECD (1994b; 262)
marginal rate for double earner + children, 1.33 APW (1991/92, tax + social insurance contributions)	4	3	2	1	1	1	3	1	1	3	2	OECD (1994b; 262)
average surcharge (%) of employer contributions (single earner + children, APW) (1991)	2	4	3	1	4	3	0	2	2	2	1	OECD (1995a)
share of social security funded through contributions insurance contributions	4	3	4	4	2	2	1	2	3	1	1	ILO (1992)
employment tax incentives (exemptions as % of average income of APW single earner) (1991)	2	4	3	4	2	3	2	1	1	1	1	OECD (1995a)
employment tax disincentives (exemptions for breadwinners – not in connection with children – as % of income) (1991)	3	1	1	1	1	1	2	3	3	2	2	OECD (1995a)
labour market												
statutory minimum wage (1990) ^{a)}	3	1	1	3	1	1	1	2	2	2	1	OECD (1994b; 46 e.v.)
coverage of collective labour agreements (1990)	3	4	4	4	3	3	2	1	1	1	3	OECD (1997a; 71)
activating labour market policy (1990-91) ^{c)}	3	3	3	3	4	3	4	2	1	2	1	OECD (1993; 73)
labour market participation of men, 55-64 years (1990)	1	1	2	1	4	4	3	3	3	3	3	OECD (1995b)
	1= no; 2=yes (low) 3=yes (high) 1=-50%; 2=50-69%; 3=70-89%; 4=>90% 1=<0.5%; 2=0.5-0.8%; 3=0.8-1.1%; 4=>1.1% BNP 1=-50%; 2=50-59%; 3=>60-69%; 4=>70%											

(continued) characteristic	countries											source
	NL	B	D	F	S	N	DK	UK	USA	CAN	AUS	
labour market participation of women, 25-54 (1990)	1	1	1	2	4	3	4	2	2	3	2	OECD (1997a: 71)
total employment in services sector (1992)	3	3	1	1	3	3	2	2	3	3	3	OECD (1994a: 6)
employment in services sector: social/community welfare	3	2	1	2	4	4	2	2	3	2	2	OECD (1994a: 6)
employment in services sector: financial/business/real estate	3	2	1	2	2	1	2	3	4	3	3	OECD (1994a: 6)
employment in services sector: wholesale and retail	2	2	2	2	3	1	1	2	4	4	4	OECD (1994a: 6)
retirement pension												
coverage of separate collective retirement provisions	2	1	1	1	2	2	2	2	1	2	2	US Dpt. Health & Human Services (1991)
minimum level of collective provision for non-employees (1991)	3	1	1	1	2	3	3	2	1	2	1	US Dpt. Health & Human Services
means testing of collective coverage	1	1	1	2	1	1	2	2	2	2	3	OECD (1988)
coverage of earnings-related occupational pensions	2	1	3	3	4	1	4	2	2	2	3	OECD (1992: 34-38)
average gross replacement rate of earnings-related pension (incl. social security)	2	2	3	3	3	3	3	3	3	3	1	OECD (1992: 34-38)
equivalence of insurance duration/level of collective benefit	2	1	2	2	1	1	2	1	1	1	1	US Dpt. Health & Human Services (1991)
(semi-)collective scheme for full early retirement	2	3	1	3	1	1	2	3	2	1	3	OECD (1988); De Kemp (1992)
surviving dependants' pension												
collective provision for widows of residents	3	1	1	1	3	3	3	2	2	1	2	US Dpt. Health & Human Services (1991)
collective pension for widows of employees	1	3	3	3	2	2	3	1	3	3	1	US Dpt. Health & Human Services (1991)
means testing	1	1	1	3	1	1	2	2	2	1	3	US Dpt. Health & Human Services (1991)
separate orphan's pension	2	2	2	1	2	2	1	2	2	1	1	US Dpt. Health & Human Services (1991)

(continued) characteristic	codings/indicators	countries										source		
		NL	B	D	F	S	N	DK	UK	USA	CAN		AUS	
cost of children		2	3	2	3	3	3	2	2	1	2	2	2	Bradshaw et al (1993: 74). Sweden and Canada: various sources
total level of provisions	1=low; 2=moderate; 3 high @													
child benefit														
income-related/universal	1=income-related; 2=universal; 3=universal and income-related system	2	2	3	3	2	2	2	3	1	2	1	1	Bradshaw et al (1993: 35-37); Us of Health & Human Services (1991)
average child benefit (universal + income-related) over eighteen family types ^{b)}	1<136 euros p.m.; 2=136-181; 3=182-227; 4=ca 275; 5=430-475 euros per month	2	4	2	5	5	5	4	3	1	1	3	3	Bradshaw et al (1993: 37); US Dpt. of Health and Human Services (1991)
amount for poor lone-parent families relative to country average (= 100)	1=100-135;2=150-175; 3=ca. 240	1	1	1	1	0	2	2	2	3	0	3	3	Bradshaw et al (1993: 37)
amount for non-poor lone-parent families relative to country average (= 100)	1=0-80; 2=100; 3=130-150	2	2	1	3	0	3	3	1	1	0	1	1	Bradshaw et al (1993: 37)
amount for poor couples with four children relative to country average (=100)	1=80-100; 2=140; 3=200-700	3	3	3	2	0	1	1	3	3	0	3	3	Bradshaw et al (1993: 37)
amount for non-poor couples with four children relative to country average (= 100)	1=0-100; 2=125-170; 3=200-210	3	3	2	2	0	1	1	1	1	0	1	1	Bradshaw et al (1993: 37)
tax benefits														
tax benefits for couples with children (32 family types) vs. couples without children ¹⁾	1=nl; 2=7-20; 3=48-62; 4=74-88 euros per month	1	4	4	3	1	3	1	1	3	2	2	2	Bradshaw et al (1993: 41); OECD (1995a)
disability														
general permanent incapacity (risque social): coverage	1=some employees; 2=all employees; 3=employees+ self-employees;4=residents; 5=residents (basic)+ employees (earnings-related)	5	1	2	2	5	5	4	3	3	3	4	4	US Dpt. Health & Human Services (1991); EC (1990); SCP (1992)
disability threshold	1 = <50%; 2=50-64%; 3=65-79%; 4=80- 100%	1	3	2	3	2	1	2	1	4	4	4	4	US Dpt. Health & Human Services (1991); EC (1990); SCP (1992)
level of benefit	1=fixed amount; 2=earnings-related	2	2	2	2	2	2	1	1	2	2	1	1	US Dpt. Health & Human Services (1991); EC (1990); SCP (1992)

(continued) characteristic	countries											source
	NL	B	D	F	S	N	DK	UK	USA	CAN	AUS	
disability due to occupational accidents or illnesses (risque professionnel): coverage	0	1	3	2	3	3	3	2	2	1	2	US Dpt. Health & Human Services (1991); EC (1990); SCP (1992)
disability threshold	0	1	2	1	2	2	2	2	1	1	1	US Dpt. Health & Human Services (1991); EC (1990); SCP (1992)
level of benefit	0	3	2	3	3	2	2	1	2	2	2	US Dpt. Health & Human Services (1991); EC (1990); SCP (1992)
unemployment and social assistance net replacement rate ^{d)} of unemployment benefit at onset of unemployment, couple with children, 2/3 average production worker	3	2	2	3	3	2	3	2	1	1	2	OECD (1997b: 29)
net replacement rate of unemployment benefit at onset of unemployment, couple with children, average production worker	3	1	3	2	3	2	3	1	1	1	2	OECD (1997b: 29)
duration of unemployment benefit (no means test, earnings-related) ^{j)}	2	3	2	2	3	3	3	1	1	1	1	OECD (1997b: 31)
net replacement rate of social assistance benefit after five years without work: single person	4	2	3	3	4	3	4	3	1	2	2	OECD (1997b: 28)
net replacement rate of social assistance benefit after five years without work: single-parent family with 2 children	3	1	1	2	3	2	4	2	1	2	3	OECD (1997b: 28)
net replacement rate of social assistance benefit after five years without work: couple without children	4	2	3	3	4	3	3	3	1	2	2	OECD (1997b: 28)
net replacement rate of social assistance benefit after five years without work: couple with 2 children	2	1	1	1	3	2	3	2	1	1	2	OECD (1997b: 28)
share of means-tested social assistance in total social security spending	2	1	1	3	2	1	1	3	3	2	3	Eardley et al. (1996), for the Netherlands; Sociale Nota 1997

(continued) characteristic	codings/indicators	countries										source	
		NL	B	D	F	S	N	DK	UK	USA	CAN		AUS
leave arrangements for care tasks		2	3	3	3	3	2	2	2	1	2	2	OECD (1995c: 181)
maternity and parental leave: duration	1= <0.5 jr; 2=0.5-1.5 jr; 3= >1.5 jr												OECD (1995c: 181)
ditto: duration of paid (earnings-related) benefit	1=no benefit; 2=flat rate; 3=earnings- <13w; 4=earnings; 13-25 w; 5=earnings-related, >26 w.	4	4	3	4	5	5	2	3	1	4	1	OECD (1995c: 181)
coverage of maternity leave (total of all working women)	1= <50%; 2=50-99%; 3=100% f)	3	3	3	3	3	3	3	2	1	3	1	LIS
level of maternity benefit	1= <50%; 2=50-69%; 3=70-84%;4=85-99%; 5=100% of earnings	5	3	5	3	4	5	4	1	2	2	2	LIS
a	In the United States and Canada the statutory minimum in separate states can vary from the national picture. In the United Kingdom the statutory minimum wage at the start of the 1990s was restricted to sectors where collective negotiations and trade unions do not have a strong structure.												
b	Expenditure on civil servant provisions per head of the population aged 15-64, in USD.												
c	Total of labour market trading, measures aimed at young people, subsidised employment and reintegrative measures/workplaces for the disabled.												
d	Benefit amount/previous earnings (after tax).												
e	Average amount for a single person and a couple, including housing benefits.												
f	For Germany, France, Belgium and United States social assistance levels have been taken as a basis, because of the lacking collective retirement provision for non-ex-employees. The middle category consists of the United Kingdom (60%).												
g	Based on the average rankings of countries on all provisions.												
h	Couples and single-parent families with 1, 2 and 4 children, respectively (aged 3, 7, 8 and 14 years); broken down by income level (half average income, average income, one and a half times average income).												
i	Couples with 1, 2, 3 and 4 children by eight income positions.												
j	There is no unemployment insurance in Australia. The duration of benefit payments in the Netherlands, Germany and France is sometimes lengthy (up to 4-5 years), but sometimes also short (six months), depending on employment history/age. In Belgium there is no limit to the duration of unemployment benefit. In Sweden, the right to benefit can be periodically renewed through participation in labour market programmes.												



3 HYPOTHESES AND DATA

This chapter first formulates a number of hypotheses on the correlations between the types of welfare state identified and certain socio-economic results, viz. the redistribution of income, income inequality, social welfare and poverty in the various countries (§ 3.1). This is followed by a summary of the databases which will be used in the subsequent chapters to test the hypotheses (§ 3.2).

3.1 Hypotheses

Esping-Andersen did not devote a great deal of attention in his study to the topics which are the central focus here: redistribution, income inequality, social welfare and poverty. In fact, from the perspective of his theoretical interest, he actually explicitly excludes these traditional functions of the welfare state: 'In any case, poverty and income distribution constitute only one (albeit important) aspect of welfare state stratification. Even if inequalities in living standards decline, it may still be the case that essential class or status cleavages persist. What concerns us here is not so much incomes as how nations differ in the structuring of social citizenship' (Esping-Andersen 1990: 57).

Despite this, his typology is still usable for the formulation of hypotheses on the phenomena investigated in this study. Precisely because Esping-Andersen's classification is not based on differences between countries in the degree of income inequality, poverty, etc., it can serve as a starting point for theoretical assumptions without immediately becoming tautological.

Although it may be assumed that there is a relationship between the degree of decommodification, stratification and post-industrial employment on the one hand, and the phenomena studied here on the other, this is by no means an imperative. The system characteristics which underline the empirical typology (see figure 2.1) can be regarded as the input of the welfare state in the various country clusters. In the remainder of this study, consideration will be given to whether the differences in the structuring of the socio-economic system also systematically work through into the output: the results of the system in terms of redistribution, income inequality, social welfare and poverty.¹

Esping-Andersen's classification of countries is based primarily on the political and private provisions in the areas of social security, health care and social services. Certain aspects of the welfare state, such as the structure of the tax system, the role of capital incomes and the education system, are largely left out of consideration. The scant attention for tax levies in the typology is particularly unfortunate for the purposes of this study. Where they cannot be derived from Esping-Andersen's typology, supplementary assumptions will be made where necessary. It should be noted here that the study does not look at the role of indirect taxation (e.g. VAT), because no data on these taxes are available in the databases used. Because the actual level of indirect taxation varies from country to country – a recent OECD study speaks of a bandwidth ranging from 0.9% of GDP in the United States to 8.0% in Denmark (Adema 1999) – the results in terms of the real disposable income of households are distorted somewhat.

This study can also not have the pretension that it measures the entire output of the welfare state in the various countries. For example, no allowance is made for 'public wealth', in the sense that the prosperity which citizens derive from income transfers associated with the take-

up of certain provisions (such as subsidised education or childcare) is not taken into account. Doing so would require an international comparative analysis of 'government benefits', whereby a certain amount is allocated in each country to users who benefit from tied income transfers. Although the Social and Cultural Planning Office (SCP) carries out such an analysis for the Netherlands with some regularity (see e.g. Pommer & Ruitenberg 1994), this study largely ignores this so-called tertiary income distribution. Allowance is however made for a few tertiary components: housing benefit, student grants and a number of provisions 'in kind' (such as the Food Stamps in the United States) are included in disposable income, while contributions paid for health insurance are deducted from disposable income. Another limitation of this study is that differences in outcomes with regard to income distribution, income level and poverty are related only to the welfare state type. In reality, of course, these differences are also influenced by many other characteristics, such as demographic and economic factors (e.g. population size and growth, age profile, economic cycle and sector structure). Given the limited number of eleven countries for which the necessary income data were available, however, it was not possible to perform a (multivariate) analysis which takes account of several background characteristics. Only where there is a very obvious direct correlation between the outcome of the analyses and a specific background characteristic (such as the effect of the proportion of older people in the population on social security spending), is explicit attention devoted to this.

The following sections formulate a number of hypotheses for each topic in this study; the hypotheses are derived from the Esping-Andersen typology. All hypotheses which include oppositions between the country clusters should be understood in such a way that the assumed pattern is clearer as the countries resemble more closely the ideal type for that country cluster, as charted in the previous section.

3.1.1 Hypotheses on income redistribution

Chapter 4 looks at the differences between the country clusters as regards the degree to which income from wages, profits and assets are redistributed across income groups through taxation, social insurance contributions and social security benefits (vertical redistribution). The central hypothesis here is:

In the liberal welfare states the degree of income redistribution through taxation and social security is low; in the corporatist welfare states it is moderate and in the social-democratic welfare states it is high.

More precisely formulated, the hypothesis is that the difference between the inequality of the primary and secondary income distribution is lowest in the liberal regimes and greatest in the social-democratic welfare states, with the corporatist countries occupying an intermediate position.

The high degree of redistribution in the social-democratic countries is assumed on the basis of:

- the relatively high level of social benefits;
- the wide reach of the benefits;
- a strongly progressive income tax regime;
- the high average tax burden.

The corporatist regimes fund a large part of the social security benefits from social insurance contributions which, because of the use of franchises and maximum contribution limits, are less progressive than wage and income tax. Moreover, the level of social security benefits varies as a result of the correlation between contributions paid and level of benefits (equivalence principle), to a greater extent than in the social-democratic countries. On the other hand the corporatist countries, because of the passive labour market policy and low labour market participation rates, have a large number of benefit claimants. This can reinforce the redistributive effect of social security, which means that it cannot be assumed in advance that the degree of income redistribution is lower than in the social-democratic clusters. Levies in the liberal welfare states are lower and, supported by the liberal ideology, less progressive. However, many benefits are subject to a means test and thus mainly benefit those on the lowest incomes. Consequently, social benefits have a strong levelling effect. However, the effect on overall income inequality is likely to be limited because of the smaller group of people reached and the low level of the benefits. On balance, therefore, the degree of income redistribution in the liberal cluster is posited to be the lowest.

3.1.2 Hypotheses on income inequality

Chapter 5 focuses on inequality in secondary income. The following hypothesis will be tested with regard to the differences between the country clusters:

The inequality in secondary income is greatest in the liberal countries, lowest in the social-democratic group. The corporatist countries occupy an intermediate position, fairly close to the social-democratic cluster.

The inequality in secondary income is assumed in advance to be greatest in the liberal countries, because the primary income distribution is more unequal in these countries and the degree of redistribution (see § 3.1.1) is assumed to be the lowest. The extensive inequality in primary income distribution is a result of the following factors: weaker legal protection of workers (dismissal law, etc.: employees have a weaker negotiating position) and the weaker organisation of labour (less powerful trade unions; no system of generally binding collective labour agreements).

The degree of income inequality is assumed to be lowest in the social-democratic states, because of the combination of a relatively equal primary income distribution and the greater redistribution from economically active to economically inactive citizens (see § 3.1.1). The low primary income inequality can be attributed to the extensive legal protection of workers and the strong negotiating position of trade unions. The intermediate position of the corporatist states arises because the inequality in primary income distribution is comparable to that in the social-democratic cluster, but the degree of redistribution is less pronounced (see § 3.1.1). The degree of income inequality is therefore likely to be slightly greater than in the social-democratic countries.

3.1.3 Hypotheses on social welfare

Social welfare is concerned with to the combination of inequality and average income in a given country. Chapter 6 examines to what extent there are differences between the country clusters in this respect. The importance of this analysis for policy can be illustrated using two extreme scenarios. On the one hand it is possible that a country is so committed to far-reaching income equality that this has a detrimental effect on the national income. High employers' contributions discourage investments in labour and foster the shedding of less productive workers; this in turn reduces the number of contributors and pushes up the number

of benefit claimants, necessitating a further increase in levies. This trend is reinforced by the high moral hazard (calculating behaviour of citizens) which accompanies a highly accessible and generous social security system geared to redistribution, and by the discouraging effect of high marginal rates on the labour supply.

In the second scenario, the focus is on promoting economic growth by maximising income from productive labour and profits. Employers, employees and benefit claimants are consequently offered strong financial incentives, leading to a rise in average incomes. A high level of income inequality is the price for this. This can give rise to social unrest, and in the long term may also turn out to be economically less productive. (For example because poor families cannot invest in the education of their children, leading to under-utilisation of human capital).

Both scenarios illustrate the importance of the relationship between income inequality and a country's welfare level. The countries studied here aim to achieve an optimum mix of inequality and average income. Where the optimum lies for a particular country depends on the degree of aversion to inequality, or the preferences with regard to average income levels. In a democratic society, the level of social welfare achieved should ideally be a reflection of the attitudes of the population towards inequality and income levels.

The following hypotheses will be investigated:

1. *There is a negative correlation between equality of disposable incomes and the level of average income: the more equally the disposable income of a country is distributed, the lower the average income.*
2. *There is a high degree of inequality in liberal welfare states, and the average income is high; in social-democratic welfare states the degree of inequality is low and the average income is also low; in the corporatist welfare states the degree of inequality is greater than in the social-democratic countries, but the level of average income is comparable.*
3. *The ranking of countries by social welfare depends on the weight attached to the degree of inequality. If little weight is attached to income inequality, then social welfare is highest in the liberal welfare states; if a good deal of weight is attached to income inequality, then the level of social welfare is highest in the social-democratic welfare states; and if modest weight is attached to income inequality, social welfare is highest in the corporatist welfare states.*
4. *The balance struck between income inequality and average income reflects the preferences of the population. In liberal welfare states the population attaches a relatively high degree of importance to economic growth, while the primary concern in the social-democratic welfare states is with reducing income differentials. The population of the corporatist welfare states accords approximately equal importance to both goals.*

The first two hypotheses will be tested by means of an analysis of the actual combination of income inequality and average income. The third hypothesis is studied via a pair-wise comparison of countries for all imaginable degrees of inequality aversion. The fourth hypothesis is assessed on the basis of international comparative opinion surveys.

3.1.4 Hypotheses on poverty

Chapter 7 is devoted to an international comparison of poverty rates. Three poverty thresholds are used here:

- the relative poverty line which is used by the OECD and the European Union (50% of average income);

- national poverty lines, derived from the norms for minimum income protection as laid down in the social legislation of the countries concerned;
- the poverty line adopted in Dutch policy, which is based on the norms for social assistance, state old age pension, etc.

One central hypothesis will be tested for each variant:

1. *Poverty is most widespread in the liberal countries and least widespread in the social-democratic countries. The corporatist states occupy an intermediate position.*

In addition, a number of hypotheses will be tested for particular risk groups:

2. *A relatively large number of wage-earners are poor in the liberal states ('the working poor'), because of the absence of minimum wage protection.*
3. *Self-employed workers are less frequently poor in social-democratic states than in liberal and corporatist states, because they benefit from the universal coverage of social security.*
4. *Non-retired economically inactive people are often poor in liberal states because of the low level of benefits and the selective coverage. In social-democratic countries, this group runs less risk of poverty because of the high level of benefits and their universal accessibility. The corporatist countries occupy an intermediate position, because high benefit levels there are combined with less universal coverage.*
5. *The contrasts between the liberal, corporatist and social-democratic countries are less pronounced for pensioners than among younger economically inactive people, because most countries have fairly good pension protection, sometimes linked to supplementary private insurance.*
6. *Young people living alone are more frequently poor in liberal and corporatist countries than in the social-democratic countries. In the liberal countries, these young people are confronted with low and selective levels of provision; in corporatist countries, the link with employment history means they less frequently have an entitlement to earnings-related benefits and are forced to rely on the less generous social safety net.*
7. *The risk of poverty for single people aged 30-64 is comparable in the social-democratic and corporatist countries, and relatively high in the liberal countries. In contrast to young people, this group has frequently built up sufficient rights in the corporatist countries and is thus eligible for high benefits for a long period.*
8. *Single-parent families are relatively frequently poor in liberal and corporatist countries, because they have fewer opportunities to work full-time (care tasks, little assistance with looking after children, etc.), and are forced to rely on the meagre residual welfare provisions or have built up an insufficient employment history to be entitled to earnings-related provisions.*

A comment needs to be made to qualify these hypotheses, namely that the poverty ranking of countries can vary somewhat depending on the poverty criterion used. If the relative poverty line is used, the number of poor people is strongly influenced by the inequality at the bottom end of the income distribution. If poverty is measured against national policy norms, it is important to know how universal or selective those norms are (is everyone eligible for the social protection offered?), and also what the actual reach of the income guarantee is. The latter is influenced by access criteria (including the use of means testing), restrictions on the duration of benefits, criteria relating to the building up of entitlements, the imposition of sanctions in the event of abuse of the system, the method of implementing the schemes, and the level of non-take-up.

Application of the Dutch policy norms to other countries can lead to deviating results, because the level of this threshold differs from the norm amounts which apply in those countries. This may be due to a higher or lower level of welfare, or may ensue from differing views regarding the degree of solidarity with the less well off. The structure of the Dutch poverty line may also differ from local practice. Certain groups may receive relatively more or less income protection from social security and on the labour market than in the Netherlands (relatively higher or lower benefits, minimum wages, etc.). This may be a result of budgetary differences (e.g. if the costs of bringing up children in a certain country account for a greater average proportion of household income, it is likely that the level of child benefit will be somewhat higher), but may also be a matter of political judgment (financial incentives, a distinction between 'deserving' and 'undeserving' poor).

3.2 Data

This section first presents a general overview of the data² and income definitions used. A number of limitations are then identified and an indication is given of the way in which the original material has been manipulated in this study.

Databases

Until 10 or 15 years ago, empirical income comparisons between countries were based mainly on official statistics. One of the problems with this was that the national administrations generally adopted rather different income definitions, which of course did not contribute to the quality of the comparison. In addition, the income data were often available only at aggregated level and were therefore suitable only for answering fairly general questions. This situation changed with the arrival of extensive databases such as the Luxembourg Income Study (LIS) and the European Community Household Panel (ECHP). Both projects are designed to build up databanks containing detailed, mutually comparable income data to which a number of substantive background variables have been added. For various reasons it was decided to use the data from the LIS database as a source of foreign data in this study: the greater diversity of countries, and particularly the presence of liberal welfare states outside Europe, allows the hypotheses to be subjected to a broader test than would be possible with the ECHP data. In contrast to the ECHP database, the LIS is based on existing surveys and attempts to maximise the comparability of the data through recoding and post-treatment. Table 3.1 contains a summary of the databases. For the Netherlands, the data available in Luxembourg (based on the Socio-economic Panel Survey by Statistics Netherlands (CBS)) were not used; instead, use was made of the Income Panel Survey, which is much bigger and, because its administrative design, has no problems with non-response. This means that the same source was used as in the official income statistics for the Netherlands.

Table 3.1 Summary of databases used

country	name of database	year	number of households	ditto, after manipulations/ selections
Netherlands	Income panel survey	1991/1995/1996	67,531/71,100/71,781	67,334/70,907/71,455
Germany	German social economic panel study	1989/1994	4,187/6,045	3,644/5,812
Belgium	Panel survey by the Centre for social policy	1992	3,821	3,764
France	Family budget survey	1989	9,038	8,470
Sweden	Income distribution survey	1992	12,484	12,312
Norway	Income and property distribution survey	1991/1995	8,073/10,127	8,036/10,066
Denmark	Income tax survey	1992	12,895	12,603
United Kingdom	Family expenditure survey	1991/1995	7,056/6,797	6,997/6,697
United States	March current population survey	1991/1994	14,708/56,873	14,497/55,948
Canada	Survey of consumer finances	1991/1994	20,035/37,475	19,903/37,283
Australia	Australian income and housing survey	1989	14,450	14,278

An important aid in making data on income in the different countries comparable is to reduce the classification of the many income sources available in the databases to three main constituents:

1. Pay in return for production factors;
2. Untied income transfers;
3. Tied income transfers.

The first category comprises income derived from the availability of labour and capital. This income is not only made up of pay from employment, including bonuses and interest income received, but also includes rental income and the imputed rental value of the home and the employers' contributions to social insurance contributions. The sum of these 'rewards' for the making available of capital and labour is referred to as the *primary income*.

Untied income transfers are transfers which are not tied to the use of goods or services. They comprise both levies and benefits. Examples include income and wealth tax, social insurance and annuity contributions, social security benefits, pensions and alimony. Setting off these untied income transfers against the primary income produces the *secondary income*.

If the levies and benefits are tied to the use of goods and services, they are referred to as tied income transfers. For example, in order to receive housing benefit it is necessary to rent at home, and recipients of a study allowance must be enrolled with an educational establishment. Other examples of tied transfers are duties and other indirect taxes, student grants and loans and childcare subsidies. If the balance of the tied levies and benefits is attributed to households and added to the secondary income, this produces the *tertiary income*.

This study concentrates on *disposable income*. In the definition used here, this consists of the secondary income, augmented by a number of tied transfers (usually a form of housing benefit and/or student finance; Food Stamps in the United States) and reduced by contributions for health insurance.

From the point of view of *comparability*, it is desirable that the income definitions are based as far as possible on the same income sources (in so far as these occur in the countries concerned). However, to ensure the greatest possible *validity* of the income measurement within each country, the income definition measured should cover the actual income as far as possible.

Because the LIS databases are based on existing surveys, in which income measurement was not always the central focus, concessions in the area of comparability and/or validity are unavoidable. In general, attempts to increase comparability by searching for the largest possible common denominator (incomes in all countries are then based on the same, shared income sources) tend to erode the validity of the measurement within each country, because the country-specific aspects of the income distribution are neglected.

Limitations of the data

The LIS data are widely used in leading international comparative research, because the data set is fairly broad, has a reasonable number of measurement points and a wide representation of countries. (See e.g. Atkinson et al. 1995; OECD 1997c; LIS, various years). To the extent that these data have been tested against other sources, this generally produces comparable results (Gottschalk & Smeeding 1998: 16). However, because this is not a uniform measurement instrument which is applied in the same way in all countries, there are also a number of limitations. The main limitations are as follows:

- in France and Canada no data are available on social insurance contributions paid;
- the definition of a household in Sweden does not correspond with that used in other countries (in Sweden the tax unit – couples and individuals aged 18 and above – is used as the definition of household; children living at home who are aged 18 and over are thus treated as separate households);
- in a number of countries there is no information about rentable value.

In addition, each database has specific characteristics which can influence the results:

- As stated, the method of data gathering varies from country to country, and this may have led to varying forms of selectivity. Sometimes income is measured using administrative data, often taken from the tax authorities (Norway and the Netherlands). Other countries use questionnaires (United States, Australia, Canada, United Kingdom, France) or a combination of questionnaires and administrative data (Sweden, Denmark). Yet other countries use data taken from panel surveys, in which the same respondents are surveyed periodically (Germany, Belgium). All these data sources have their limitations. It is possible that administrative data do not reflect the current situation (file contamination) or contain systematic distortions because certain income components, such as alimony, are not represented in the administrations. Surveys, for their part, often under-report the level of social security benefits and income from profits and assets. The former means that low incomes are underestimated, so that the measured inequality becomes greater; the second underestimates the high incomes, reducing the measured inequality. It is unclear to what extent these two distortions cancel each other out in the various countries. Gottschalk and Smeeding (1998: 11) moreover point out that this under-reporting only influences the differences in inequality between countries if the distortion varies between those countries. In contrast to administrative data, which usually cover a somewhat longer period (one year), surveys generally focus on monthly incomes (which are then extrapolated to a full year). It is possible that this also creates a certain amount of distortion, because chance can play a different role in the various observation periods. In addition to under-reporting, panel data may also suffer from selective drop-out: it is possible that some groups end their participation on the panel more frequently than others, and it is not certain that adding new respondents combats this selectivity sufficiently.
- The incomes of the institutional population (in hospitals, nursing homes, prisons, etc.), of illegal immigrants and of the homeless are generally left out of consideration.

Transformations

In order to maximise the comparability of incomes, a number of transformations were carried out on the data:

- rentable value was not added to either the primary or disposable income;
- where necessary, incomes were converted to a standard currency (the euro) and a standard year (1991, 1995). The conversion of foreign currencies was carried out by means of international purchasing power parities as published by the OECD. These give a summary of the prices of standard ranges of consumer goods in the countries concerned. Attributing to a standard year takes place by deflating the incomes by the growth per head of the population of total spending incurred by households for their consumption, augmented by their net savings. This deflator appears to reflect most accurately changes in household incomes which may occur due to economic growth, inflation and the increase in the population. The use of macro-figures does however mean that it is assumed that all incomes have grown equally, from the survey year to the standard year;
- a threshold of 25% of the Dutch statutory minimum income for a single person is adopted as the lower limit of the distribution. Households with a lower disposable income have been removed, because it can be assumed that many of these cases are caused by measurement inaccuracies. However, this also means that self-employed people with a very low or negative income (loss) have been left out of consideration.

Notes

- 1 Goodin et al. (1999) pose a similar question and review the relationship between welfare state regime and efficiency, poverty, equality, integration, stability and autonomy. A strong point of this study is that it makes use of panel data, which means that dynamic aspects can also be charted. However, their country selection would appear to be too limited for a proper test of the existence of the 'three worlds of welfare capitalism'. Because so few long-term country panels are available, Goodin et al. are forced to focus their analysis on the United States, Germany and the Netherlands, which are claimed to represent the liberal, corporatist and social-democratic welfare states, respectively. In view of the analysis in chapter 2, it is debatable whether the hybrid Netherlands can be described as a social-democratic welfare state; this would mean that this variant is in fact absent from the analysis by Goodin et al.
- 2 In accordance with the user agreement for the LIS databases, the following applies for the data from the United Kingdom: 'Material from FES is Crown Copyright; has been made available by the Office for National Statistics through the ESRC Data Archive; and has been used by permission. Neither the Office for National Statistics nor the ESRC Data Archive bear any responsibility for the analysis or the interpretation of the data reported here.'

4 REDISTRIBUTION

To what extent do the institutions of the welfare state reduce income differentials? After formulating the hypotheses to be tested (§ 4.1), this chapter first discusses the theoretical impact of social security and of tax levies on the degree of income inequality (§ 4.2). Section 4.3 uses the available figures for the Netherlands to explain how the extent of redistribution can be analysed quantitatively. The next section applies this method to the other LIS countries in order to ascertain in which countries the redistributive function of the welfare state is greatest and in which countries it is smallest (§ 4.4).

4.1 Introduction

Every welfare state uses a system of social security and taxation to apply a correction to the income distribution created by the market. In addition to or instead of income from earnings or profits, households may receive social security benefits, but by the same token they have to pay tax and social insurance contributions from their gross income. The result of this system is that income is transferred from households which pay more tax and contributions than they receive in social benefits, to households where the reverse is the case.

This chapter compares the redistributive function of the social security and taxation system of the different countries in the study. Not surprisingly, the direction and extent of the income redistribution is related to the nature of the welfare state. In a social-democratic welfare state such as Sweden, or a corporatist welfare state such as Germany or the Netherlands, the extent of the income transfers (as a percentage of national income) in the form of social security benefits, taxation and contributions is considerably greater than in a liberal welfare state such as Australia, Canada or the United States. This chapter tests the hypothesis that the extent of income redistribution via social security and taxation is greatest in the social-democratic welfare states (Sweden, Denmark, Norway), that the corporate welfare states (Germany and Belgium) occupy an intermediate position and that redistribution occurs least in the liberal welfare states (United States, Australia, United Kingdom and Canada). In addition, these effects would be expected to be strongest in those countries which most closely approach the 'ideal' of the various types of welfare state categories. The degree of income redistribution in the Netherlands, which occupies a position midway between the social-democratic and corporatist welfare states, is likely to follow closely that of the social-democratic Scandinavian countries. This could produce the following ranking of countries by decreasing degree of income redistribution: Sweden, Denmark, Norway, Netherlands, Germany, Belgium, Canada, United Kingdom, Australia, United States. The rankings of Sweden versus Denmark, Germany versus Belgium and Canada versus the United Kingdom are somewhat uncertain here, because these countries showed virtually no differences from each other in the typology of welfare states in chapter 2.

Attention in this chapter is limited to income replacement and income supplementing social security benefits and to direct taxes and social insurance contributions (including both employee and employer contributions). Benefits and subsidies which are paid as a reimbursement for specific costs (e.g. medical expenses) are left out of consideration, as are indirect taxes (such as VAT and excise duty), which increase the price of certain consumer

goods. As regards social security, no distinction is made between statutory, collectively funded schemes and private, semi-collective schemes (for example laid down in collective labour agreements). The reason for this is that a welfare state cannot simply be equated to those schemes which are funded and implemented directly by the government or a government agency. Rather, it comprises a whole of collective and semi-collective provisions for which the government, even though it largely creates the parameters, need not necessarily bear primary responsibility.

In concrete terms, the following hypothesis is tested in this chapter:

In the liberal welfare states the degree of income redistribution through taxation and social security is low; in the corporatist welfare states it is moderate; and in the social-democratic welfare states it is high.

The measurement of income redistribution is based on the (relative) difference between the inequality of the primary income distribution and the inequality of the distribution of disposable incomes. The primary income distribution is formed by the income which is generated by the market. It includes gross wages (including employers' contributions), profits, interest and rental income. Freely disposable incomes arise out of primary incomes when the social security benefits, social insurance contributions and indirect taxation are incorporated in them. The lower the inequality of the distribution of disposable incomes compared with the inequality of the primary distribution, the greater the levelling effect of social security and taxation.

For several countries, a number of a priori qualifications need to be made with regard to the data used. No data are available on social insurance contributions for Sweden and Canada, so that only the redistributive effect of direct taxation can be determined for these countries. For the United Kingdom, only the net amounts of pensions are known. This has no consequences for the calculation of the total redistribution, but does affect the contribution made to that redistribution by social security on the one hand and taxation and contributions on the other: the first is somewhat overestimated and the latter underestimated. France is left out of consideration altogether in this chapter, because only net income from work is known for that country, with no figures on gross incomes; the redistributive function of taxation and social insurance contributions can therefore not be determined.

4.2 Income redistribution through tax and social security

Income transfers between social groups through social security and taxation are not by definition the same as income redistribution from higher to lower income groups. After all, the level of income is not the only criterion on the basis of which a person may receive benefit or be required to pay tax and social insurance contributions. In the Netherlands, for example, it is age not income which is the decisive factor for entitlement to state old age pension. Child benefit, too, is not dependent on income. Moreover, the income tax payable is not determined only by the level of income but also, for example, by the presence or absence of a dependent partner. When income transfers take place from higher to lower incomes, this is referred to as *vertical redistribution*. If the income transfers take place between social groups regardless of the income of those groups, this is referred to as *horizontal redistribution*. Examples include transfers from younger to older people, from childless households to households with children and from double-earners to single-earners.

In practice, it is difficult to separate horizontal and vertical redistribution. Strictly speaking, for example, state old age pension is a form of horizontal redistribution from younger to older people. However, because the over-65s have little or no primary income (from employment or profits) and people aged under 65 generally do, the process also involves vertical redistribution from (on average) higher to lower primary income groups. Attention in this chapter is limited to vertical income redistribution.

The degree of redistribution is determined by a range of characteristics of the social security and taxation system. First of all, the *progressivity or regressivity* of the system plays an important role. In the literature, the terms 'progressivity' and 'regressivity' are not always accorded exactly the same meaning. This study aligns with the definitions used by Lambert (1993): a system of income transfers is progressive if the share taken in it by higher income groups in relation to their income is higher than that of low income groups; if the converse is the case, the system is regressive.

Social security benefits are thus progressive if households with a lower primary income receive a share of the total amount of benefits which is greater than their share in the total primary income. Households with a high primary income then receive a smaller portion of social security benefits than their share in the total primary income. It is important to note that this need not mean that the amount received by the lower income groups in social security benefits is higher than the amount which goes to the higher income groups. Suppose, for example, that the poorest 25% of households earn 5% of the total primary income and the richest 25% earn 50% of the total primary income. If the poorest 25% of households receive 10% of all benefits and the wealthiest 25% of households receive 20%, then the social benefits are nevertheless regressive because the poorest households receive relatively more, i.e. in relation to their primary income. In this case, social security benefits have a levelling effect. It can be predicted that a system with many means tests will be more regressive than a system with universal benefits which are not dependent on the recipient's income or assets. Means tests play a key role in liberal welfare states such as the United States, the United Kingdom and Australia; by contrast, the social-democratic Scandinavian welfare states have a large number of universal benefits. The Netherlands occupies an intermediate position. Social assistance is an example of a Dutch benefit which is means-tested (the income of the benefit recipient or his/her partner is deducted from the benefit); state old age pension, by contrast, is independent of the recipient's own income, while employee insurance benefits (disability benefit, unemployment benefit) are not dependent on the income of the recipient's partner but are affected by the recipient's own income. It is therefore to be expected that social security benefits are most regressive in liberal welfare states and least regressive in the social-democratic welfare states, with the corporatist welfare states occupying an intermediate position.

In order to assess the overall income redistributive effect of the social security system, allowance must also be made for the contributions made by households to funding the system through the payment of social insurance contributions. In many countries, however, social security spending is funded partly from general resources (primarily tax revenues). In Australia this is the sole source of funding. It is therefore more useful not to consider the social insurance contributions separately, but to look at the income redistributive effect of social insurance contributions and taxation together.

The redistributive effect of taxation and social insurance contributions is largely determined by the progressiveness of the system. Taxation or social insurance contributions are progressive if

a household has to pay relatively more as its income increases.¹ The share taken by the higher income groups in the total payment of taxation and social insurance contributions is then greater than their share in the total gross income. Progressive taxation or social insurance levies thus mean that the strongest shoulders have to bear the heaviest burden. The system is regressive if higher income groups pay relatively less (i.e. as a percentage of their income) than lower income groups. Proportional taxation or social insurance levies mean that the percentage of income paid in tax or social insurance contributions is the same for all incomes.²

In most countries the design of the tax system is progressive. Often a certain sum is exempt from tax (the tax allowance) and a band system operates, with a higher (marginal) tax rate being payable in each successive band. The average tax burden (the tax payable as a percentage of income) thus increases with income.

The effect of social insurance contributions on income redistribution is less clear. Often a proportional rate (a fixed percentage) applies up to a certain income ceiling, above which the contributions do not increase further. This means that social insurance contributions as a percentage of income reduce for higher incomes, and are therefore regressive.

It is not clear in advance what the combined effect of taxation and social insurance contributions will be. This depends on the relative importance of tax levies and social insurance contributions, and on the degree of progressivity of the tax system and regressivity of the social insurance levies. Some distortion may arise here because in some countries social security benefits are taxed, while in other countries they are not. A greater redistributive effect is then attributed to social security. The redistributive effect of tax and social insurance contributions will then be lower, because these also impinge relatively heavily on low incomes (i.e. benefits).

The degree of income redistribution through social security benefits on the one hand and taxation and social insurance contributions on the other depends not only on the regressivity or progressivity of the systems, but also on their *magnitude* in relation to the total income to be redistributed. If the social security benefits are strongly regressive (i.e. mainly benefit the poorest households), but at the same time total spending on social security as a percentage of national income is low, the benefits will make only a limited contribution to reducing income inequality. Likewise, a progressive tax system will have only a slight levelling effect if the average tax burden is low, since only a small part of the total income is then redistributed through taxation.

Although it was observed earlier that social security benefits in liberal welfare states such as the United States, Canada and Australia are regressive and thus have a strong levelling effect, their total impact on income distribution is probably limited because the total volume of social security benefits in these countries is low. Which effect is greater cannot be determined in advance. It is however noteworthy that, in the taxation system, both effects operate in the same direction. Social-democratic welfare states such as Sweden generally have a tax system which is characterised by both progressiveness and a high average tax burden, because the total collective spending is relatively high. This applies to a slightly lesser extent for corporatist welfare states. It is in fact not impossible that a relatively large proportion of public expenditure (including social security) in a social-democratic or corporatist welfare state is funded from indirect taxation. In that case, high public expenditure need not necessarily go hand in hand with a high average direct taxation and social insurance contributions.

Contrary to what might be expected, therefore, it is not possible to indicate in advance in

which type of welfare state the degree of income redistribution through social security and taxation is the greatest. It is not even possible to rule out in advance the possibility that the effect of the different systems varies little on balance. Nonetheless, the simple hypothesis will be tested in this chapter that the degree of levelling is greatest in the social-democratic welfare states, followed by the Netherlands and the corporatist states, with the liberal welfare states bringing up the rear.

It has been consistently assumed in the foregoing that the *primary income distribution* to which the social security and taxation system applies a 'correction', is exogenous. In reality, however, this is not the case. This primary income distribution is influenced directly and indirectly by government actions in several ways. The government exercises direct influence among other things as an employer – by setting civil servant salaries – and as a legislator by setting the level of the minimum wage. Indirect effects on the primary income distribution ensue from things such as regulation of the labour market (e.g. declaring collective labour agreements to be generally binding) and from the social security and taxation system itself. After all, social security and taxation can invoke reactions; for example, an employee who knows he will be able to count on a generous retirement provision from age 65, may be satisfied with a somewhat lower wage because he does not have to make any pension provision himself. Conversely, an increase in taxation or social insurance contributions can be used by employees as a reason for demanding higher wages from their employer. A generous social security system also has an impact on labour market participation: an unemployed person who is assured of a generous benefit will perhaps be less inclined to accept a (poorly) paid job, thus boosting the number of zero incomes in the primary income distribution. Chapter 6 looks in more detail at the potential 'disruptive' effect of social security and taxation on primary incomes. The empirical studies which have been made of this over time, however, have not produced any definite conclusions on the impact of any such effect on primary income distribution. It can even be argued that it is impossible in principle to determine what the primary income distribution would be without government interference. It would after all be impossible to imagine a modern society without an important steering and correcting role for the government.

In this chapter, therefore, the feedback effects of the welfare state on primary income distribution will be ignored. The inequality of the existing primary distribution is accepted as a given, and the degree to which social security and taxation reduces inequality is then studied. To the extent that social security and/or taxation increase the inequality of the primary income distribution through behavioural effects (e.g. due to an increase in the number of economically inactive individuals), therefore, their levelling effect is overestimated: if these systems did not evoke any behavioural effects, the primary distribution would be less unequal and the difference compared with the distribution of disposable incomes would therefore have been smaller.

4.3 The process of redistribution examined more closely

This chapter presents a two-stage analysis of the process of income redistribution from the primary distribution to the disposable income distribution. The primary income distribution as created by 'the market' is taken as the starting point.³ In the first stage of the analysis the effect of social security benefits on this distribution is examined; this produces the distribution of gross incomes. In the second stage, the effect of taxation and social insurance contributions on gross income is investigated. This gives the figure for freely disposable income.

The effect of taxation and social insurance contributions is examined only *after* the effect of

social security benefits has been incorporated in the primary income distribution; the reason for this is that in many countries, including the Netherlands, tax and/or social insurance contributions are or may be payable on social security benefits. If tax and contributions were to be related directly to the primary income, it would be found that households without primary income also pay tax and/or social insurance contributions, namely on the benefits they receive. The redistributive function of taxation and social insurance contributions can be determined more effectively on the basis of the total income on which taxation and/or social insurance contributions are payable. In general, this is the sum of the primary income (wages, profits, etc.) and social security benefits received.

This chapter consistently takes the household as the income unit. The income data used are non-standardised, i.e. have not been corrected for differences in household size.

Table 4.1 Share of primary income, social security benefits and gross income per decile of primary income in the Netherlands, 1996 (%)

	1	2	3	4	5	6	7	8	9	10
primary income	0	0	1	3	8	10	13	16	19	30
social security benefits	17	19	23	16	7	5	4	3	3	3
gross income	4	5	6	6	7	9	11	13	15	24

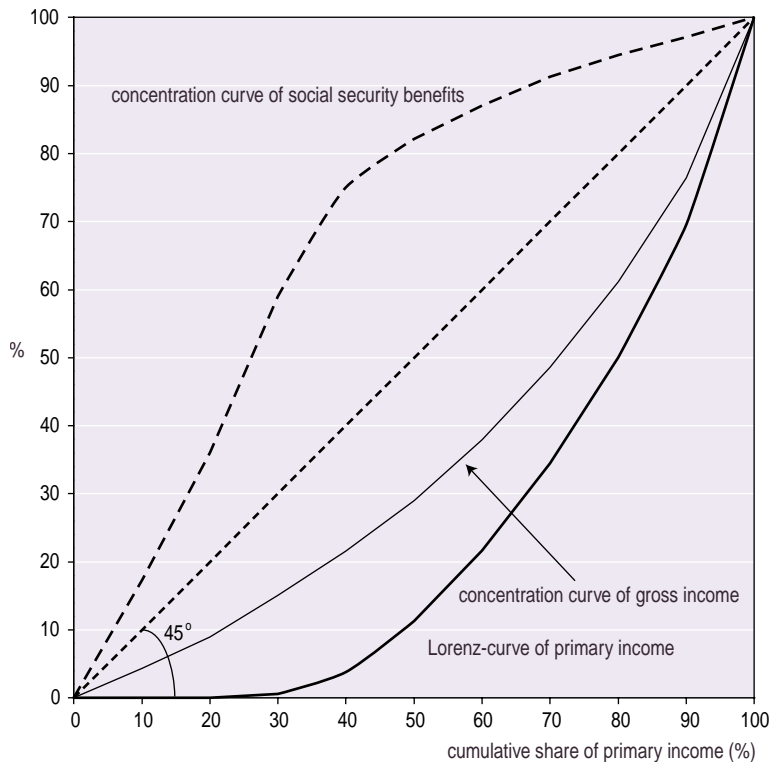
Source: CBS (IPO'96) SCP treatment

The redistributive function of social security benefits can be described on the basis of the profit derived from them by various income deciles. Table 4.1 shows this for the Netherlands in 1996. Households are ranked by increasing primary income in 10 equally sized groups (10% groups, or deciles). The table shows that the lowest two deciles (i.e. the poorest 20% of households) have a primary income of nil. Households in the third decile together receive rather less than 1% of the total primary income in the Netherlands; the 10% richest households, by contrast, receive no less than 30% of total primary income. Half the total primary income in the Netherlands goes to just 20% of households.

The third row in table 4.1 shows that social security benefits apply an important correction to the primary income distribution. Three-quarters of all benefits go to the lowest four deciles (the poorest 40% of households), which receive only 4% of the total primary income. It can be noted that within this group, households in the third decile, which have a small primary income, turn out to have a larger share of social security benefits than the households without primary income (in the first and second deciles). This indicates that benefits which are not dependent on the income of a partner (such as the employee insurances for disability benefit and unemployment benefit) are paid to a not insignificant degree to unemployed and disabled persons who themselves have a supplementary income, or whose partner has a (modest) income of their own. The 20% richest households, which receive half the total primary income, still receive almost 6% of social security benefits.

The fourth row of table 4.1 shows the resultant gross income for the various deciles. This shows that the 20% households with a primary income of (virtually) nil nevertheless receive 9% of the total gross income thanks to social security benefits. The share of the 20% richest households, which draw relatively little benefit from social security, falls to 39% of total gross income.

Figure 4.1 Lorenz curve of primary income and concentration curves of social security benefits and gross income, Netherlands, 1996



The income redistribution via social security benefits can also be shown graphically (figure 4.1). Here the cumulative distribution is taken as the starting-point. Households are arranged along the horizontal axis in order of increasing primary income. The Lorenz curve of primary income shows the cumulative share in primary income of these households. In the case of income equality, this curve coincides with the 45-degree line. The first 10% of households then receive precisely 10% of total primary income, the first 20% of households receive 20% of primary income, and so on. The further the Lorenz curve falls below the 45-degree line, the greater is the inequality of primary incomes. Thus it can be seen from the graph that the poorest 50% of households receive only slightly more than 10% of the total primary income. The area of the segment between the 45-degree line and the Lorenz curve of primary income is a measure of income inequality which is known as the Gini coefficient.⁴

Figure 4.1 also shows the 'concentration curve' of social security benefits received. This curve indicates the cumulative share of benefits received by the same households, ranked by primary income. If this curve were to coincide with the Lorenz curve of primary income, then all households would receive a share of social security benefits which was equal to their share of the total primary income. It can be seen from the graph that the concentration curve of benefits in fact lies far above the Lorenz curve of primary income. This means that poor households receive a much greater share of benefits than wealthy households. The benefits are therefore regressive, reducing the inequality of the primary income distribution. The degree of regressivity can be quantified by calculating the area of the segment between the Lorenz curve of primary incomes and the concentration curve of benefits. The larger this area, the more regressive are the benefits.

Finally, figure 4.1 also shows the concentration curve for gross income. This shows the cumulative distribution of gross incomes across households ranked by primary income. (Since households are not ranked by the level of their gross income, but by the level of primary income, this is a concentration curve rather than a Lorenz curve). As the gross income is the sum of the primary income and social security benefits, this curve lies between the Lorenz curve of primary income and the concentration curve of social security benefits. Precisely where the concentration curve of gross income lies between the two other curves depends on the relative extent of the social security benefits relative to the total (gross) income. The greater the percentage of total gross income accounted for by the total amount of benefits received, the more the resultant distribution of gross incomes is determined by the benefits, and the closer the concentration curve of gross income will lie to the benefits curve.

The fact that the concentration curve for gross incomes deviates from the 45-degree line to a lesser extent than the Lorenz curve of primary incomes means that the inequality of gross incomes is smaller than the inequality of primary incomes; in other words, social security benefits have a levelling effect. However, the reduction of the income inequality through social security benefits is not precisely equal to the area of the segment between the Lorenz curve of primary incomes and the concentration curve of gross incomes. The reason for this is that the ranking of households can change due to the receipt of benefit. Since the (level of) benefit received does not depend solely on the level of a household's primary income, it is possible that two households may be ranked differently in the distribution of gross incomes than in the distribution of primary incomes. If no allowance is made for this change in ranking, the degree of income levelling is overestimated.

The difference in inequality between the primary income distribution and the distribution of gross incomes is therefore the result of three factors:

- the regressivity of the social security benefits (the degree to which benefits are concentrated among the lowest incomes);
- the magnitude of the social security benefits compared with the total gross income;
- a correction factor to adjust for changes in the ranking of households.

This can be represented in the following formula (Lambert 1993):

$$G_p - G_b = (C_b - G_b) + a * (G_p - C_u) \quad (4.1)$$

where G_p is the inequality (Gini coefficient) in primary income distribution, G_b the inequality in gross income, C_b the concentration coefficient of gross income, C_u the concentration coefficient of the benefits and a the share taken by social security benefits in total gross income. The concentration coefficients are calculated in the same way as the Gini coefficient, but relate to the concentration curves rather than to the Lorenz curve.

The second step in the redistribution from primary to disposable income takes the form of income transfers, through direct taxation and social insurance contributions, from gross income to disposable income. Table 4.2 and figure 4.2 are analogous with table 4.1 and figure 4.1 in the first stage of income redistribution via social security benefits.

Table 4.2 Share of gross income, levies and disposable income per decile of gross income in the Netherlands, 1996 (%)

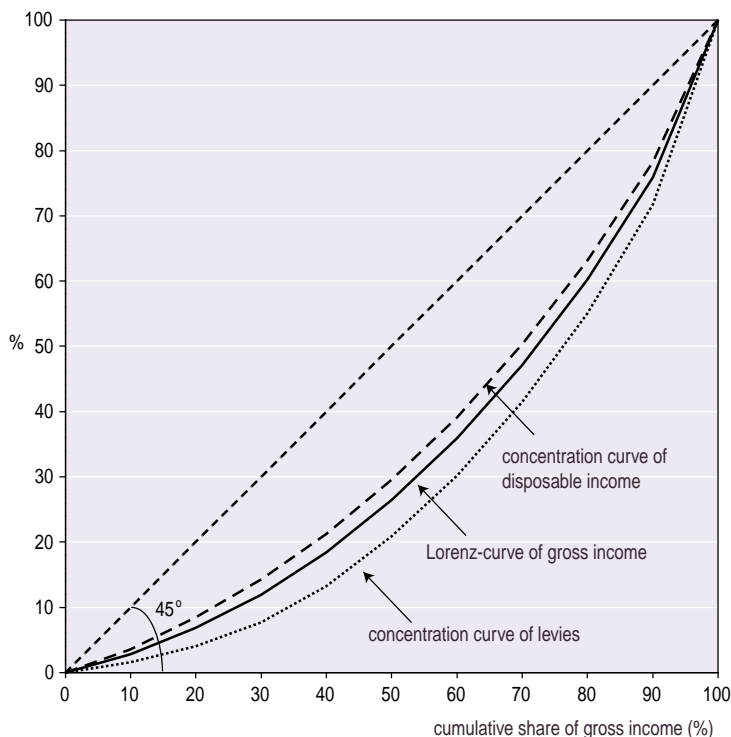
	1	2	3	4	5	6	7	8	9	10
gross Income	3	4	5	6	8	10	11	13	16	24
levies	2	2	4	6	8	9	11	14	17	28
disposable Income	4	5	6	7	8	10	11	13	15	22

Source: CBS (IPO'96) SCP treatment

The second row in table 4.2 shows the share in total gross income for households in successive deciles of gross income. Because of the changes in the ranking in the first stage of income redistribution, this row does not correspond precisely with the bottom row in table 4.1, which also relates to gross incomes.

The third row in table 4.2 shows the contribution of the deciles to the total payment of direct taxation and social insurance contributions. Up to and including the third decile, households contribute less to tax and social insurance revenues than might be expected on the basis of their share in the gross income distribution; it is only from the eighth decile onwards that households make a more than proportionate contribution. This indicates that the tax system in the Netherlands is regressive in its operation. The difference between the distribution of gross income and the levies is however fairly small, which indicates that the regressivity of the combined tax and social insurance levies in the Netherlands is fairly weak. The resultant distribution of disposable income in the fourth row of table 4.2 thus differs little from the distribution of gross income in the second row. The share of the lowest four deciles increases from 18% of gross income to 21% of disposable income. The share of the top two deciles reduces from 40% to 37%.

Figure 4.2 Lorenz curve of gross income and concentration curve of levies and disposable income, Netherlands, 1996



Here again, the income distribution can be shown graphically using the Lorenz curve of gross income and the concentration curves of levies and disposable income. The regressivity of the tax and social insurance levies is apparent from the fact that this curve lies below the gross income curve. The area of the segment between the two curves indicates the degree of regressivity of the levies.

The resultant curve of disposable income distribution again lies between the two other curves. The distance to these curves is determined by the size of the tax and social insurance levies in relation to the total gross income. The higher the amount of tax and social insurance contributions – i.e. the higher the average tax and social insurance burden – the more strongly the distribution of disposable incomes is determined by tax and social insurance contributions, and the closer the disposable income curve lies to the levies curve.

In order to establish the income-levelling effect of tax and social insurance contributions, it is again necessary to correct for the changes in the ranking of households. The formula for the degree of income levelling between the gross income and disposable income distribution is then (Lambert 1993):

$$G_b - G_s = -(C_s - G_s) + b * (C_t - G_b) \quad (4.2)$$

where G_b is the inequality (Gini coefficient) of the gross income distribution, G_s is the inequality in the disposable income distribution, C_s the concentration coefficient of disposable income, C_t the concentration coefficient of the levies and b the share taken by tax and social insurance contributions in total disposable income.

4.4 International comparison

In this section tables 4.1 and 4.2, which show the process of income redistribution in the Netherlands, are supplemented by corresponding tables for the redistribution process in the other countries for which usable LIS data are available: Belgium, Germany, Denmark, Norway, Sweden, the United Kingdom, the United States, Canada and Australia. For each country, the most recent data available at the time of the study have been used; as a result, there is considerable variation in the years used.

In all the countries studied, the primary income of the 20% poorest households is virtually nil. Likewise, the variation in the share taken by the richest 20% is not great, being around or slightly above 50% in all countries (table 4.3). The distribution of social security benefits displays the opposite picture in all countries: the households in the lowest deciles of the primary income distribution receive the most, the wealthiest households the least. In each country, therefore, it is households with a low primary income which derive most benefit from social security. This is not surprising: social security benefits are after all generally intended to replace income from employment or profits.

What is striking is that the lowest two deciles in Belgium, Denmark, Norway, Sweden and the United Kingdom receive a relatively small share of the total amount of social security benefits, i.e. at most one third (in Belgium actually less than a quarter). In Germany, the United States, Canada and Australia, by contrast, at least 40% of benefits go to the lowest two deciles. The low share in the social-democratic welfare states is explained by the fact that many benefits are universal in nature and are not subject to a partner-test. This also applies for Belgium, where the right to unemployment benefit, for example – which is not dependent on the partner's income – is unlimited in duration. As a result, households can receive benefit

Table 4.3 Share in primary income, social security benefits and gross income per decile of the primary income (in %)

	1	2	3	4	5	6	7	8	9	10
Sweden (1992)										
primary income	0	0	1	3	6	9	12	16	21	33
social security benefits	15	15	16	15	12	6	6	7	5	4
gross income	5	5	6	7	8	8	10	13	16	23
Denmark (1992)										
primary income	0	0	1	3	6	9	12	16	21	31
social security benefits	15	17	17	15	10	7	7	6	3	3
gross income	4	4	5	6	7	9	11	14	17	24
Norway (1995)										
primary income	0	0	1	3	7	10	12	16	20	31
social security benefits	17	18	19	14	8	6	6	5	4	4
gross income	3	4	5	5	7	9	11	14	17	25
Netherlands (1996)										
primary income	0	0	1	3	8	10	13	16	19	30
social security benefits	17	19	23	16	7	5	4	3	3	3
gross income	4	5	6	6	7	9	11	13	15	24
Germany (1994)										
primary income	0	0	0	3	7	10	13	16	20	32
social security benefits	20	20	22	15	7	4	4	2	3	2
gross income	4	4	4	5	7	9	11	13	16	27
Belgium (1992)										
primary income	0	1	2	4	7	10	12	15	19	29
social security benefits	9	13	13	13	11	9	8	8	8	8
gross income	2	4	5	6	8	10	11	14	16	24
Canada (1994)										
primary income	0	0	2	4	7	10	12	15	19	31
social security benefits	19	22	17	11	8	6	5	4	4	3
gross income	3	4	5	6	7	9	11	13	16	26
United Kingdom (1995)										
primary income	0	0	0	1	5	9	12	16	21	36
social security benefits	15	15	17	19	13	6	5	4	3	3
gross income	3	3	4	5	7	8	11	13	17	29
Australia (1989)										
primary income	0	0	2	5	8	10	12	15	18	30
social security benefits	24	25	19	9	6	5	4	3	3	3
gross income	3	3	4	6	7	9	11	13	17	27
United States (1994)										
primary income	0	0	2	4	6	9	11	14	19	34
social security benefits	18	24	17	10	7	6	5	4	4	4
gross income	2	4	4	5	7	8	10	13	17	30

Source: LIS; CBS (IPO%) SCP treatment

Table 4.4 Share in gross income, levies and disposable income per decile of the gross income (in %)

	1	2	3	4	5	6	7	8	9	10
Sweden (1992)										
gross income	2	4	5	6	8	9	11	14	16	24
levies	1	3	5	6	7	9	11	13	16	29
disposable income	3	4	6	7	8	9	11	14	16	22
Denmark (1992)										
gross income	2	3	5	6	7	9	12	14	17	25
levies	0	1	3	5	7	9	12	15	18	29
disposable income	3	4	5	6	8	9	12	14	16	22
Norway (1995)										
gross income	2	3	4	6	8	9	11	14	17	26
levies	0	1	2	4	7	9	12	15	19	31
disposable income	3	4	5	7	8	9	11	14	16	23
Netherlands (1996)										
gross income	3	4	5	6	8	10	11	13	16	24
levies	2	2	4	6	8	9	11	14	17	28
disposable income	4	5	6	7	8	10	11	13	15	22
Germany (1994)										
gross income	2	3	4	6	8	9	11	13	17	27
levies	0	0	1	3	6	9	11	15	20	35
disposable income	3	5	6	7	8	9	11	12	15	23
Belgium (1992)										
gross income	2	4	5	6	8	10	11	14	16	24
levies	0	0	2	4	6	9	11	15	19	33
disposable income	3	5	6	7	9	10	11	13	15	21
Canada (1994)										
gross income	2	3	5	6	8	9	11	13	17	26
levies	0	1	2	3	6	8	11	14	19	36
disposable income	2	4	5	7	8	10	11	13	16	23
United Kingdom (1995)										
gross income	2	3	4	5	7	9	11	13	17	29
levies	0	0	1	2	5	8	11	16	21	37
disposable income	3	4	5	6	7	9	11	13	16	27
Australia (1989)										
gross income	2	3	4	6	8	9	11	13	17	27
levies	0	0	1	3	6	8	10	14	19	39
disposable income	2	4	5	7	8	10	11	13	16	24
United States (1994)										
gross income	1	3	4	5	7	9	11	13	17	30
levies	0	1	2	3	5	7	10	13	19	40
disposable income	2	3	5	6	8	9	11	13	17	27

Source: LIS; CBS (IPO'96) SCP treatment

even if they have another source of income (e.g. a partner's income from employment), and thus do not belong to the lowest deciles of the primary income distribution. By contrast, in countries with a liberal welfare state, where a strict means test applies for most benefits, only households without other income are eligible for social security benefit. The position of the United Kingdom and Germany is more difficult to explain.

As social security operates regressively in all countries, the distribution of gross incomes is less unequal than the distribution of primary incomes. In most countries, the share of the 40% in poorest households rises from a maximum of 8% to between 15% and 23% of the total gross income, while the share of the 20% wealthiest households drops from around 50% to 39-46%.

Just as the social security system is regressive in all countries, i.e. benefits poor households the most, so the tax and social insurance levies are progressive in all countries, i.e. the wealthiest households pay most in relation to their gross income. For the Netherlands and the Scandinavian countries (Norway, Sweden and Denmark), however, this applies to only a very limited extent: the share of the various deciles in tax and social insurance levies differs little in these countries (with the exception of the wealthiest 10%) from their share in the gross income distribution. For the Netherlands this can be explained partly by the fact that tax is also payable on social security benefits, something which does not apply in many other countries. It is in the liberal welfare states (United States, United Kingdom, Canada and Australia) in particular that tax and social insurance contributions impose a relatively heavy burden on the wealthiest households: the households in the top two deciles in these countries contribute 55-59% of total tax and social insurance revenues. In the corporatist welfare states the figure is a maximum of 54%, and in the Netherlands it is as low as 45%.

In view of the progressive nature of the tax and social insurance levies, the distribution of disposable income is less unequal in all countries than the distribution of gross income (table 4.4). The extent to which this is the case depends not only on the progressivity of the tax and social insurance levies, but also on the level of the average tax and social insurance burden. For the same progression, a higher average burden will be accompanied by a stronger redistributive impact. This explains why in Germany, which occupies a middle position in terms of the progressivity of its tax and social insurance levies but where average tax rates are high, the distribution of disposable incomes is levelled out most strongly relative to the distribution of gross incomes. The share of the lowest four deciles in the disposable income distribution increases in Germany from 15% to 21%. In Belgium, too, the tax and social insurance levies have a fairly strong levelling effect. In the other countries, the share of the lowest four deciles increases by only two or three percentage points. The relatively progressive tax and social insurance levies in the United Kingdom, the United States, Canada and Australia therefore have only a limited levelling effect, because the average tax burden in these countries is relatively low.

The process of income redistribution – from primary income via gross income to disposable income – is summarised in table 4.5.

Table 4.5 Redistribution from primary to disposable income

	inequality (Gini)			inequality reduction (in %)		
	primary income	gross income	disposable income	primary-gross	gross-disposable	primary-disposable
Sweden (1992)	0,550	0,343	0,320	38	7	42
Denmark (1992)	0,546	0,369	0,328	32	11	40
Norway (1995)	0,513	0,380	0,334	26	12	35
Netherlands (1996)	0,484	0,335	0,295	31	12	39
Germany (1994)	0,550	0,389	0,319	29	18	42
Belgium (1992)	0,534	0,348	0,291	35	17	46
Canada (1994)	0,509	0,377	0,336	26	11	34
United Kingdom (1995)	0,595	0,423	0,379	29	10	36
Australia (1989)	0,490	0,398	0,347	19	13	29
United States (1994)	0,528	0,430	0,382	19	11	28

Source: LIS; CBS (IPO'96) SCP treatment

As can be seen from the second column in this table, there is no systematic correlation between the inequality of the primary income distribution and the nature of the welfare state. The primary distribution is least unequal in the Netherlands and Australia and shows the greatest inequality in the United Kingdom, Germany and Sweden. The explanation for this is that the primary income distribution is determined by a large number of factors. For example, wide pay differentials or a large number of benefit claimants (who have a primary income of nil) lead to a high degree of inequality in the primary income distribution. The population profile by household type can also have an effect, as multiple-person households can earn several primary incomes (see chapter 5). There is consequently no reason to expect a particular correlation between the type of welfare state and the degree of inequality of the primary income distribution.

In the countries involved in this comparison, the inequality of the primary income distribution is reduced by between 28% and 46% by the tax and social security system. Rather surprisingly, Belgium tops the list with an inequality reduction of 46%. This means that the inequality in the distribution of disposable incomes in Belgium is only slightly more than half the inequality in the primary income distribution. The standard example of the social-democratic welfare state, Sweden, follows in second place with an inequality reduction of 42%. However, it has to share this second place with the corporatist Germany. The Netherlands and Denmark follow at a short distance with a reduction in inequality of 39% and 40%, respectively. In the liberal welfare states of the United States and Australia, the levelling effect of tax and social security is, as expected, the lowest. In the United States, only just over a quarter of the primary income distribution inequality is eliminated through taxation and social security. The other countries, Norway, the United Kingdom and Canada, form a middle category: in these countries the primary income inequality is reduced by something over a third through taxes and social security.

Contrary to expectations, the income differentials in the social-democratic welfare states are thus not reduced more strongly than in the corporatist welfare states. What is in line with the expectations is that the degree of income levelling in the liberal welfare states, and in particular in the United States and Australia, is the lowest.

To explain these somewhat surprising findings, it must first be realised that the levelling of the primary income distribution is effected most in almost every country through social security benefits. In the majority of countries, these have an effect on income inequality which is between two and four times greater than the effect of tax and social insurance levies.⁵ Tables 4.6 and 4.7 look more closely at the two stages of income redistribution, namely via social security benefits and via taxation and social insurance levies.

Table 4.6 Redistribution of primary to gross income^a

	Gini coefficient		inequality reduction		explanatory factors		
	primary income	gross income	absolute	in percent	regressivity of benefits	weight of social security spending	correction factor
Sweden (1992)	0.550	0.343	0.207	38	0.806	0.331	-0.059
Denmark (1992)	0.546	0.369	0.177	32	0.840	0.250	-0.032
Norway (1995)	0.513	0.380	0.133	26	0.818	0.206	-0.021
Netherlands (1996)	0.484	0.335	0.149	31	0.887	0.249	-0.072
Germany (1994)	0.550	0.389	0.161	29	0.978	0.190	-0.025
Belgium (1992)	0.534	0.348	0.185	35	0.884	0.252	-0.024
Canada (1994)	0.509	0.377	0.133	26	0.859	0.185	-0.026
United Kingdom (1995)	0.595	0.423	0.173	29	0.899	0.218	-0.023
Australia (1989)	0.490	0.398	0.091	19	0.936	0.108	-0.010
United States (1994)	0.528	0.430	0.098	19	0.880	0.137	-0.022

a The product of the regressivity of the benefits and the weight of social security spending, augmented by the correction factor, gives the difference between the Gini coefficient and the gross income (see formula 4.1).

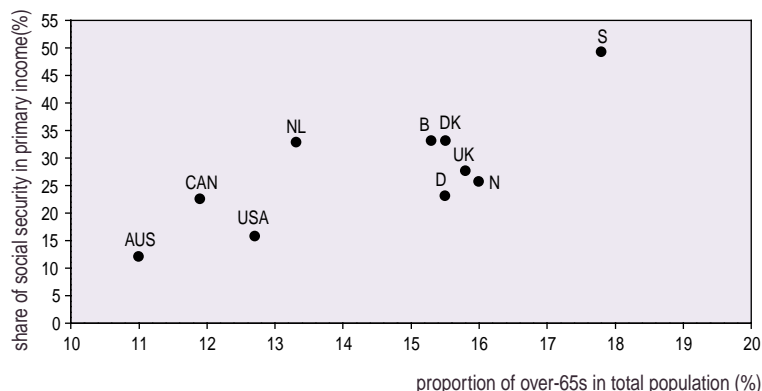
Example: for the Netherlands $0.887 \times 0.249 - 0.072 = 0.484 - 0.335 = 0.149$.

Source: LIS; CBS (IPO'96) SCP treatment

Table 4.6 shows that in the Netherlands, Belgium, Denmark and Sweden, the inequality in primary income distribution is reduced by more than 30% by social security benefits. In the United States and Australia, benefits reduce the inequality by less than 20%. However, this reduction is determined to only a limited degree by the regressivity of the benefits. This varies relatively little between the countries studied. Moreover, social security benefits in the social-democratic countries and Denmark, Norway and Sweden are the least regressive, being most regressive in the corporatist Germany and the liberal Australia. It is above all the total extent of social security expenditure which explains why social security benefits reduce income differentials more strongly in Europe than in the United States, Canada and Australia. This applies in particular for Sweden, where social security spending amounts to half the total primary income and thus, despite the limited regressivity of the social security system, reduces the primary income inequality by 38%. In the Netherlands, Belgium and Denmark, too, spending on social security is high. In the United States, Canada and Australia, social security contributes considerably less to reducing income differentials, on account of the much smaller proportion of primary income represented by social security expenditure. The United Kingdom occupies a middle position and resembles the corporatist states more than the liberal states on this point. As noted at the start of this chapter, the redistributive function of social security in the United Kingdom is somewhat overestimated, however, because only the net amounts of pensions are known.

The differences in social security spending are explained partly by the differences between the welfare state regimes. Given the residual character of the social security system in the liberal countries, it is hardly surprising that spending on social security in these countries is relatively low. The differences between the social-democratic and corporatist welfare states are less clear. Whereas the universal character of social security in the social-democratic countries leads to high expenditure, the activating labour market policy is geared to keeping the number of benefit claimants relatively limited. However, this only applies for people aged under 65. The number of benefit claimants aged 65 and over is determined in the first place by the age profile of the population. Figure 4.3 shows that this too can provide an explanation for the differences in social security expenditure. There is a fairly strong correlation between the share of social security benefits in total primary income and the proportion of the population aged over 65 ($r = 0.78, p < 0.01$). Statistically, an increase of one percentage point in the proportion of the over-65s in the population is accompanied by a rise in social security spending of 3.8 percentage points. The relatively low expenditure on social security in the United States, Australia and, to a slightly lesser extent Canada, should therefore not be attributed solely to the nature of the welfare state, but also to the fact that the age profile in these countries is younger than in the European countries. Conversely, the high expenditure on social security in Sweden is partly the result of the large share of older people in the population.

Figure 4.3 Social security quotient and proportion of older people



Source: LIS, CBS (PO' 96); US Bureau of the Census; SCP treatment

Table 4.7 shows the redistribution through taxation and social insurance contributions. It can be seen that the effect of tax and social insurance levies on income inequality is considerably smaller than the effect of social security benefits: in the majority of countries, the differences in gross income distribution and are reduced by no more than 10-13%. Belgium and Germany are the only countries where the levelling effect is greater, at 17% and 18%, respectively. Too much importance should probably not be attached to the very low levelling effect in Sweden (7%), because no data are available on social insurance contributions for this country. Somewhat surprisingly, the progression of tax and social insurance levies proves to be greatest in the liberal welfare states (United Kingdom, United States, Canada and Australia) and in Germany and Belgium. The Netherlands and the social-democratic welfare states (Sweden, Norway and Denmark) are the countries where the levies are the least progressive. This

probably has to do with the predominance of social insurance contributions in this latter group of countries, which are not progressive, or at least are much less progressive than direct taxes. The degree of income levelling through taxation and social insurance contributions is not determined only by the progressivity of the levies, however, but also by the magnitude of tax and social insurance revenues in relation to total gross income, or in other words by the average tax burden. At 30-39%, this burden is highest in the corporatist and social-democratic welfare states, and at 19-25% lowest in the liberal welfare states (not in the table). (For Sweden this percentage cannot be calculated accurately because of the lack of data on social insurance contributions). The fact that the differences between countries roughly cancel each other out in terms of progression and average tax burden explains why the resultant differences in inequality reduction are generally relatively small. In Germany, the tax and social insurance system has a relatively strong levelling effect because both the progression and the average burden of tax and social insurance contributions are among the highest of the countries studied, whereas in Belgium, while the average burden is not especially high, there is a strong degree of progressivity.

Table 4.7 Redistribution of gross to disposable income^a

	Gini coefficient		inequality reduction		explanatory factors		
	gross income	disposable income	absolute	in per cent	progressivity of levies	weight of levies	correction factor
Sweden (1992)	0.343	0.320	0.023	7	0.079	0.335	-0.003
Denmark (1992)	0.369	0.328	0.042	11	0.098	0.497	-0.007
Norway (1995)	0.380	0.334	0.046	12	0.117	0.435	-0.005
Netherlands (1996)	0.335	0.295	0.040	12	0.082	0.565	-0.006
Germany (1994)	0.389	0.319	0.069	18	0.168	0.501	-0.015
Belgium (1992)	0.348	0.291	0.058	17	0.178	0.360	-0.030
Canada (1994)	0.377	0.336	0.040	11	0.177	0.242	-0.002
United Kingdom (1995)	0.423	0.379	0.044	10	0.169	0.318	-0.006
Australia (1989)	0.398	0.347	0.051	13	0.186	0.272	-0.002
United States (1994)	0.430	0.382	0.048	11	0.154	0.326	-0.003

a The product of the progressivity of the levies and the weight of the levies, augmented by the correction factor, produces the difference between the Gini coefficient of the gross income and the disposable income (see formula 4.2).

Example: for the Netherlands $0.082 \times 0.565 - 0.006 = 0.335 - 0.295 = 0.040$.

Source: LIS; CBS (IPO'96) SCP treatment

4.5 Conclusions

In a developed welfare state the systems of social security and taxation are accompanied by a sizeable transfer of incomes between social groups. These income transfers can – though this may not necessarily be the case – lead to a considerable reduction in the inequality which is created by the market in the form of primary incomes. The degree of 'income levelling' is related to the nature of the welfare state in the different countries. It can be expected that the degree of income levelling through taxation and social security will be greatest in the social-democratic welfare states, followed by the Netherlands and the corporatist welfare states, with the liberal states bringing up the rear.

This chapter examines whether this relationship between the nature of the welfare state and the degree of income levelling actually exists. First of all it was observed that, on theoretical

grounds, this relationship is less self-evident than it appears at first sight: a smaller social security system in the liberal welfare states is accompanied by a stronger concentration of benefits on the poorest households, and thus a relatively strong redistribution from high to low incomes. As regards tax and social insurance contributions, it is notable that a high average tax burden is frequently associated with a high degree of progressivity, but this picture can be distorted because the same need not necessarily apply for social insurance contributions and because the share of direct taxation in total tax revenues can vary between countries.

This lack of theoretical uniformity in the correlation between the welfare state type and the degree of income levelling is confirmed by the empirical material presented in this chapter. Table 4.8 compares the expected ranking on the basis of the hypothesis formulated earlier with the actual ranking in practice. Contrary to expectations, it is not the social-democratic Sweden or Denmark which top the ranking, but the corporatist Belgium and Germany. In terms of the degree of income redistribution, no systematic differences are found between the social-democratic and corporatist welfare states. It should be noted here, however, that the degree of income redistribution through taxation and social security is probably underestimated for Sweden because no data are available on social insurance contributions. It is thus not impossible that the degree of income levelling in Sweden is in reality greater than in Belgium, putting Sweden at number one in the rankings. One finding which is in line with the hypothesis is that income differentials are reduced the least through social security and taxation in the liberal welfare states. The United Kingdom shows a closer resemblance to a corporatist or social-democratic welfare state than a liberal system in this respect, however.

Table 4.8 Ranking of countries by (decreasing) degree of income levelling, based on the hypothesis and on empirical research

country	hypothesis	actual
Sweden	1 / 2	2 / 3
Denmark	1 / 2	4
Norway	3	7
Netherlands	4	5
Germany	5 / 6	2 / 3
Belgium	5 / 6	1
Canada	7 / 8	8
United Kingdom	7 / 8	6
Australia	9	9
United States	10	10

Source: LIS; CBS (IPO'96) SCP treatment

The fact that the expected distinction between the social-democratic and corporatist welfare states is not found must be explained from the strong influence of the extent of social security benefits on the degree of income redistribution. In view of the passive nature of the corporatist welfare states, many households in these countries are dependent on benefit. In addition, the ageing of the population impacts on the extent of social security spending. The degree to which social security benefits are regressive, i.e. mainly help households with the lowest primary incomes, does not however diverge widely between the different countries. Moreover, the regressiveness of benefits is relatively high in the liberal states and relatively low in the social-democratic welfare states.

Income redistribution through taxation and social insurance contributions has a much smaller

impact, so that the differences between the countries as regards the average tax burden and the progressivity of levies prove to be not terribly important. The high position of Germany in the ranking is however due to the strong levelling effect of the tax and social insurance levies. The low position of the social-democratic Norway is explained by the low level of social security expenditure in combination with the limited regressivity of social security benefits. In terms of income redistribution, the United Kingdom turns out not to be a pure liberal welfare state; the extent of social security expenditure is not much lower than in the corporatist and social-democratic countries, so that the redistributive effect of social security is no lower than in Germany. The average tax burden in the United Kingdom is however significantly lower than in the corporatist and social-democratic countries.

In conclusion, it can be stated that there is a clear dividing line in terms of the effect on income redistribution of the welfare state between the social-democratic and corporatist countries on the one hand and the liberal welfare states on the other. Within the group of social-democratic and corporatist countries, however, no clear relationship exists between the type of welfare state and the degree of income redistribution. The explanation for this is that income redistribution through tax and social levies and social security benefits is determined to a much greater extent by differences in the extent of social security spending and the average tax burden than by differences in the structure of the social security system or the tax regime. A classification of welfare states based on the extent of social security spending therefore provides just as great an insight into redistribution as the more refined typology employed by Esping-Andersen on the basis of factors such as the structure of government organisations and arrangements in the areas of labour market and social security.

The foregoing begs the question of whether countries with a large welfare state are not also countries where the social security and tax systems have a relatively strong distorting effect on primary incomes. If large welfare states were the cause of an increase in primary income inequality (e.g. due to an increase in the number of economically inactive people with a primary income of nil), then the actual redistributive effect of these welfare states could be significantly lower than would appear from the above figures. As commented earlier, it is not possible on the basis of earlier research to establish whether this is actually the case. Nevertheless, chapter 6 will look in more detail at the possible trade-off between income levelling and (average) income level.

Notes

- 1 Different measures for the progressivity of the tax system are discussed by Jakobsson (1976).
- 2 Another way of expressing the progressivity or regressivity and proportionality of the tax system is: if the elasticity of the amount of tax payable in relation to income is greater than 1, the system is progressive; if the elasticity is lower than 1, the system is regressive; and if the elasticity is equal to 1, the tax system is proportional.
- 3 An alternative approach, which is also followed in the literature, is to take the distribution of disposable incomes as a starting point and then to investigate how this distribution arose from the primary income distribution.
- 4 More precisely, the Gini coefficient is equal to twice the area between the 45-degree line and the Lorenz curve, where the length of the axes is set at 1. In the event of full income equality, the 45-degree line and the Lorenz curve coincide, so that the area between them is nil. In the event of maximum income inequality, where all income falls to one person, the Lorenz curve takes the form of a reversed L, whose horizontal segment coincides with the x-axis. The area of the segment (in this case a triangle) between the 45-degree line and the Lorenz curve is then equal to 1/2 and the Gini coefficient has a value of 1. The mathematical formula of the Gini coefficient is given in the appendix to chapter 5.
- 5 What we are concerned with here is the ratio of the difference between the inequality of primary incomes and gross incomes on the one hand and the difference between the inequality in gross incomes and disposable incomes on the other.

5 INCOME INEQUALITY

This chapter focuses on the inequality in the distribution of disposable income. First the chapter presents a brief summary of earlier international comparative research in this field and of the hypotheses which will be tested here (§ 5.1). This is followed by a brief outline of the way in which income differentials are measured in this chapter (§ 5.2). Separate sections then look at three variants of income inequality in the eleven countries (§ 5.3-§ 5.5).

5.1 Earlier research and hypotheses

Earlier analyses of the LIS data indicate that there are considerable differences in income inequality between Western countries. Atkinson et al. (1995: 58), for example, conclude that: 'While bearing in mind the problems of comparability which remain, the evidence clearly depicts the Scandinavian countries, Benelux and Germany as exhibiting the least relative inequality. The highest levels of relative inequality are recorded in the United States, Switzerland and Ireland.' (See also Smeeding et al. 1990; and Smeeding and Coder 1993). On the basis of another database, too – the European Community Household Panel (ECHP) for 1994 – relatively wide differences in income inequality are found between the countries of the European Union, though the grouping of countries is slightly different. Within the 13 EU member states studied, the level of inequality is found to be lowest in Denmark and the Netherlands. Belgium and Luxembourg form an intermediate group together with Germany, Austria and France. Inequality is most pronounced in the United Kingdom, Ireland and the southern member states. Within the EU, the differences between rich and poor are greatest in Portugal (EC 1998).

Gottschalk and Smeeding (1998) combine recent data from LIS and national statistics to investigate the trend in income inequality in OECD member states. For many countries they observe a U-shaped trend in the last three decades: falling income inequality up to the end of the 1970s, rising inequality in the 1980s. This pattern is particularly marked in the United Kingdom, but can also be observed in the Netherlands, Sweden, Taiwan, Norway and Italy. The trend is slightly less pronounced in France, Japan, Ireland and the United States. In the latter country, moreover, the turning point is situated ten years earlier: the Gini coefficient in the United States begins to rise in 1969. There are three countries in which the U-pattern is not found. Germany shows no fall in inequality after 1972, while inequality increased from the mid-1980s onwards; Canada shows few fluctuations in inequality in all years; and in Finland income inequality declined up to 1985, to be followed by a period of stability.

According to Gottschalk and Smeeding, the trends in the 1990s diverge. In the countries studied here, they highlight the following trends:

- Inequality in the United Kingdom and the United States initially increased in the 1990s to reach a high point (in 1993 and 1994, respectively), before falling back thereafter. In Norway, too, the rise in inequality turns into a fall in the final year of measurement (1995). The start of a tilted S-shaped pattern can be observed in these countries.
- In Germany, France and Sweden, the trend rises uninterrupted; the end of the U-curve has not (yet) been reached.
- In Canada and the Netherlands the degree of inequality appears fairly stable in the first half of the 1990s. For Canada this constitutes a continuation of the trend in earlier years, while for the Netherlands it represents a levelling off (not a reversal) of the U-curve.

Gottschalk and Smeeding do not report any figures for Belgium, Denmark and Australia for the 1990s. Their findings for the Netherlands correspond with the results of the official income statistics compiled by Statistics Netherlands (CBS): income inequality falls from the middle of the 1960s until 1985, then rises fairly sharply in the second half of the 1980s and stabilises in the 1990s (see Trimp 1996; De Kleijn 1999: 26). The reason for the sharp rise in income differentials at the end of the 1980s lies primarily in the fact that the level of social security benefits remained more or less unchanged after 1985, whereas earnings from employment improved as a result of the economic recovery (cf. SCP 1998: 445). The large group of people who were unemployed, in receipt of benefit or disabled did not share in the increasing prosperity in that period, although the purchasing power of benefits was maintained.

This analysis does not seek to replicate these findings. As indicated in chapter 3, this study focuses on a specific hypothesis:

The inequality in secondary income is greatest in the liberal countries, lowest in the social-democratic group. The corporatist countries occupy an intermediate position, fairly close to the social-democratic cluster.

It was noted in chapter 3 that the differences in inequality in secondary income are a function of the inequality in the primary income distribution and the degree of redistribution. This would suggest that the inequality in disposable incomes is greatest in the liberal countries, because the primary income distribution in those countries was supposed to be more unequal and the degree of redistribution lower. Conversely, it was assumed that the social-democratic welfare states would show relative equality, because the degree of primary income inequality is low (due to the extensive legal protection of employees and a strong negotiating position on the part of trade unions) and the degree of redistribution high.

Chapter 4 has shown that the reality is somewhat different. Although there are differences in primary income distribution, these distributions do not vary systematically according to the three types of welfare state. The degree of redistribution does to some extent tally with the theoretical expectation, although the distinction between the social-democratic and corporatist countries does not emerge clearly. The combination of these findings – no systematic pattern in primary differences, some pattern in redistribution – provide sufficient grounds to maintain the original hypothesis on income inequality. It can be noted in advance that, based on the results of the previous chapter, it is doubtful whether the threefold division will become clear in terms of inequality. So far, however, we have not looked at the inequality in terms of welfare, i.e. the income differentials after allowance has been made for the divergent needs of households. This is the subject of this chapter, and could produce a rather different picture.

A subsidiary question in this chapter relates to the differences within the three country clusters. Do these correspond with the deviations from the ideal characteristics of the type of welfare state to which they belong (cf. figure 2.1)? This comes down to a test of the following subhypotheses:

- *Income inequality in the liberal cluster is greatest in the United States, followed at a fairly short distance by Australia. Canada and the United Kingdom have the lowest degree of income inequality.*
- *In the social-democratic welfare states, the income inequality in Norway is greater than in*

Sweden and Denmark. The corporatist countries show virtually no difference in terms of income inequality.

- *In the Netherlands, the degree of income inequality lies midway between that of the social-democratic and corporatist welfare states.*

This chapter contains a number of measurement differences compared with the earlier LIS studies on income inequality – including the analysis in the *Social and Cultural Report 1992* (SCP 1992: 401-420). In the first place, the country selection is different: this study focuses on the countries which are more or less typical of the liberal, social-democratic and corporatist systems. Moreover, a different database was used for the Netherlands from that used in the earlier LIS studies (the Income Panel Survey instead of the Socio-economic Panel Survey or the Supplementary Provisions Survey). This has the advantage that the same source is used as that employed by CBS in compiling the official time series for inequality in the Netherlands (see for example De Kleijn 1999). To enhance the international comparability, however, the definitions do differ on a number of points from the usual CBS classifications. Finally, to some extent different operationalisations of inequality are used from those used in earlier LIS surveys, and a somewhat wider range of inequality criteria is discussed. This latter point is also a difference compared with the previous chapter, where redistribution was discussed on the basis of the Gini coefficient. The non-standardised inequality in the disposable income distribution, which is the result of the process of redistribution, is the starting point for this chapter. In addition, the chapter will look at income inequality after standardisation, so providing an insight in to the differences in welfare between households in the various countries.

5.2 Measuring income inequality

There are many ways of measuring income inequality; Coulter (1989) and Van der Hoek (1996) give a wide summary of the options. This analysis focuses on inequality in disposable (or secondary) incomes in the different countries, defined in the previous chapter as income from wages, enterprise or assets,¹ after deduction of direct taxes and social insurance contributions (including health care insurance), and augmented by the income transfers received (in particular social security benefits, child benefit, collective study grants and housing benefit).

Differences in primary and gross income are left out of consideration here; these were discussed in the previous chapter. The influence of indirect taxes (such as VAT) is also ignored, as is tertiary income; the Luxembourg Income Study (LIS) does not contain reliable information on these topics.

Inequality in the distribution of disposable incomes can be studied in various *types of distributions*. The starting point here is the uncorrected distribution of disposable incomes of households, as broadly mapped out in table 4.5 on the basis of the Gini coefficient. This is the directly measurable distribution, as it occurs empirically in the various countries. One objection to this method is that it does not say everything about the inequality in the *welfare position* of households. Suppose two households, a single person and a family with four children, have the same disposable income, and occupy the same position in the non-standardised income distribution. No allowance is then made for the fact that costs in the large family are higher (food, sustenance, housing, etc.). In order to achieve the same level of welfare as the single-person household, the six-person family generally needs a higher income.

It is therefore usual to *standardise* incomes. In this procedure, disposable incomes are multiplied by a certain factor which depends on family composition. The incomes are thus reduced to welfare levels of a standard household, often with single persons as the reference point. Ranking households on the basis of the recalculated income then produces the standardised income distribution.

A good deal has been written about standardisation using such equivalence factors (cf. Buhmann et al. 1988). In Dutch research – see for example the analyses in the *Poverty Monitor* which is published annually by SCP and CBS – empirical equivalence factors are often used, which CBS derives from budget surveys. Because it cannot simply be assumed that these factors are also applicable for other countries – the structure of the household budget may differ widely between countries – this would appear to be a less appropriate method for an international comparative analysis.

Instead, two usual standardisation methods are used here: the modified² OECD scale and the \sqrt{n} -scale. In the OECD method, the first adult in a household is accorded a weight of 1, and each subsequent adult a weighting of 0.5, while children are given a weighting of 0.3. Dividing the disposable income by the sum of these weightings reduces that income to the welfare level of a single person. With the \sqrt{n} -scale method, disposable income is divided by the square root of the number of members of the household. Table 5.1 shows how the two standardisation methods work out for a number of family types.

Table 5.1 Two methods of standardisation^a

household type	no. of persons	OECD method	\sqrt{n} method
single adult	1	1.00	1.00
two adults	2	1.50	1.41
single-parent family, 1 child < 18 years	2	1.30	1.41
single-parent family, 2 children < 18 years	3	1.60	1.73
two adults, 1 child < 18 years	3	1.80	1.73
two adults, 2 children < 18 years	4	2.10	2.00
three adults	3	2.00	1.73

a The income is standardised to the level of a single person by dividing it by the equivalence factors stated.

One objection to both methods is that they take no account of the economies of scale which occur in reality in the various countries. In one country it may for example be much more difficult for, say, a family with two children to make ends meet than in another country, depending on the prices of the primary needs of life, the tax and social insurance levies and the rights to collective provisions (education, health care, child benefit). To date, however, there have been no international comparative equivalence factors with an empirical basis, although the data from the Household Budget Surveys carried out by the European Union do offer possibilities in this respect. For the Netherlands, it has been calculated that using the OECD method leads to different findings than the empirical CBS equivalence scale (see SCP/CBS 1998: 32-58).

A second objection is that both standardisation methods are fairly crude in the way they deal with economies of scale. The OECD scale assumes that all adults (apart from the first) and all children cost the same, ignoring the fact that additional economies of scale can sometimes occur with 'later' adults and children (e.g. because younger children can use the clothes, toys,

etc. of the older children). Although the \sqrt{n} -scale does incorporate such a differentiation, no distinction is made between the costs of adults and children: a couple without children and a single-parent family with one child have the same scale factor.

Standardisation reduces the incomes to the welfare level of households. One possible objection here is that not all inhabitants of a country have the same weight in determining income inequality. Because the household is the analytical unit, the welfare position of someone living in a family with four members weighs less heavily in determining the total inequality than the welfare position of a single person. This problem is often resolved by attributing the standardised household income to all family members: the 'household disposable income per equivalent adult'. This means that people always count fully in determining the level income inequality, irrespective of the type of household to which they belong. This 'per capita' apportionment of standardised household income provides a better insight into the welfare of the total population, though the weighting factors within households are still open to discussion.³

This chapter looks at inequality in *relative* terms. This means that the absolute differences in income levels which are associated with the fact that the average level of welfare in, say, the United States is much higher than in the Netherlands, are not the central focus. The inequality criteria which are used here are not sensitive to absolute differences.

Because of the difficulty of ranking income distributions uniformly in graphic form, it is usually to express inequality in the form of an indicator. The very clarity of such *inequality indicators* – numbers which can be used to assess whether one country is more unequal than another – is however at the same time their weakness. It is not in reality easy to express all aspects of income inequality (dispersion, peaks, skewness, polarisation) in a single figure, and choosing a particular indicator inevitably places a heavier accent on certain aspects of the distribution. Some indicators are sensitive to changes in the upper or lower range of the distribution (e.g. the Theil coefficient), while in others it is the differences in middle incomes which weigh rather heavily (e.g. the Gini coefficient). Jenkins (1991) comments in this regard: 'All inequality measures, even ones related to apparently objective diagrams, inevitably involve value judgments of various kinds, and (...) some of these implicit assumptions are not necessarily desirable.' Because certain elements of the distribution are emphasised, it is possible that two indicators may suggest differing degrees of inequality when used on the same income distribution; or conversely, that different indicators detect the same degree of inequality in differing income distributions.

Given that the aim here is a robust assessment of the differences in income inequality between countries, this chapter uses seven measures of inequality. Appendix B5.1 to this chapter gives the exact definitions and indicates the aspects of the income distribution to which the various measures are sensitive (see also Champernowne 1974; Coulter 1989; Jenkins 1991).

In order to be able to test the hypotheses, the countries must be ranked in terms of income inequality. Because there is no one indicator which does this uniformly, it was decided to carry out a meta-analysis of income inequality using a number of indicators. A correspondence analysis (Anacor) was performed on the matrix of seven inequality indicators and eighteen observations (eleven countries, with several measurement points for some).⁴ This analysis results in a two-dimensional graph, in which countries and indicators which showed many correspondences are placed close together, while countries and criteria which have little in common are positioned far apart. The graphs presented are comparable with that used for the typology in chapter 2 (figure 2.1). The first dimension (the x-axis) shows how countries relate

to each other in terms of income inequality across all indicators. The second dimension (the y-axis) shows the extent to which specific indicators produce a differing ranking of countries. In the scaling, the scores of countries and indicators are transformed in such a way that the general average of the countries and indicators, respectively, on the two axes is equal to 0 with a standard deviation of 1. Appendix B5.2 to this chapter contains the original coefficients.

5.3 The non-standardised income inequality

Figure 5.1 shows the results of the correspondence analysis across the seven indicators for inequality in the non-standardised disposable household incomes in eleven countries. Two measurements are available for Germany, the United States, Canada, the United Kingdom and Norway, while there are three for the Netherlands. The scaling of the indicators on the first axis is identical in all cases: the arrows all point in the same direction. The horizontal axis can therefore be regarded as a generalisation of the ranking of countries by income inequality in accordance with the seven indicators. The second dimension indicates:

- which indicators deviate from this general picture; in figure 5.1 this is most markedly the case for the relative interquartile distance;⁵
- in which countries the deviations on those indicators occur. The high scores of Denmark and Sweden on the second dimension are mainly the result of the fact that the inequality in these two countries is relatively higher according to the relative interquartile distance than according to the other indicators. Appendix B5.2 shows that on the basis of the relative interquartile distance, Denmark is actually the country with the highest degree of non-standardised income inequality, and that the distribution in Sweden is also significantly more unequal than according to the other indicators.

The ranking on the horizontal axis shows that income inequality, as expected, is greatest in two liberal countries, the United Kingdom and the United States. In the former country income inequality declines in the first half of the 1990s, whereas in the United States income inequality rose further during that period. This is consistent with the findings of Gottschalk and Smeeding (1998).⁶ The United Kingdom (1991) emerges from the analysis as the most unequal, followed at a fairly short distance by the United States (1994). Appendix B5.2 shows that on the separate inequality indicators both observations three times have the highest score. Particularly as a result of the fairly wide difference on the variation coefficient, where the United States achieves a relatively 'equal' score, the 1991 measurement year for the United Kingdom occupies the most extreme position on the horizontal axis.⁷ Based on the most recent observations (1994/1995), however, the degree of inequality in the non-standardised disposable income distribution in the United States is greater than in the United Kingdom.

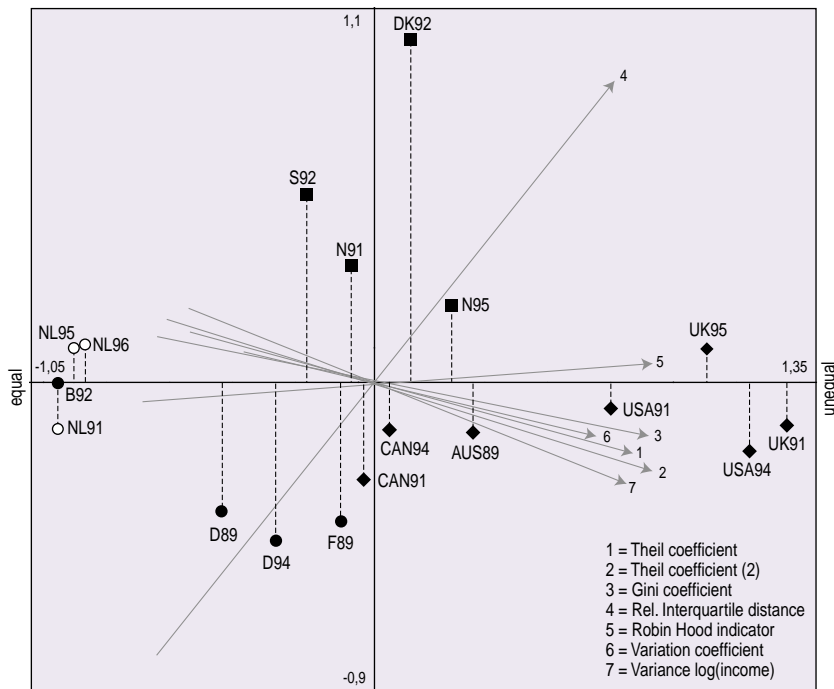
Two other liberal welfare states, Canada and Australia, fit less easily into the expected pattern. Although they show a fairly high degree of income inequality, this is not much higher than in most other countries. Canada and Australia are positioned fairly close to the source (the general average of the correspondence analysis). As found by Gottschalk and Smeeding (1998), the inequality in Canada remains virtually stable throughout the 1990s, with most indicators pointing to a very slight increase.

If we look at the other side of the horizontal axis, we see that it is not, as might be assumed, the social-democratic countries which have the least income inequality, but Belgium and the Netherlands. Without standardisation of the income, all inequality indicators reach their lowest

values in the Low Countries. Belgium and the Netherlands are therefore placed peripherally on the horizontal axis, clearly separate from the other countries. The appendix shows that Belgium (1992) and the Netherlands (1991) both score the lowest on three of the separate inequality measures. In later years (1995 and 1996) a very slight increase in income inequality takes place in the Netherlands.

Germany, Sweden, France, Denmark and Norway form part of a broad middle group, to which Canada and Australia might also be added (although according to most indicators these latter two countries have slightly more inequality). Contrary to expectations, the degree of inequality in corporatist countries – and particularly in Germany – is lower than in the social-democratic countries. The level of income inequality in Germany increased between 1989 and 1994, in line with the findings of Gottschalk and Smeeding (1998), and also in line with the effect that would be expected from German reunification.⁸ Norway also undergoes a fairly steep increase in income inequality between 1991 and 1994. The reversal which is reported by Gottschalk and Smeeding (1998) is not observed here.⁹

Figure 5.1 Inequality in disposable household income (non-standardised)^a



a Correspondence analysis across seven inequality indicators and 11 countries, various years.

Source: LIS; CBS (IPO'91, '95, '96)

All in all, the ranking of countries by income inequality with no standardisation is not in line with expectations. Figure 5.1 shows a threefold division: two liberal countries, the United

States and the United Kingdom, display the greatest degree of inequality; a corporatist (Belgium) and a hybrid (Netherlands) welfare state have the lowest degree of inequality in non-standardised disposable incomes; and the other countries are situated between these two extremes. Broadly speaking, the degree of inequality in this middle group is lowest in the two corporatist countries (Germany and France) and greatest in the liberal welfare states (Canada and Australia). Our main hypothesis is therefore confirmed only partially, as table 5.2 also shows. There is no clear grouping of the three types of welfare state, in which the social-democratic countries are the least unequal, followed at some distance by the corporatist welfare states, and with the highest degree of inequality in the liberal countries.

In countries for which several measurement years were included in the analysis, the trend is not uniform. The United States, Norway and Germany show a clearly increasing level of income inequality. The Netherlands and Canada show a very slight increase, while the income inequality in the United Kingdom reduces markedly.

Table 5.2 Ranking of countries by increasing degree of income inequality (hypothetical and on the basis of empirical data)

country	hypothesis	actual ranking 1st dimension
Sweden	1 / 2	4
Denmark	1 / 2	8
Norway	3	6-8 á 9
Netherlands	4	1/2
Germany	5 / 6 / 7	3
Belgium	5 / 6 / 7	1/2
France	5 / 6 / 7	5
Canada	8 / 9	7
United Kingdom	8 / 9	10/11
Australia	10	9
United States	11	10/11

Source: LIS; CBS (IPO'96)

As regards the subhypotheses – the ranking of countries within the empirical clusters of Esping-Andersen's typology – the findings are also not entirely in line with expectations. In the liberal welfare states, the high degree of income inequality in the United States and the relatively low inequality in Canada are as expected. Australia comes in at a somewhat greater distance from the United States than might be expected on the basis of figure 2.1, but is still positioned between these two countries. The high degree of income inequality in the United Kingdom (especially in 1991) is however entirely contrary to the theoretical expectations. Among the social-democratic countries, the level of income inequality in Norway in the early 1990s is midway between that in Denmark and Sweden. It is thus not significantly greater, as was assumed. Based on the measurement in 1995, however, Norway is the most unequal country within the social-democratic group. Since it is possible that the inequality in Sweden and Denmark increased in a similar way in this period, it would be going too far to regard the subhypothesis as confirmed.

In the corporatist group, finally, the diversity is greater than assumed. Belgium is much less unequal than Germany and France; and there are also considerable difference between the two latter countries, especially in 1989, the only year for which direct comparison is possible. The homogeneous nature of the corporatist welfare states as it emerged from figure 2.1 is thus not reflected in the degree of income inequality.

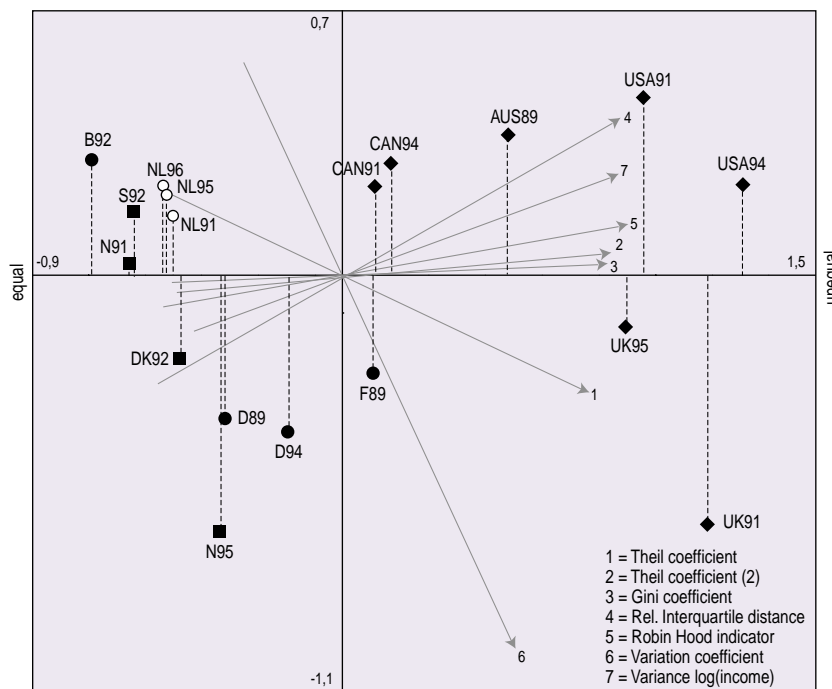
5.4 Income inequality after standardisation

The previous section described the actual income differentials between households in the various countries. However, this still does not give us a good picture of the welfare position of households, since it takes no account of the economies of scale of different types of household. This is even more problematic in a comparison between countries, because the demographic structure can also diverge. For example, if two countries have an identical income distribution, but there are more single persons or large families in one country than in the other, the inequality in relative welfare will not be the same. Standardisation offers a solution to this problem to some extent, although it was noted in section 5.2 that choosing a standardisation procedure is a fairly arbitrary business in international comparisons – hence the use of two equivalence scales here, the modified OECD method and the \sqrt{n} -method. These standardisations do not correct for all relevant differences in welfare or demographic structure, however, because only the household composition is considered and no allowance is made for differences in age, gender and the like (retired/not retired, young or older children, etc.). Compared with the non-standardised distribution, standardisation often leads to a reduction in income differentials. However, this is not an incontrovertible law: if the relationship between household type and income in a given country is inverse (i.e. if household income reduces as the household size increases, something which is imaginable in third-world countries, for example), then the standardised inequality will be greater than the non-standardised inequality. Appendix B5.2 however shows that here, too, standardisation leads to lower values for the separate indicators; in other words, income differentials reduce across the board. Generally, the effect of standardisation is stronger as the household composition in a given country becomes more heterogeneous. If all households are the same size (whether they are single-person households or large families), standardisation by definition has no effect. It is therefore not the case that standardisation has a stronger impact if there are more large families in a given country. This might be the intuitive expectation, because the effect of standardisation at micro-level is much greater with large families.

Figure 5.2 shows the results of the correspondence analysis of the distributions, standardised using the OECD equivalence factors. All inequality indicators on the first dimension again point in the same direction. This can therefore be described as a generalisation of income inequality, as was envisaged. On the second dimension, the spread of the indicators is somewhat greater than in figure 5.1 – though it is remarkable that the relative interquartile distance produces a much less varied ranking than in the non-standardised distribution. It is positioned near a number of other indicators, because Denmark and Sweden no longer deviate markedly from the general pattern after standardisation. The variation coefficient now produces the ranking with the most deviations. Again, this is largely attributable to the score of the liberal countries (with the exception of the United Kingdom), which achieve a relatively less unequal score on the variation coefficient than for the other indicators. In addition, Norway deviates to a greater extent from this indicator in 1995 than in the non-standardised distribution. In both cases the variation coefficient has a relatively high value, but on the other

indicators Norway becomes relatively less unequal in 1995 after standardisation, so that in the standardised distribution there is a greater anomaly on the variation coefficient. The first Theil coefficient also deviates slightly from the general pattern on the second dimension. This is caused by the fact that the United Kingdom (1991) is clearly the most unequal country according to this indicator, something which otherwise only occurs – and to a relatively much greater degree – for the variation coefficient. Since the variation coefficient has a deviating pattern on the second dimension (in contrast to the non-standardised distribution, where the relative interquartile distance dominated the second dimension), the United Kingdom (1991) and the first Theil coefficient acquire a more peripheral value on the y-axis.¹⁰

Figure 5.2 Inequality in disposable household income (standardised, OECD method)^a



a Correspondence analysis across seven inequality indicators and 11 countries, various years.

Source: LIS; CBS (IPO'91, '95, '96)

The standardisation has changed the ranking of the countries on the first dimension. The biggest movement has taken place among the social-democratic countries, which together with Belgium and the Netherlands now form the least unequal group. Sweden and Norway (1991) in particular have become much less unequal. These countries are positioned between Belgium – the least unequal country observed – and the Netherlands. Belgium is also the least unequal country when measured by the individual coefficients, with the exception of the relative interquartile distance (Norway 1991). The three Dutch measurements follow Belgium at some distance; the Netherlands is not the least unequal country by any indicator. As in the non-

standardised distribution, the difference between the three measurement years is small: according to most of the indicators, inequality in the Netherlands declines very slightly after 1991 following standardisation.

The level of inequality in Denmark is roughly comparable with that in the Netherlands. This is not due entirely to the fact that the score on the relative interquartile distance has become less extreme: on the basis of the other indicators, too, Denmark has become relatively less unequal than in the non-standardised distribution.

The increase in income inequality in Norway between 1991 and 1995 is also found in the standardised distribution; in the latter measurement year, the level of inequality is comparable with that in Germany in 1989. The two German measurement years also indicate an increase in income inequality in the early 1990s. Despite this, the gap between Germany and France widens after standardisation. Appendix B5.2 shows that the difference in inequality between these two countries is greater on all separate indicators after standardisation than before.

The two measurement years for Canada indicate a very slight increase in income inequality between 1991 and 1994, as in the non-standardised distribution. This increase occurs according to all indicators, with the exception of the variation coefficient, which remains unchanged.

Australia more clearly occupies an intermediate position than in the non-standardised distribution. The United Kingdom and the United States remain the countries with the most inequality after standardisation, though the level of inequality decreases in the UK in the first half of the 1990s and increases in the USA. The main difference compared with the non-standardised distribution is that the United States (1994) is now the most unequal observation, not the United Kingdom (1991). The appendix shows that according to the majority of indicators the inequality after standardisation is greatest in the United States, and that the difference relative to the United Kingdom (1991) is greater than in the non-standardised distribution. Based on the first Theil coefficient and the relative interquartile distance, the United Kingdom remains the most unequal country after standardisation in the early 1990s, though the difference compared with the United States (1994) is smaller than in the non-standardised distribution. The variation coefficient is an exception: this is the only indicator on which the United Kingdom (1991) is both the most unequal country after standardisation and where the difference relative to the United States (1994) is greater than in the non-standardised distribution. This is of no significance in the correspondence analysis, however.¹¹

The conclusion is that, after standardisation using the modified OECD scale, the main hypothesis is still not fully confirmed but that the ranking of countries does come more into line with expectations. The social-democratic countries are now in the least unequal group, but share this position with the Netherlands and Belgium, with the latter clearly having the lowest degree of inequality. In the comparable measurement years (1991/1992), the subhypothesis that Norway has the greatest degree of inequality of the social-democratic countries is not confirmed. The increase in inequality does however mean that in 1995 Norway to some extent slips out of the 'leading group' of relatively equal countries.

Germany and France more clearly occupy an intermediate position than in the non-standardised distribution. The differences between the two countries are however fairly large. The high degree of equality in Belgium, and the fairly high degree of inequality in France, do not justify the conclusion that corporatist welfare states as a whole occupy an intermediate position, at a fairly short distance from the more equal social-democratic countries.

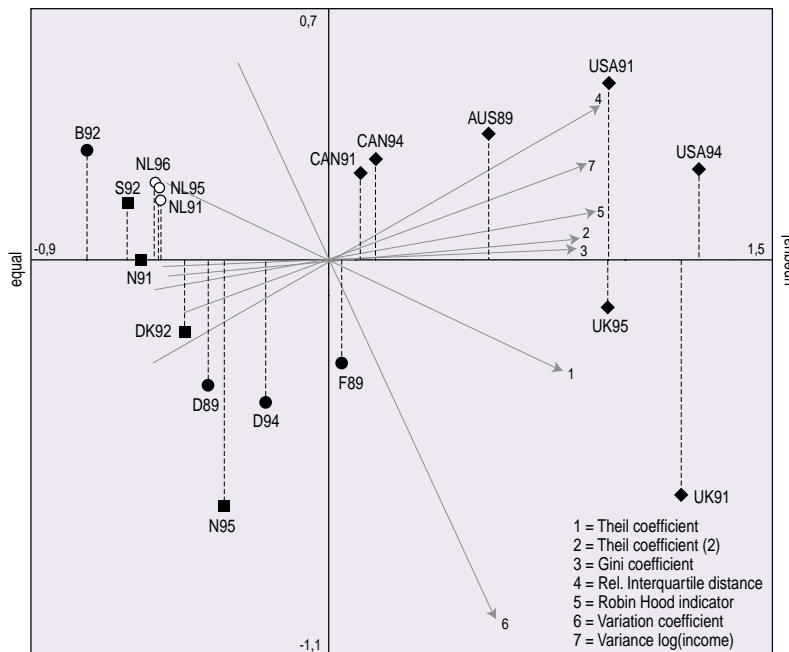
The liberal countries do emerge clearly as the most unequal. The degree of inequality in Canada is not very high, however, and is comparable with that found in the most unequal

corporatist country, France. The positions of Australia and the United States are in line with expectations, but this does not apply for the United Kingdom. Although the inequality in the UK is less extreme than in the non-standardised distributions, it is nevertheless higher than expected. Even after standardisation, the distance from Canada is much greater than was assumed on the basis of the empirical typology of characteristics of the labour market and social security system.

To ascertain whether the findings are sensitive to the method of standardisation, another method, the \sqrt{n} -scale, was applied to see whether this produced different results. Figure 5.3 shows that the results are virtually the same. Although the separate coefficients are generally a fraction higher than when using the modified OECD scale, the correspondence analysis produces a virtually identical picture, both in terms of the scaling of coefficients and in the ranking of countries by inequality on the first dimension. There are five minor differences compared with the standardisation using the OECD method:

- Norway (1991) is now slightly more unequal than Sweden, and Norway (1995) is somewhat more unequal than Germany (1989);
- the inequality in the Netherlands shows even less variation between the three measurement years in the 1990s;
- Denmark and the Netherlands lie slightly further apart;
- the difference between France (less unequal) and Canada is slightly greater;
- the inequality in the United States (1991) is identical to that in the United Kingdom in 1995.

Figure 5.3 Inequality in disposable household income (standardised, \sqrt{n} method)^a



a Correspondence analysis across seven inequality indicators and 11 countries, various years.

Source: LIS; CBS (IPO'91, '95, '96)

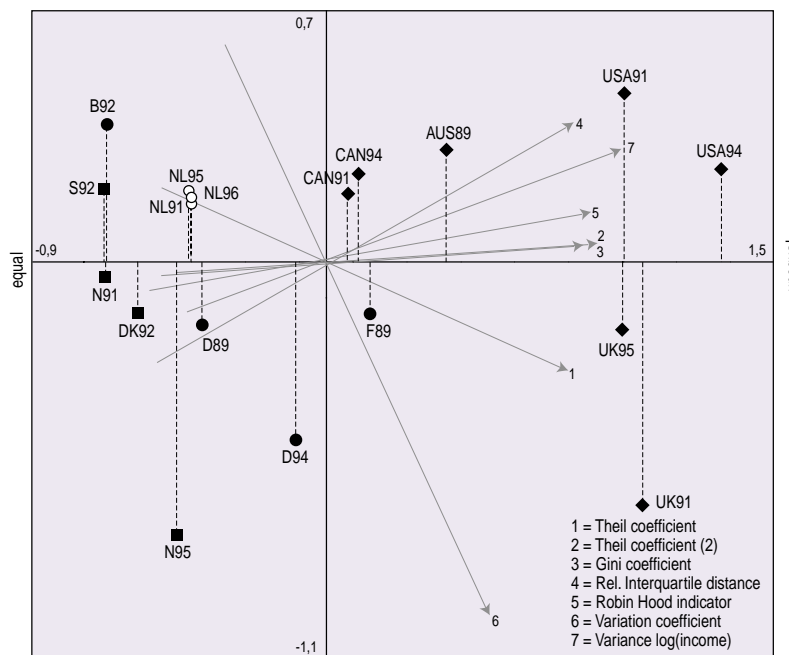
5.5 Income inequality measured per equivalent adult

It was noted earlier that if inequality is measured on the basis of the income distribution of households, the welfare position of a person living in a larger household weighs less heavily than that of a single person household, and that this can be resolved by calculating the 'household disposable income per equivalent adult'. The standardised household income is apportioned to all family members by duplicating observations in proportion to the number of family members. This method is used in this section with the same two standardisation methods as in the previous section.

In principle, apportioning household income to all members of the household can lead to both an increase in income differentials (because a greater spread is introduced) and to a reduction (because observations are duplicated, the distribution becomes more uniform). In general, apportioning household income to individuals leads to a fall in income inequality if the income spread of the (duplicated) households is smaller than for single persons. The degree of income inequality, by contrast, increases if the income dispersion among multiple-person households is greater than among single persons.

Figure 5.4 shows the income inequality after apportionment of household income to all members of the household (including children), standardised using the modified OECD method. Although not spectacular, there are nonetheless a number of differences compared with figure 5.2. These differences do not relate so much to the inequality indicators – which are scaled virtually identically in both figures – as to the ranking of countries.

Figure 5.4 Inequality in disposable household income, after apportionment to individuals (standardised, OECD method)^a



a Correspondence analysis across seven inequality indicators and 11 countries, various years.

Source: LIS; CBS (IPO'91, '95, '96)

All social-democratic countries are relatively less unequal after apportionment of household income to individual household members. They consequently form a fairly homogeneous group, in which the most unequal countries observed (Denmark and Norway 1995) are less unequal than the Netherlands. Belgium also remains egalitarian here, though now has to share its leading position in terms of equality with Sweden and Norway (1991).

From the summary in appendix B5.2 it is apparent that, as a result of apportionment, the individual coefficients have generally reduced compared with the regular standardised distribution. For the social-democratic countries the fall is relatively marked on four indicators (the Gini coefficient, the relative interquartile distance, the variation coefficient and the variance of the logarithm of income). The more egalitarian position of these countries on the first dimension (compared with figure 5.2) can be attributed to the movement in these indicators.

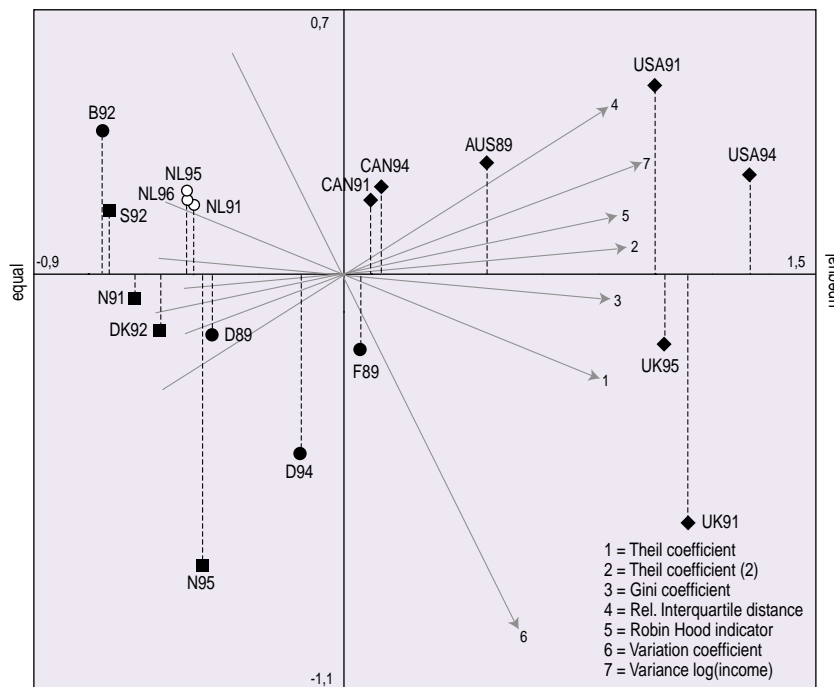
The level of inequality in the Netherlands barely changes: the coefficients remain virtually stable compared with the standardised distribution without apportionment of income to individual household members. This explains a second difference compared with the foregoing section: the shift of the Netherlands in the direction of greater relative inequality, further away from Belgium and the Scandinavian countries, and closer to Germany.

A third difference relates to the increasing inequality in Germany between 1989 and 1994. After apportionment of incomes to individual household members, this increase is somewhat greater than previously (the scores for the two years on the first dimension are slightly further apart). Appendix B5.2 shows that as a result of apportionment the scores in Germany fall more steeply for all coefficients in 1989 than in 1994.

In figure 5.4, on the first dimension France is positioned further from the origin than in figure 5.2, and the degree of income inequality in France is now slightly higher than in Canada. According to virtually all separate indicators, the level of inequality in Canada falls as result of apportionment of income to individual household members by a slightly greater degree than in France. This occurs most markedly for the relative interquartile distance and the variance of the logarithm of income. The variation coefficient forms an exception: here, the fall in France is slightly greater than in Canada. However, this does not compensate for the movement according to the other indicators.

A fifth difference is the decrease in income inequality in the United Kingdom at the start of the 1990s, with a reduction becoming apparent after apportionment to individual household members. From the appendix it can be seen that this reduction in inequality is caused by the fact that the values of the coefficients barely change in 1995 as a result of apportionment of household income to all members of a household, whereas a change does take place in 1991. The differences in the changes in the two years are fairly large, in particular for the variation coefficient and the relative interquartile distance. As in other countries, the degree of inequality in the United Kingdom does not decrease according to all indicators in the first half of the 1990s after apportionment of income to household members.

Figure 5.5 Inequality in disposable household incomes, after apportionment to individuals (standardised, \sqrt{n} -method)³



a Correspondence analysis across seven inequality indicators and 11 countries, various years.

Source: LIS; CBS (IPO'91, '95, '96)

Here once again, the use of a different standardisation method, the \sqrt{n} -scale, leads to only slightly different results (figure 5.5). The individual indicators produce virtually the same score, with slight differences for the Gini coefficient and the second Theil coefficient. Little also changes compared with figure 5.4 in the ranking of countries on the first dimension. Norway is relatively slightly less equal in both years, with the result that the degree of inequality in 1991 is slightly greater than in Belgium and Sweden, and in 1995 Norway is positioned between the Netherlands and Germany (1989). In addition, the apportionment of income to household members makes the income distribution in France slightly more unequal (cf. figure 5.3) but, in contrast to when the modified OECD scale is used, the change is not so great that France overtakes Canada.

After apportionment of the standardised household income to individual household members, the clustering of countries is reasonably in line with expectations. The picture is not fundamentally different from that produced on the basis of earlier LIS measurements (see e.g. the quote in Atkinson et al. 1995 at the beginning of this chapter) and also matches data based on national statistics¹² (see OECD 1997c). The social-democratic welfare states are among the countries with the lowest inequality; the level of inequality is highest in the liberal welfare states, while two of the three corporatist states occupy a position between these two extremes. The degree of inequality in the Netherlands is also in line with expectations: slightly greater than in the social-democratic group, but below the level of Germany and France. The low level

of inequality in Belgium and the fairly high level of inequality in France are not, however, in accordance with the main hypothesis on the ranking of welfare state types.

Little evidence is found to confirm the subhypotheses, which focus on the differences between welfare states of a single type. The level of inequality in Norway at the start of the 1990s is not much greater than in Denmark and Sweden, whereas this was expected to be the case on the basis of figure 2.1. On the other hand, fairly large differences appear between the three corporatist welfare states, which were regarded as a fairly homogeneous group. The relative level of inequality in Germany (especially in 1989) is roughly what would be expected, but Belgium is more equal and France more unequal than was initially supposed. In the liberal group, finally, the expected differences are found for three countries, but the United Kingdom forms a striking exception. Even after apportionment of standardised household income to individual household members, the inequality in the UK is much greater in relative terms than was assumed on the basis of the characteristics of the labour market, social security and tax system.

5.6 Conclusions and discussion

The main hypothesis of this analysis was that the social-democratic welfare states would be the least unequal, followed at a fairly short distance by the corporatist cluster, with income differentials in the liberal welfare states being the most marked. Based on the non-standardised income distribution, however, this hypothesis is not confirmed. A threefold division is found, in which the Netherlands and Belgium clearly display the least inequality, and the United Kingdom and the United States the most. In between is a broad middle group, in which the moderate relative inequality in the social-democratic countries in particular conflicts with the expectations. The high level of inequality in the United Kingdom is not in line with the assumptions based on the empirical typology of countries as set out in chapter 2.

Standardising and apportioning household incomes to all household members provides more support for the main hypothesis. It makes no difference here which method of standardisation is used (the modified OECD scale or the \sqrt{n} method). The social-democratic countries belong to the least unequal group, Germany and France are positioned in the middle, while the liberal countries are the most unequal. As a hybrid, the Netherlands is positioned as expected between the social-democratic cluster and Germany and France. Belgium is the main exception to the expected picture; this country is generally the least unequal and thus does not fit in with the expected corporatist pattern.

The subhypotheses, which are concerned with the ranking within the country clusters, are not confirmed even after standardisation and apportionment. In the social-democratic welfare states Norway, contrary to expectations, is not clearly less unequal than Sweden and Denmark if comparable measurement years are taken as a basis (1991/1992). Although the degree of inequality in Norway increases sharply in 1995, it is possible that the two other countries underwent a similar development during the same period (no information is available for Denmark or Sweden for the mid-1990s). Thus we may not conclude on the basis of these data that Norway occupies a deviating position within this group of countries.

The spread in the cluster of corporatist welfare states is wide. In fact, only Germany (1989) is in the expected position in the ranking by inequality, fairly close to the social-democratic

countries. Belgium, as stated, falls completely outside the expected pattern because of its low level of inequality, while the degree of income inequality in France approaches that of the liberal cluster.

There is also a wide spread within the liberal group of welfare states. The ranking by income inequality does however match the expectations for three of the countries based on their typical welfare state characteristics. Canada has the least degree of inequality, the United States the most, while Australia occupies an intermediate position. Although the level of inequality in the United Kingdom decreases somewhat in the 1990s, and although the UK achieves a less extreme score after standardisation and apportionment than in the non-standardised distribution, the income differentials there are nevertheless much greater than would be expected on the basis of the welfare state characteristics.

All things considered, the main hypothesis based on the theory of Esping-Andersen is largely confirmed in terms of welfare differences – with the position of Belgium as the chief exception – but not in terms of non-standardised income inequality. Since it can be assumed that the welfare state is aimed more at realising a certain level of welfare differentials than at redressing non-standardised inequality, this is a theoretically acceptable distinction: if the opposite result were to be found (i.e. if the typology 'works' for the non-standardised distribution but not after standardisation), this would have been more difficult to explain. Little support is found for the subhypotheses, however. There are few differences in income inequality between the social-democratic countries, whereas these were expected. There are wide differences between the corporatist welfare states, which had not been anticipated. Germany has approximately the expected level of income inequality, while in Belgium it is smaller and in France greater than was expected on the basis of the characteristics of this type of welfare state. Within the liberal welfare states, the ranking is largely as anticipated, but the United Kingdom forms an anomaly.

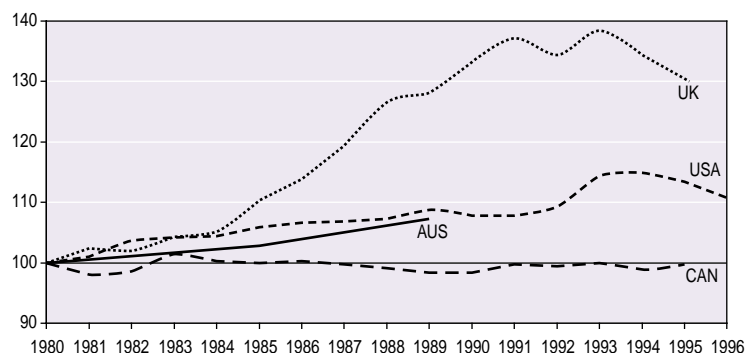
An obvious question, of course, is what has caused the deviations from the expected picture. Without seeking to give the definitive explanation here, it is nevertheless worth discussing the main deviations briefly.

First of all, there is the unexpectedly high degree of inequality in the social-democratic countries in the original income distribution, which disappears after standardisation and apportionment. Further analysis shows that the high scores in the non-standardised distribution – measured against the 'alternative' Theil coefficient – are largely the result of the divergent shares of different household types in the population. For example, more than 40% of the difference in the non-standardised income inequality between Sweden and the Netherlands can be explained by the differing relative proportions of single persons, couples and multiple-person households in the two countries. In Norway and Denmark the figure is approximately 27%. In other words, if the different household types were evenly distributed, the non-standardised inequality in the Scandinavian countries would turn out to be not as far above the level in the Netherlands (and Belgium). This indicates that the ongoing individualisation in the Scandinavian countries influences the degree of income inequality: the high proportion of single persons pushes up the inequality of the non-standardised distribution, because their incomes are often lower than those of couples.

Secondly, there are the strikingly large differences between the corporatist welfare states. As already indicated in section 5.1, however, the data from the ECHP lead to different conclusions on this point than the LIS. According to the ECHP, the Gini coefficient of standardised income after apportionment to individual household members lies around 0.29 for Belgium, Germany and France.¹³ It is unclear what causes the differences between the two data sources, but based on the ECHP data it would seem wise to be slightly cautious regarding the divergent income inequality found in the three corporatist welfare states on the basis of the LIS.

A third striking deviation concerns the high degree of inequality in the United Kingdom, particularly in 1991. This can probably be attributed to the strong neo-conservative tendency of the 1980s which increased income differentials in the UK more than in the other liberal welfare states. Based on the analysis by Gottschalk and Smeeding (1998) this can be empirically substantiated. They observe that the Gini coefficient increased in the United Kingdom by almost 40% between 1970 and 1991, whereas the coefficient in the United States and Australia (up to 1989) rose only by 7% and the level of inequality in Canada remained virtually unchanged. Figure 5.6 shows the development in the four liberal welfare states.

Figure 5.6 Development of the Gini coefficients in the liberal welfare states (index figures, 1980 = 100)



Source: Gottschalk and Smeeding (1998) SCP treatment

If the relative positions within the liberal group at the start of the 1980s are taken as a basis, the United Kingdom is seen to be clearly the least unequal liberal welfare state, followed at some distance by Canada and Australia, and with the United States as relatively by far the most unequal. The whole body of neo-conservative measures in the United Kingdom were probably the reason that the UK overtook the country where the greatest degree of inequality would be expected theoretically – the United States – in the 1980s. Measured by income inequality, therefore, the United Kingdom became 'plus libéral que les libéraux'. In other words, the assumed ranking within the liberal group of welfare states held true at the beginning of the 1980s, but the demolition of the welfare state in the United Kingdom partially distorted this picture.

Notes

- 1 Employers' contributions are also counted in the primary income. The fixed rental value is left out of consideration, however.
- 2 The original OECD scale accorded weights of 1 to the first adult, 0.7 to each subsequent adult and 0.5 to each child. Many regarded these weights as too steep for modern Western countries; they are more appropriate in countries where the primary necessities of life swallow up a large part of the family budget.
- 3 Apportioning the total household income to all members of the household implicitly puts this at 1, whereas it is quite possible that some members derive more welfare from household income than others (e.g. through high personal spending). This issue is however ignored here.
- 4 Since the measurement units of the indicators differ – the lower limit is 0 in all cases, but the theoretical upper limits vary – the original scores were subjected to linear transformation for the correspondence analysis. For each indicator, the most equal country is given a score of 1 and the most unequal a score of 18. The other observations are positioned on this scale in proportion to their distance from the most equal/unequal country on the original indicator. To ensure that a ranking of countries is obtained in terms of inequality the complement of the score is also included in the correspondence analysis, a coding technique known as 'dédoublement' (see Heiser 1981: 133-145).
 The transformation is performed as follows. If the most equal country on the inequality indicator had a score of 0.10, another country 0.50, and the most unequal country 0.90, they would be given the respective scores of 1.00, 9.50 and 18.00. If the values 0.20, 0.40, 0.60 and 0.80 are found on a different inequality indicator, these are transformed into 1.00, 6.67, 12.33 and 18.00. Given the minimum and a maximum values on original coefficients, the rankings are now comparable, something which would not be possible for the untransformed scores because of the unequal upper limits of the coefficients. The 'dédoublement' means that transformed coefficients are included again, but this time at their complementary values (and thus $1 = 18$, $6.67 = 12.33$, $12.33 = 6.67$, $18 = 1$, etc.).
 Experiments were also carried out with a different transformation, in which the value of the coefficients was considered across all five income distributions analysed here. For each indicator the lowest observed coefficient was given the value 1, with the highest being set at 90 ('18 observations in 5 distributions). This has the advantage that the scores on the same coefficient are comparable in the different distributions. This is also the disadvantage, however: there is no longer a uniform ranking per coefficient per distribution. For the four standardised distributions this method leads to results which are virtually the same. With the non-standardised distribution the scaling of indicators on the second dimension changes. The relative interquartile distance is scaled less extremely, because the peripheral position of Denmark weighs less heavily following transformation: the ranking order of Denmark is only twice as high as that of the most equal country (90:44.95 instead of 18:1). The ranking of countries on the first dimension remains the same, with the spread declining slightly. Denmark no longer occupies an extreme position on the second dimension; on the first dimension Denmark is positioned slightly closer to the source, but still remains on the liberal side.
- 5 The two Theil coefficients, the Gini coefficient and the variance of the logarithm of income are positioned close together and thus all produce approximately the same ranking of countries. The variation coefficient is scaled in the same direction in the correspondence analysis as these indicators, but does not go as far on the first dimension (the arrow is shorter). This latter fact is related primarily to the less extreme score of the liberal countries – with the exception of the United Kingdom – on this indicator (see appendix B5.2). Based on the variation coefficient, Canada follows fairly closely behind Belgium, the Netherlands and Sweden. Australia and the United States (especially in 1991) still belong to the middle group and are less unequal on the basis of the variation coefficient than France, Germany, Denmark and Norway, which scores very highly in 1995. These findings are related to the sensitivity of the variation coefficient to inequality at the upper end of the distribution. The income differentials at the upper end of the distribution are less pronounced in the liberal countries; the distribution is relatively even, because there is a larger group of high incomes.
- 6 The reversal in the direction of reducing income inequality which is reported for the United States by Gottschalk and Smeeding occurs only from 1995 onwards, and can therefore not be observed here.
- 7 If the variation coefficient is left out of the correspondence analysis, the scores on the first dimension are virtually the same for UK91 and USA94.
- 8 The 1989 database consisted solely of respondents from West Germany; in 1994 the inhabitants of the former East Germany are also represented.
- 9 This is not inconsistent, however. Gottschalk and Smeeding (1998) first report a decrease in inequality in Norway in 1995 compared with 1994; set against the 1991 reference level, however, their data show that the level of inequality is still higher.

- 10 If the variation coefficient is eliminated from the analysis, Norway (1995), the United Kingdom (1991) and the first Theil coefficient are positioned less extremely on the second dimension.
- 11 This is an effect caused by the ranking method used. The absolute difference in the variation coefficient between UK91 and USA94 is 0.188 before standardisation, and 0.200 after standardisation. However, this is not reflected after transformation to the scale of 1-18, because the range of the variation coefficient has increased after standardisation (0.49 instead of 0.41). In both cases the United Kingdom (1991) is ranked 18; USA94 acquires a non-standardised ranking score of 10.2, which changes to 11.1 after standardisation. After transformation, therefore, the difference on the variation coefficient has also reduced. If an alternative ranking method is used (using the method explained in note 4) the differences in ranking scores do tally with the absolute differences on the variation coefficient. However, this has no effect on the results of the correspondence analysis: the United States (1994) still has the greatest inequality, followed by the United Kingdom (1991).
- 12 The OECD asked national experts to chart the development of income inequality over a longer period, using national data and applying the \sqrt{n} -scale with apportionment of household income to individual household members (OECD 1997c 49-54). For the last measurement year (which is not always the same), the Gini coefficients calculated for the disposable income of a number of countries can be compared with the results of the analysis performed here. The ranking remains unchanged for Sweden, the Netherlands, Germany, France, Australia and the United States. Only Denmark (1994) has a lower Gini coefficient in the OECD analysis than it receives on the basis of the LIS data: 0.22 instead of 0.25, making it the country with the least inequality.
- 13 The ECHP is not suitable for testing the hypotheses which are the central issue here, because the variation in the available countries is too low. No data on Sweden were available, and the non-EU countries Norway, Canada, Australia and the United States are by definition absent from the figures. In general, the scores on the Gini coefficient are somewhat higher according to the ECHP data than on the basis of the LIS figures (see appendix B5.2). This is the result of small definition differences, including the ignoring of very low and negative incomes in the LIS analysis, and the sometimes deviating measurement year (1994). On the basis of the ECHP data, the differences between Belgium, Germany and France are very limited (0.287-0.292). Denmark (0.226) and the Netherlands (0.269) are significantly less unequal than these three corporatist welfare states, while the income differentials in the United Kingdom (0.332) are much greater (EC 2000).
- 14 The standard deviation is equal to the square root of the sum of squared deviations from the average, divided by the number of observations.
- 15 Jenkins (1991) points out that logarithm-based indicators meet the Pigou-Dalton criterion up to a certain level. If the income is higher than $e \cdot$ the average income (where e is equal to the exponential constant, 2.718...), then: '(...) the transfer reduces absolute income differences but the compression effect from taking logs overdoes things, to give a perverse effect overall (...).'

Appendix to chapter 5

B5.1 Inequality measures

A fairly simple indicator for inequality is the *relative interquartile distance* (see end of this appendix for the formula). To calculate this distance, the average income for the first quartile (the 25% of households with the lowest incomes) is deducted from that for the third quartile, and the outcome is then divided by the mean value. This indicator gives the spread of the income around the mean level and is therefore particularly sensitive to income differentiation in the middle of the distribution. A fair amount of information is also lost, however, because the inequality of half the distribution (the second and fourth quartiles) are by definition left out of consideration, and also because the income differentials within the selected quartiles are not taken into account. The minimum value for this indicator is 0 (no inequality); the maximum value is unlimited.

The *variation coefficient* is an adaptation of a familiar statistical indicator for dispersion, the standard deviation.¹⁴ In order to eliminate the sensitivity of this indicator to absolute income differences, the standard deviation is divided by the average income. A disadvantage of the variation coefficient is that the effect of a given income transfer is the same for high and low incomes. Thus an income transfer of 100 euros from someone with an income of 500 euro to someone with an income of 400 euro (20% lower) will change the indicator just as much as an equivalent transfer from somebody with an income of 50,000 euro to someone with 49,900 euro (0.2% lower). As a result, the degree of income inequality in the high income categories carries greater weight in the variation coefficient. The variation coefficient also has a minimum value of 0 and no fixed upper limit.

The *variance of the logarithm of income* is also based on a traditional statistical indicator. Taking the logarithm as a basis reduces the sensitivity to absolute income differences which characterises the regular variance (the square of the standard deviation). A theoretical basis for this indicator is sought in the hypothesis that the natural logarithm approximates the utility function of income more closely than the original income distribution. The declining marginal utility of income (the welfare derived from it) is applied in the distribution by taking the logarithm. The indicator also has a number of practical problems, however. It is sensitive to transfers at the lower end of the income distribution, and above a certain level also to transfers at higher income levels. Above this level, a transfer from wealthy to less wealthy does lead to a decrease in inequality, but this is exaggerated because the logarithm is taken as a basis.¹⁵ This indicator, too, has a minimum value of 0 and no fixed upper limit.

The *Robin Hood indicator* measures what percentage of the total income has to go from wealthy to poorer households in order to achieve an equal income distribution. The more prosperous group is defined as households with an income above the average, while the poorer group are those with a below-average income. This measure is easily understood intuitively, but encounters the objection that it is not sensitive to changes within the prosperous or poorer group, respectively. If transfers take place between two wealthy or two poor households, the value of the Robin Hood indicator remains unchanged. The indicator therefore does not meet the Pigou-Dalton criterion.

All the above indicators express inequality in terms of deviation from an indicator for the central tendency, such as the average or the median. The widely used *Gini coefficient* is based on a different principle, focusing on the difference with respect to all incomes. More specifically, the Gini coefficient is equal to half the average absolute difference between incomes, divided by the average income and standardised on the number of observations. The Gini coefficient is also related to the Lorenz curve (see chapter 4). Where there are crossing Lorenz curves, Gini coefficients can have the same values, even though the form of income distributions may differ. The Gini coefficient is relatively sensitive to transfers at middle income level, and less sensitive to transfers at the extremes of the distribution. The Gini coefficient has a minimum value of 0 and a maximum value of 1.

The *Theil coefficient*, of which two variants are calculated here, is based on yet another principle, that of entropy. This concept is used in both the natural sciences and in information theory, and refers to the uncertainty, disarray or average informative value of a number of observations. The most widely used version of the Theil coefficient is defined as the average of the logarithm of all relative income shares, weighted by the income shares. The indicator has the value 0 in case of total equality; the upper limit is defined by the logarithm of the number of observations.

The Theil coefficient has a number of attractive characteristics, the most important of which is that it makes it possible to break down observations into inequality between and within groups (e.g. employees, self-employed and benefit recipients). The Theil coefficient is also homogeneous (if all incomes are multiplied by the same factor, the coefficient remains unchanged) and symmetrical (if any two incomes are interchanged, the indicator remains the same). It also meets the Pigou-Dalton criterion: income transfers from wealthier to less wealthy households reduce the value of the coefficient. The indicator also has disadvantages, however: the underlying entropy concept is fairly impenetrable, and the Theil coefficient is relatively sensitive to changes at the upper and lower ends of the distribution.

The formulae for the inequality indicators used are given below.

Symbols used:

x is the income.

$\mu = \frac{1}{n} \sum_i x_i$ is the arithmetical mean income.

$g = e^{\frac{1}{n} \sum_i \ln x_i}$ is the geometric mean income.

relative interquartile distance $\frac{\mu_{3^{th} \text{ quartile}} - \mu_{2^{nd} \text{ quartile}}}{median}$

variation coefficient $\frac{1}{\mu} \left\{ \frac{1}{n} \sum_i (x_i - \mu)^2 \right\}^{1/2}$

variance log of income $\frac{1}{n} \sum_i (\ln x_i - g)^2$

Robin Hood indicator $\frac{1}{2n\mu} \sum_i |x_i - \mu|$

Gini coefficient $\frac{1}{2n^2\mu} \sum_j \sum_i |x_i - x_j|$

Theil coefficient (1) $\frac{1}{n} \sum_i \frac{x_i}{\mu} \ln \left(\frac{x_i}{\mu} \right)$

Theil coefficient (2) $\frac{1}{n} \sum_i \ln \left(\frac{\mu}{x_i} \right)$

B5.2 Rankings of countries on inequality indicators

Disposable income, non-standardised

Theil		Theil (2)		Gini		Rel. Int. Distance		Robin Hood		variation coeff.		var. log	
B92	0,135	B92	0,144	B92	0,291	NL91	0,370	NL91	0,207	B92	0,538	NL95	0,291
NL91	0,142	NL91	0,144	NL91	0,293	B92	0,379	NL95	0,208	NL95	0,577	NL91	0,292
NL95	0,142	NL95	0,144	NL95	0,294	D89	0,384	B92	0,209	NL96	0,581	NL96	0,296
NL96	0,143	NL96	0,145	NL96	0,295	NL95	0,388	NL96	0,209	NL91	0,583	B92	0,307
S92	0,165	D89	0,175	D89	0,314	D94	0,389	D89	0,223	S92	0,606	D89	0,368
D89	0,171	S92	0,177	D94	0,319	NL96	0,391	D94	0,226	CAN94	0,652	DK92	0,381
N91	0,179	D94	0,182	S92	0,320	F89	0,404	F89	0,235	CAN91	0,653	S92	0,381
D94	0,181	DK92	0,185	N91	0,326	CAN91	0,419	S92	0,236	D89	0,658	D94	0,382
DK92	0,181	N91	0,187	DK92	0,328	CAN94	0,434	N91	0,237	N91	0,661	N91	0,395
CAN91	0,184	F89	0,193	F89	0,332	AUS89	0,450	CAN91	0,238	AUS89	0,680	F89	0,403
CAN94	0,186	CAN91	0,200	CAN91	0,333	N91	0,460	CAN94	0,241	USA91	0,685	N95	0,416
F89	0,190	N95	0,200	N95	0,334	S92	0,465	N95	0,242	DK92	0,692	CAN91	0,441
AUS89	0,200	CAN94	0,203	CAN94	0,336	N95	0,472	DK92	0,244	F89	0,704	CAN94	0,443
N95	0,200	AUS89	0,218	AUS89	0,347	USA91	0,482	AUS89	0,248	D94	0,740	AUS89	0,474
USA91	0,214	USA91	0,243	USA91	0,363	USA94	0,498	USA91	0,262	USA94	0,760	UK95	0,479
USA94	0,243	UK95	0,244	UK95	0,379	UK95	0,506	UK95	0,273	N95	0,819	UK91	0,520
UK95	0,249	UK91	0,259	USA94	0,382	UK91	0,508	UK91	0,276	UK95	0,836	USA91	0,549
UK91	0,264	USA94	0,266	UK91	0,384	DK92	0,517	USA94	0,276	UK91	0,948	USA94	0,582

Disposable income, standardised: OECD scale, households

Theil		Theil (2)		Gini		Rel. Int. Distance		Robin Hood		variation coeff.		var.log	
B92	0,084	B92	0,085	B92	0,225	N91	0,257	B92	0,160	B92	0,432	B92	0,174
S92	0,095	NL95	0,095	S92	0,236	S92	0,260	N91	0,164	S92	0,466	NL95	0,183
NL96	0,096	NL91	0,096	N91	0,236	D89	0,263	S92	0,164	NL95	0,489	NL91	0,187
N91	0,097	NL96	0,096	DK92	0,240	B92	0,274	DK92	0,169	NL96	0,490	NL96	0,187
NL95	0,099	N91	0,097	NL95	0,242	N95	0,275	N95	0,172	N91	0,493	N91	0,197
NL91	0,103	S92	0,099	NL91	0,243	D94	0,277	NL95	0,174	NL91	0,499	DK92	0,200
DK92	0,109	DK92	0,101	NL96	0,243	DK92	0,286	NL96	0,174	CAN91	0,572	S92	0,213
N95	0,123	N95	0,111	N95	0,248	NL91	0,297	NL91	0,175	CAN94	0,572	N95	0,218
D89	0,125	D89	0,116	D89	0,255	NL96	0,299	D89	0,177	DK92	0,590	D89	0,230
D94	0,135	D94	0,128	D94	0,269	NL95	0,301	D94	0,188	D89	0,613	D94	0,255
CAN91	0,137	CAN91	0,141	CAN91	0,285	F89	0,318	F89	0,201	AUS89	0,623	F89	0,280
CAN94	0,139	F89	0,141	CAN94	0,286	CAN91	0,346	CAN91	0,202	USA91	0,642	CAN91	0,297
F89	0,150	CAN94	0,143	F89	0,286	CAN94	0,357	CAN94	0,206	D94	0,648	CAN94	0,300
AUS89	0,159	AUS89	0,161	AUS89	0,307	AUS89	0,417	AUS89	0,222	F89	0,659	AUS89	0,331
USA91	0,185	UK95	0,185	UK95	0,334	USA91	0,420	UK95	0,240	N95	0,701	UK95	0,351
UK95	0,199	UK91	0,195	USA91	0,336	UK95	0,421	USA91	0,240	USA94	0,723	UK91	0,371
USA94	0,213	USA91	0,201	UK91	0,343	USA94	0,439	UK91	0,247	UK95	0,757	USA91	0,439
UK91	0,220	USA94	0,222	USA94	0,355	UK91	0,442	USA94	0,253	UK91	0,923	USA94	0,469

Disposable income, standardised: $\sqrt{(n)}$ -scale, households

Theil	Theil (2)	Gini	Rel. Int. Distance	Robin Hood	variation coeff.	var. log	
B92	0,089	B92 0,090	B92 0,233	N91 0,272	B92 0,166	B92 0,442	B92 0,185
S92	0,100	NL95 0,100	S92 0,243	S92 0,273	S92 0,170	S92 0,479	NL95 0,194
NL95	0,103	NL91 0,101	N91 0,247	D89 0,274	N91 0,172	NL95 0,498	NL91 0,197
NL91	0,104	NL96 0,101	NL95 0,248	D94 0,286	DK92 0,176	NL96 0,499	NL96 0,197
NL96	0,104	S92 0,105	NL91 0,249	B92 0,287	NL91 0,179	NL91 0,506	DK92 0,215
N91	0,107	N91 0,106	NL96 0,249	N95 0,289	NL95 0,179	N91 0,511	N91 0,218
DK92	0,115	DK92 0,108	DK92 0,249	DK92 0,306	NL96 0,179	CAN91 0,580	S92 0,224
D89	0,128	N95 0,119	N95 0,258	NL91 0,309	N95 0,179	CAN94 0,581	N95 0,237
N95	0,130	D89 0,121	D89 0,260	NL96 0,311	D89 0,181	DK92 0,600	D89 0,243
D94	0,138	D94 0,132	D94 0,274	NL95 0,313	D94 0,191	D89 0,610	D94 0,268
CAN91	0,143	F89 0,144	F89 0,289	F89 0,321	F89 0,203	AUS89 0,634	F89 0,287
CAN94	0,145	CAN91 0,148	CAN91 0,291	CAN91 0,356	CAN91 0,207	USA91 0,647	CAN91 0,315
F89	0,152	CAN94 0,151	CAN94 0,293	CAN94 0,367	CAN94 0,211	D94 0,647	CAN94 0,318
AUS89	0,166	AUS89 0,170	AUS89 0,315	AUS89 0,423	AUS89 0,227	F89 0,661	AUS89 0,352
USA91	0,188	UK95 0,194	USA91 0,340	USA91 0,433	USA91 0,244	N95 0,717	UK95 0,369
UK95	0,207	UK91 0,206	UK95 0,342	UK95 0,439	UK95 0,246	USA94 0,726	UK91 0,391
USA94	0,216	USA91 0,207	UK91 0,350	USA94 0,448	UK91 0,252	UK95 0,771	USA91 0,455
UK91	0,227	USA94 0,228	USA94 0,358	UK91 0,456	USA94 0,256	UK91 0,931	USA94 0,484

Disposable income per equivalent adult: OECD scale

Theil	Theil (2)	Gini	Rel. Int. Distance	Robin Hood	variation coeff.	var.log	
B92	0,077	B92 0,079	B92 0,217	N91 0,227	N91 0,150	B92 0,407	N91 0,163
S92	0,081	N91 0,083	N91 0,217	N95 0,229	S92 0,151	S92 0,429	B92 0,164
N91	0,087	S92 0,085	S92 0,217	S92 0,230	DK92 0,153	N91 0,475	DK92 0,177
DK92	0,092	DK92 0,088	DK92 0,221	DK92 0,243	B92 0,154	NL95 0,483	NL95 0,180
NL95	0,096	NL95 0,092	N95 0,227	D89 0,253	N95 0,155	NL96 0,486	S92 0,181
NL91	0,097	NL91 0,093	NL95 0,238	B92 0,261	D89 0,167	NL91 0,489	NL91 0,182
NL96	0,097	NL96 0,093	NL96 0,238	D94 0,268	NL91 0,170	DK92 0,521	NL96 0,183
D89	0,108	N95 0,095	NL91 0,239	NL91 0,281	NL95 0,170	CAN94 0,546	N95 0,183
N95	0,109	D89 0,101	D89 0,240	NL96 0,282	NL96 0,170	D89 0,548	D89 0,198
CAN91	0,127	D94 0,119	D94 0,259	NL95 0,284	D94 0,181	CAN91 0,551	D94 0,235
CAN94	0,128	CAN91 0,130	CAN91 0,273	F89 0,309	CAN91 0,193	AUS89 0,584	F89 0,268
D94	0,130	CAN94 0,132	CAN94 0,275	CAN91 0,316	F89 0,195	F89 0,622	CAN91 0,272
F89	0,139	F89 0,134	F89 0,278	CAN94 0,322	CAN94 0,195	USA91 0,626	CAN94 0,279
AUS89	0,143	AUS89 0,147	AUS89 0,291	AUS89 0,370	AUS89 0,208	D94 0,658	AUS89 0,309
USA91	0,177	UK95 0,184	USA91 0,329	UK91 0,399	USA91 0,234	N95 0,663	UK91 0,353
UK95	0,195	UK91 0,184	UK91 0,330	UK95 0,401	UK91 0,235	USA94 0,702	UK95 0,355
UK91	0,201	USA91 0,193	UK95 0,331	USA91 0,407	UK95 0,236	UK95 0,743	USA91 0,427
USA94	0,204	USA94 0,216	USA94 0,348	USA94 0,428	USA94 0,248	UK91 0,863	USA94 0,459

Disposable income per equivalent adult: $\sqrt{(n)}$ -scale

Theil		Theil (2)		Gini		Rel. Int. Distance		Robin Hood		variation coeff.		var. log	
B92	0,081	B92	0,083	B92	0,233	S92	0,240	S92	0,155	B92	0,417	B92	0,172
S92	0,085	S92	0,089	S92	0,243	N95	0,241	B92	0,158	S92	0,438	N91	0,184
N91	0,095	N91	0,092	NL95	0,244	N91	0,242	N91	0,159	NL95	0,490	NL95	0,190
DK92	0,098	DK92	0,094	NL96	0,244	DK92	0,260	DK92	0,160	N91	0,492	S92	0,191
NL95	0,100	NL95	0,097	NL91	0,245	D89	0,264	N95	0,163	NL96	0,492	DK92	0,191
NL96	0,100	NL91	0,098	N91	0,247	B92	0,271	D89	0,172	NL91	0,497	NL91	0,193
NL91	0,101	NL96	0,098	DK92	0,249	D94	0,277	NL95	0,174	DK92	0,534	NL96	0,193
D89	0,111	N95	0,102	N95	0,258	NL96	0,293	NL96	0,174	D89	0,546	N95	0,200
N95	0,115	D89	0,106	D89	0,260	NL91	0,295	NL91	0,175	CAN94	0,554	D89	0,212
D94	0,131	D94	0,123	D94	0,274	NL95	0,297	D94	0,183	CAN91	0,557	D94	0,247
CAN91	0,132	F89	0,134	F89	0,289	F89	0,304	F89	0,195	AUS89	0,598	F89	0,270
CAN94	0,133	CAN91	0,137	CAN91	0,291	CAN91	0,329	CAN91	0,198	F89	0,618	CAN91	0,290
F89	0,139	CAN94	0,139	CAN94	0,293	CAN94	0,332	CAN94	0,200	USA91	0,628	CAN94	0,296
AUS89	0,151	AUS89	0,156	AUS89	0,315	AUS89	0,379	AUS89	0,215	D94	0,650	AUS89	0,330
USA91	0,179	UK95	0,192	USA91	0,340	UK91	0,411	USA91	0,237	N95	0,669	UK91	0,372
UK95	0,202	UK91	0,192	UK95	0,342	UK95	0,417	UK91	0,240	USA94	0,702	UK95	0,372
USA94	0,206	USA91	0,198	UK91	0,350	USA91	0,420	UK95	0,241	UK95	0,754	USA91	0,440
UK91	0,207	USA94	0,219	USA94	0,358	USA94	0,434	USA94	0,250	UK91	0,865	USA94	0,471

6 SOCIAL WELFARE

This chapter looks at the possible trade-off between income equality and income level, and the consequences this has for the level of social welfare in the different welfare state types. After a presentation of the hypotheses to be tested (§ 6.1), section 6.2 explains why there could be a trade-off on the basis of the economic theory between income equality and income level. The chapter then examines whether such a trade-off actually occurs in practice (§ 6.3). It then goes on to discuss how a measure of social welfare can be constructed which enables the differing combinations of income inequality and level to be weighted in relation to each other (§ 6.4 and 6.5). Finally, the chapter looks at the extent to which these combinations correspond with the preferences of the populations in the various countries (§ 6.6).

6.1 Introduction

In the foregoing chapters eleven Western welfare states are compared in terms of income inequality and the degree of income levelling through taxation and social security. These comparisons show that some countries, such as Belgium and Sweden, are characterised by small income differences and a high degree of income levelling, while other countries, such as the United States and Australia, combine a high degree of income inequality with a low degree of redistribution through the institutions of the welfare state. It could be tempting in the light of this to conclude that countries such as Belgium and Sweden are more successful or perform better as welfare states than the United States and Australia. Such a conclusion would be premature, however. This is because the earlier comments are limited to comparisons of the income distribution, i.e. of relative incomes; the absolute income level is left out of consideration. In reality it is not impossible for a high degree of income equality to be accompanied by a low average income level. The lower income groups in Belgium and Sweden would then admittedly benefit in a relative sense, i.e. in comparison to the higher income groups, but the absolute level of their income (measured by its purchasing power) could still be lower than in a country with a much greater degree of income inequality, such as the United States. The question then is which welfare state should be preferred: one with low income inequality and a low average income or one with wide income disparity and a high average income. The question could also be formulated as follows: in which country is the level of social welfare the highest? Social welfare is then interpreted as a variable which is dependent both on the country's average income and the degree of income inequality. If the average income increases for a constant income inequality, the social welfare increases. The same applies if the average income remains the same and the degree of income inequality decreases. However, if a higher average income is accompanied by greater income inequality, it is not possible to determine objectively whether the level of social welfare increases, falls or stays the same. In essence this is a normative question, which depends on the weight accorded to income level and to income equality. Nevertheless, a quantitative analysis of the correlation between income inequality and income level can provide some basis for a more balanced judgment of the performance of different welfare states.

This chapter investigates whether there really is a trade-off between income level and income equality, i.e. whether countries with a low level of income inequality pay the price of a relatively low average income. The chapter also examines to what extent the positions

occupied by countries on the dimensions of income inequality and income level correlate with the type of welfare state and with the preferences of the population. In concrete terms, the following hypotheses are tested:

- *There is a negative correlation between equality of disposable incomes and the level of average income: the more equally the disposable income of a country is distributed, the lower the average income.*
- *There is a high degree of inequality in liberal welfare states, and the average income is high; in social-democratic welfare states the degree of inequality is low and the average income is also low; in the corporatist welfare states, the degree of inequality is greater than in the social-democratic countries, but the level of average income is comparable.*
- *The ranking of countries by social welfare depends on the weight attached to the degree of inequality. If little weight is attached to income inequality, then social welfare is highest in the liberal welfare states; if a good deal of weight is attached to income inequality, then the level of social welfare is highest in the social-democratic welfare states; and if modest weight is attached to income inequality, social welfare is highest in the corporatist welfare states.*
- *The balance struck between income inequality and average income reflects the preferences of the population. In liberal welfare states the population attaches a relatively high degree of importance to economic growth, while the primary concern in the social-democratic welfare states is with reducing income differentials. The population of the corporatist welfare states accords approximately equal importance to both goals.*

Before these hypotheses are tested empirically, a summary is given in section 6.2 of theoretical insights into the trade-off between income equality and income level.

6.2 The trade-off between income equality and income level in theory

In the 1960s and 1970s – the period when Western welfare states were being built up – income redistribution and economic growth were generally seen as unrelated policy goals. Where a causal link was recognised between them, it was mainly thought to be a positive, mutually reinforcing relationship. Because lower income groups consume a larger part of their income than the higher income groups, it was believed that transfers from high to low incomes would stimulate consumption. In the Keynesian thinking which dominated the period, an increase in consumer spending was an important mechanism driving economic growth. Conversely, economic growth created the scope to redistribute ever-increasing amounts of income through taxation and social insurance contributions, without confronting the higher income groups with a real fall in their disposable income.

Actual developments appeared to confirm the positive link between income levelling and income growth. Many new social provisions came into being in the 1960s and 1970s, the take-up of which rapidly increased to sizeable proportions (in the Netherlands, for example, there was social assistance, disability benefit, etc.; in the United States there were the welfare schemes AFDC and Food Stamps), and at the same time real national income was increasing rapidly.

After the first oil crisis in 1973, however, economic growth began to falter and the number of benefit claimants – and thus the amount involved in income transfers – began growing at an unprecedented rate. Initially attempts were made to stimulate economic growth using the familiar Keynesian recipe of stimulating consumer demand. However, the growth figures of the 1960s were not repeated and the number of benefit claimants continued to rise, leading to

a sharp increase in many countries in income transfers, public spending and government deficits. The deep economic recession at the start of the 1980s, following the second oil crisis, opened the way for the view that the causal link between income redistribution and economic growth, far from being positive, is in fact a negative relation. According to this view, lower economic growth is accompanied by higher transfer expenditure and thus a greater degree of income levelling. Conversely income levelling, it was argued, would hinder the recovery of economic growth. This latter causal link, in particular, received growing attention through the 1980s.

According to neoclassical theory – the dominant economic theory at present – large-scale income redistribution could have a negative impact on income level and economic growth in several ways (see e.g. Musgrave and Musgrave 1989, chapter 17). The common factor is that income redistribution through the welfare state reduces or completely removes financial incentives, or provides the wrong financial incentives. The economic subjects then no longer base their choices on the 'correct' price signals, as created by the free market, and no longer make proper judgments between the (social) costs and benefits of their behaviour. In short: taxes, social insurance contributions, benefits and subsidies distort the price mechanism and create disincentives. This can have consequences for behaviour such as saving, household-formation and divorce, migration, investment in training, the taking of financial risks and the operation of the black market economy, or shadow economy. However, both in the theoretical and the empirical investigation of the disincentives of the welfare state, most attention is focused on the consequences for the supply side of the labour market. Labour supply is adversely affected in particular by (the progressivity of) income tax, means testing in the social safety net and the generosity and accessibility of income-replacement benefits.

Income tax distorts the price ratio between consumption and leisure time. The higher the tax burden, the smaller the net amount that people retain from an hour's work. An increase in the tax burden then creates two opposing effects. On the one hand an increase in tax encourages people to work longer so as to limit the drop in their net income; this is termed the *income effect* of a tax increase. On the other hand, an hour's work produces less income due to the tax increase, so that an hour's leisure time becomes relatively 'cheaper'. To use the language of economists: the shadow price of leisure time, which is equal to the income from an hour's paid employment, falls. This stimulates people to work shorter hours and to 'consume' more leisure time. This is referred to as the *substitution effect*. It is not possible to decide on theoretical grounds which effect is greater: the positive income effect or the negative substitution effect. In principle, therefore, an increase in tax rates can lead to both a larger and a smaller supply of labour.

This conclusion applies only for the number of hours which someone who is already working is prepared to work. For someone who does not perform paid work and has no income of his own, an increase in the tax burden has an unambiguous discouraging effect on his willingness to enter the labour market. After all, a person without any income of his own does not pay wage or income tax, so that an increase in the tax burden cannot have any positive effect on his income. This leaves only the negative substitution effect. This means that people who are not yet active on the labour market (e.g. housewives) are less likely to seek employment following a tax increase. It is also possible that people in work but on low wages (e.g. in part-time jobs) may decide to withdraw from the labour market altogether. For non-workers who are in receipt of benefit, the same applies as for low-paid workers if the tax increase also reduces the net level of benefit. It can be assumed on this basis that the number of persons who are prepared to work will reduce as a result of a tax increase.

Empirical research broadly confirms these theoretical expectations (see e.g. OECD 1995d: 58-60). For men (especially male breadwinners), the income effect and substitution effect largely cancel each other out, so that the supply of male labour shows virtually no response to changes in the tax burden. The labour supply of women (especially married women) is much more sensitive to changes in tax rates; a higher tax on labour income can significantly curb the number of women on the labour market.

In the foregoing it has been tacitly assumed that the tax burden is not dependent on the level of income, so that a tax increase has the same effect on all income groups. In reality, however, the tax rate generally increases as income rises, i.e. the tax system is progressive (see chapter 4). Suppose that the degree of progressivity of the tax system increases, but that the average tax burden on the taxpaying population as a whole is constant.¹ The tax burden then shifts from the lower to the higher incomes, so that the tax regime has a stronger levelling effect. The negative effect of taxation on a person's decision as to whether to participate in the labour market will then be smaller at the lower end of the income distribution. It may be expected that more (married) women who only wish to work part-time and/or have a relatively low hourly rate of pay will then enter the labour market.

The consequences for the number of hours that the higher income groups wish to work are more difficult to predict. After all, both the total net income and the total net revenue from an hour's work will fall, so that again there will be two opposing effects. With a constant average tax burden, a strengthening of the progression will thus lead to a larger labour supply in terms of numbers of persons, while nothing can be said about the total supply in terms of hours. Table 6.1 summarises the effects of (changes in) the tax rate on the labour supply of different groups, as these can be deduced on the basis of the neoclassical theory. This table again confirms that the theory does not produce uniform results in the majority of cases as regards the expected effect on the labour supply.

Table 6.1 Theoretical effects^a on the labour supply of changes in tax and social security

	substitution effect	income effect	total effect
increase in the tax rate			
working, high earnings	-	+	?
working, low earnings	-	+	?
not working, no income	-	0	-
not working, social security benefit	-	+	?
strengthening of progressivity of taxation			
working, high earnings	-	+	?
working, low earnings	+	-	?
not working, no income	+	0	+
not working, social security benefit	+	-	?
increase in social security benefits			
not working, social security benefit	-	-	-
a - : causes the labour supply to decrease; + : causes the labour supply to increase; ?: effect is uncertain			
Source: SCP			

Now suppose that a tax increase leads to a fall in the total labour supply in terms of number of hours; the total earned income and thus the average income could then fall. This is termed the 'deadweight loss' of income transfers. A drop in the labour supply in hours need not however necessarily lead to a fall in the total earned income: it is possible that the places vacated by people who begin working less may be taken over by others who are at present involuntarily unemployed. Raising taxes or strengthening the progression of the tax system would then encourage redistribution of employment.

The effect on total earned income also depends on the hourly rate of pay of those who begin working shorter hours and those who begin working long hours. If it is mainly the lower income groups which begin working shorter hours or withdraw from the labour market, while the higher income groups begin working longer hours (to compensate for their loss of income), then the total earned income could actually increase. In that case the primary income distribution would in fact become more unequal. The converse effect is also possible, for example if the progressivity of the tax system is strengthened.

As well as affecting the labour supply in terms of number of hours worked, income redistribution through taxation and social security can also affect investments in training and thus the production per hour worked. Higher taxes reduce the future returns (in terms of net pay) on an investment in education. This could discourage people from following (higher) education courses. On the other hand, the costs of education, in the form of loss of income during the training course, fall as a result of a higher tax burden. Only if the burden of taxation on the future income is higher than on the potential present labour income (which is generally the case with a progressive tax system), does taxation have a net negative effect on investments in training. Tax revenues can however be used in part to subsidise training, either in the form of a subsidy of the training itself or in the form of study finance. These subsidies could tilt the balance in favour of investments in education.

In conclusion, it can be stated that the effect of taxation, increases in the tax burden and reinforcing of the progression factor on the labour supply, labour productivity and total earned income is not uniform on theoretical grounds. Only empirical research can provide an answer to the question of whether a higher tax burden or progressive taxation has an adverse impact on the level of average income.

While the effects of taxation on the labour supply cannot be determined unambiguously in theory, the effect of social security benefits with a means test is clear. Here again, there is an income effect and a substitution effect but, in contrast to the tax system, these effects operate in the same direction. The income effect of a social security benefit is negative because a higher benefit offers people an opportunity to achieve a higher income level without having to work. The substitution effect is also negative because the benefit is reduced by a certain percentage (sometimes as high as 100%) if the recipient accepts paid work. The marginal income from an hour spent working is therefore small and the shadow price of an hour's leisure time low. If a social security benefit is increased, both effects act as a disincentive to accepting paid work.

Criticisms which can be levelled against this argument include the fact that it wrongly assumes that every person who is not in work is entitled to benefit, the level of which depends only on their own income (or that of their partner) and not on whether they are voluntarily or involuntarily unemployed. In practice, strict conditions are almost always attached to benefit entitlement (cf. Atkinson 1999: 83-91). For example, people are generally only entitled to unemployment benefit if they are involuntarily unemployed and are willing to accept suitable employment. Similarly, disability benefit is paid only if the recipient is (physically or

psychologically) incapable of performing paid work. Formally, therefore, people are not in a position to make a judgment themselves between the returns (in terms of utility) of an hour's work and an hour's leisure time. In practice, however, individuals are often capable of manipulating the formal conditions for benefit eligibility. Both the risk of becoming unemployed, sick or disabled to work and the chance of finding work again is something which people can influence themselves to a certain degree. In the literature this is referred to as the problem of 'moral hazard'. Since people are insured against the risk of income loss, they will make less effort to reduce the risk of becoming or remaining unemployed or incapacitated for work.

Benefits agencies sometimes find it impossible or very difficult to establish whether a benefit recipient meets the formal criteria for receiving a benefit. Moreover, the strictness with which the criteria are applied and monitored can vary widely, as experiences in the Netherlands with the Disability Insurance Act in the 1990s show. Although the level and duration of disability benefit was changed, the reduction in the number of people entering the disability benefit system and the number of people leaving it were primarily the result of more stringent medical requirements in the years 1994-1995. This implies that the disincentive effect of social security on the labour supply is not determined solely by the generosity of the benefit scheme (level and duration of benefit, eligibility criteria), but also depends on the way in which the scheme is implemented in practice. Since it is difficult to measure this latter aspect empirically, caution is called for in making overly confident statements about the impact of social security on the labour supply (cf. Atkinson and Micklewright 1991 and Atkinson 1999). Ranged against these potentially negative effects of a sharp reduction in income inequality are a number of positive effects. Reference has been made several times in the recent literature to the fact that smaller income differentials can also have a positive effect on economic growth (see e.g. Aghion et al. 1999). For example, imperfections on capital markets may be the reason that people on low incomes are unable to invest sufficiently in training or in a starting business. Both raising the lowest incomes through social security and making available (semi-)collective provisions can provide compensation for this. In a large welfare state, therefore, collective expenditure is not only consumptive in nature, but is also an investment. Wide access to education and health care, including for people on low incomes, can contribute to the productivity of the labour force (investment in human capital). In this way this expenditure can have a positive impact on economic growth. Reducing income inequality through taxation and social security can also prevent social unrest, which can harm economic development. Moreover, social security can reduce the uncertainty inherent in a modern, dynamic market economy. Guaranteeing adequate continuity of income in the event of unemployment, illness, disability and old age can encourage people to take risks and increase labour mobility. How important these positive economic effects of the welfare state are is difficult to establish. It is however entirely feasible that the total lack of a welfare state or other collective arrangements which apply a correction to the primary income distribution would have strong negative effects on the economic performance and average income levels of a country. If there is very marked income inequality, the negative impact this has on income levels will at a certain point exceed the positive impact, so that greater inequality is accompanied by a lower average income. There is then no longer a trade-off between income equality and income level. In none of the welfare states discussed in this study, however, including the liberal welfare states, does the degree of income inequality appear to be so great that its negative effects on average income levels exceed by a wide margin the positive effects of the financial incentives generated by the income differentials.

The foregoing makes clear that it is feasible on theoretical grounds that the arrangements of the welfare state influence the labour supply and the level of (total and average) earned income. However, it is not possible to make a uniform statement in advance regarding the direction in which these effects operate, let alone about their magnitude. Empirical research is the only way of seeking to obtain more insight into this. Accordingly, a large number of studies have been carried out in recent decades into the effects of taxation and social security. Several surveys have however shown that it is not simple to draw conclusions on the basis of this large body of research (see e.g. Danzinger et al 1981; Atkinson and Micklewright 1991; Moffitt 1992; Barr 1992; Atkinson 1995 and Atkinson 1999).

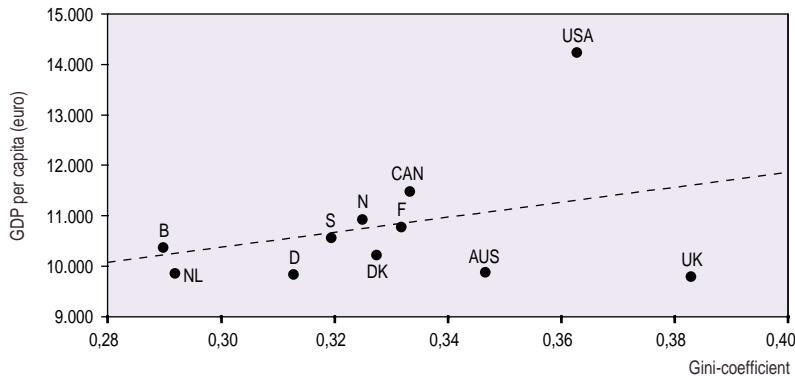
Generally, research into individual schemes (e.g. one type of benefit) shows that their effect on the labour supply is relatively small and in fact often is close to nil. Such research at any rate produces few indications for the existence of a strong trade-off between income redistribution and income level. What cannot be determined at the level of individual schemes could however be important when the combined effect of all welfare state arrangements is considered. Atkinson (1999: 28-35) summarises ten studies carried out in the period 1985-1994 into the effect of the size of the welfare state (usually measured in terms of the level of spending on social security) on countries' economic growth rate. This summary reveals that the findings of four studies indicate that a larger welfare state hampers economic growth; four other studies conclude that a larger welfare state promotes economic growth; while two studies find no significant effect of the size of the welfare state on the rate of economic growth (growth of gross domestic product). In other words, the empirical research conducted to date does not offer a sufficient basis for firm statements about the effect of the welfare state on (the growth of) the level of income in particular countries.

6.3 The trade-off between income equality and income level in practice

International comparative research can offer a means of determining whether welfare states in which the income differences are levelled out to a greater extent pay a price for this in the form of a lower average income. This section makes a start on the process in the form of a cross-sectional comparison of the degree of income inequality and the level of average income in various countries. For measuring income levels in different countries, gross domestic product (GDP) per head of the population – a commonly used yardstick – is used as an indicator. The advantage of using GDP rather than, say, average disposable income, is that GDP also takes into account the value of (semi-)public provisions such as health care, education, police services and investments in physical infrastructure. GDP is made comparable for the different countries here by converting their currencies into euros using purchasing power parities.

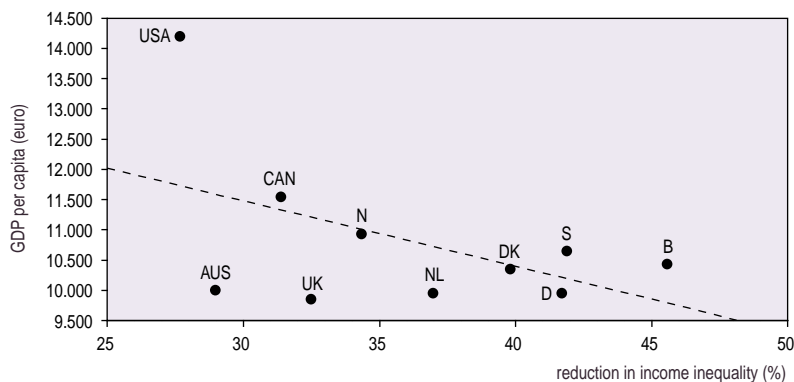
Figure 6.1 shows the relationship between the degree of inequality in disposable household income (measured using the Gini coefficient) and the level of per capita gross domestic product around 1990. A weak positive correlation ($r = 0.33$) is found between income inequality and income level (as indicated by the trend line which has been added). This correlation is however not significant and is caused solely by the fact that the United States combines a very high income level with large income differences. No correlation between income level and income inequality can be found for the other countries for which data are available. Thus the Netherlands, Germany, Australia and the United Kingdom have virtually the same income level (around 10,000 euro per capita), even though the inequality in terms of disposable incomes diverges widely. Within this group, much greater income disparities are found in the two liberal welfare states (the United Kingdom and Australia) than in the Netherlands and the corporatist Germany, but this is not reflected in differences in income level.

Figure 6.1 Income inequality (disposable income) and income level (GDP per capita), circa 1990



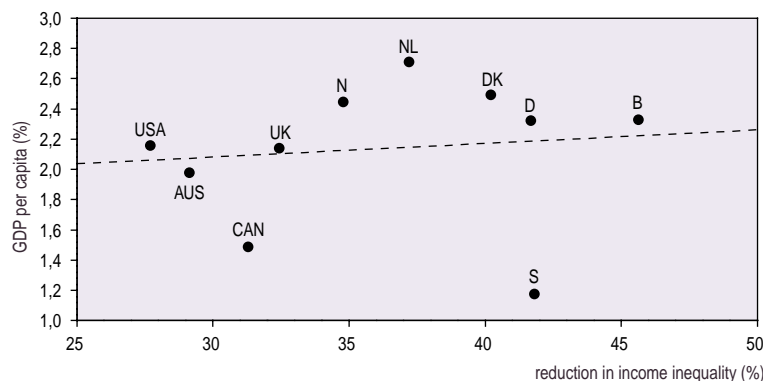
The inequality in disposable incomes is the result of both the inequality in primary incomes and the degree of income redistribution through taxation, social insurance contributions and social security. It could be argued that the distribution in figure 6.1 is distorted by the fact that the distribution of primary incomes is influenced by a great many other factors besides the redistributive effect of the welfare state, such as the demographic structure of the population, the economic structure, the labour market participation rate of women, and so on. If redistribution via the welfare state has a negative effect on income level, this ought to be apparent above all in the correlation between the reduction in income inequality and the level of average income. Figure 6.2 offers some insight into this. As in chapter 4, the degree of income redistribution through social security and taxation is expressed as the percentage difference between the inequality of the primary income distribution and of the secondary income distribution. The negative correlation between degree of income redistribution and income level ($r = -0.48$) is again not significant, however. If the United States and Canada are left out of consideration, however, a positive correlation (albeit not significant) is found within the remaining group of countries between degree of income redistribution and level of income ($r = 0.29$).

Figure 6.2 Inequality reduction and and income level (GDP per capita), circa 1990



Over the longer term, it is more important what effect income redistribution has on the rate of economic growth than on income levels at any given moment. If a country with a relatively low income level is able to achieve structurally higher economic growth, it will ultimately also achieve higher income levels. Figure 6.3 shows the correlation between the degree of inequality reduction around 1990 and the average annual income growth (expressed as growth in GDP per capita in euros at 1990 levels based on purchasing power parities) in the period 1985-1997.² If there really is a trade-off between income equality and income level, a greater degree of inequality reduction should hold back the growth in income. However, virtually no correlation is found between these two factors; the small positive correlation ($r = 0.28$) between inequality reduction and economic growth is not statistically significant. It is striking that, of the two countries with the strongest degree of income redistribution, Sweden and Belgium, the former had the lowest rate of economic growth per head of the population in the period 1985-1997 (0.4% per annum) while the latter had the third strongest growth rate (2.1% per annum). Figure 6.3 thus produces no indication at all that a high level of income redistribution through taxation and social security holds back the rate of economic growth.

Figure 6.3 Inequality reduction around 1990 and annual economic growth (GDP) 1985-1997



Each of the figures 6.1-6.3 shows the relationship between only two variables, whereas it is not unlikely that the level of welfare or welfare growth is determined by many more factors than simply a few characteristics of the welfare state. In the light of this, no definitive statements can be made about the effect of income redistribution via the welfare state on the level of welfare or growth in welfare in countries. Nevertheless, these figures do suggest that the correlation between income redistribution and income level is not strong. Even if there is a trade-off between income equality and income level, its effect is subordinate to the influence of other factors. Moreover, more sophisticated econometric research confirms that smaller income differentials tend to boost rather than hamper economic growth (Perotti 1996).

The hypothesis that there is a clear correlation between the type of welfare state, the degree of income inequality and the average level of incomes is only partially confirmed. The United States and, to a lesser extent, Canada show the expected pattern of liberal welfare states, combining a high degree of income inequality with a high average income level. This does not however hold for the United Kingdom and Australia: despite the wide income inequality, income levels here are no higher than in the corporatist Germany and the Netherlands, and are actually lower than in the social-democratic welfare states. On the European continent, no

clear division can be detected between the social-democratic and corporatist welfare states. The income level (measured in GDP per capita) was admittedly somewhat higher in the Scandinavian countries in 1990 than in Germany and the Netherlands, but France and Belgium were positioned in the middle of the social-democratic group. As regards the rate of economic growth between 1985 and 1997, the corporatist Belgium and Germany, the social-democratic Denmark and Norway and the hybrid Netherlands form the leading group. Both the social-democratic Sweden and the liberal Canada lag behind the rest in terms of growth rate.

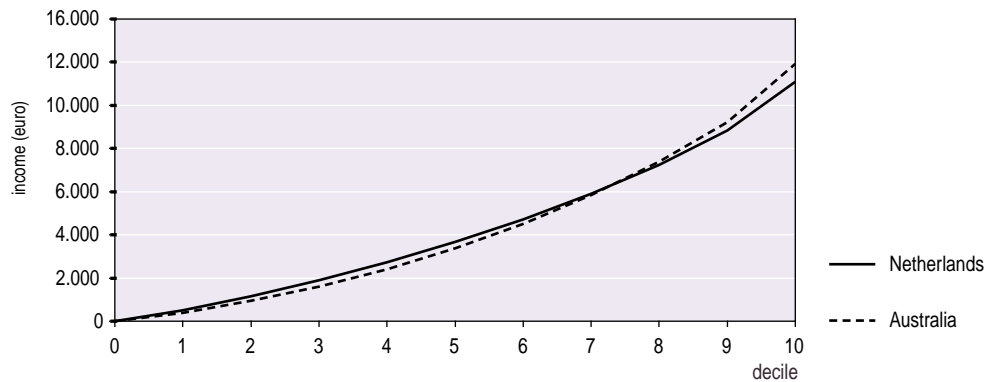
6.4 Weighing income equality against income level

Given the weak negative correlation between income equality and average income level (figure 6.1), it is not immediately clear which of the countries studied performs 'best'. The United States pays the price of a high degree of income inequality for its high average income level, while the small income differentials in Belgium and the Netherlands are accompanied by a relatively low level of income. How the level of (average) income should be weighed against the degree of income inequality is a normative question, about which an objective judgment cannot be formed. If a good deal of weight is attached to income equality and much less to the (average) level of income, the situation in Belgium and the Netherlands will be preferred to that in the United States; conversely, someone who attaches greater importance to income level and is much less interested in income differentials will come to the opposite conclusion.

This can be illustrated on the basis of 'generalised' Lorenz curves (fig. 6.4). In the same way as with the 'normal' Lorenz curves discussed in chapter 4, households are ranged along the x-axis in order of increasing (disposable) income; instead of the cumulative share in total income of the lowest x% of households, however, the y-axis now shows the average level of income of the lowest x% of households. The right-hand end of the generalised Lorenz curve (representing 100% of households) thus shows the average income of the total population. To facilitate comparison, incomes of all countries are expressed on the basis of 1991 euros. Contrary to section 6.3, disposable household incomes are taken as a basis here. This is because it is not possible to apportion gross domestic product to individual households. There would also be no point in using gross household incomes, because part of the tax and social insurance contributions paid also benefit other households. Disposable household income thus offers the best insight into differences in welfare between households in successive deciles.

Plotting the generalised Lorenz curves of two or more countries on the same graph provides an insight into the degree to which these countries differ in terms of income inequality and income level. Figure 6.4 illustrates this for the Netherlands and Australia. The graph shows that households in the Netherlands in the lowest seven deciles of the income distribution have a higher disposable income than in Australia. From the eighth decile upwards, however, the generalised Lorenz curve for Australia lies above that for the Netherlands, indicating that households in these deciles are better off in Australia. The fact that the top right-hand end of the curve for Australia is above that of the Netherlands means that the average disposable income in the former country is higher.

Figure 6.4 Generalised Lorenz curves for the Netherlands and Australia, circa 1990

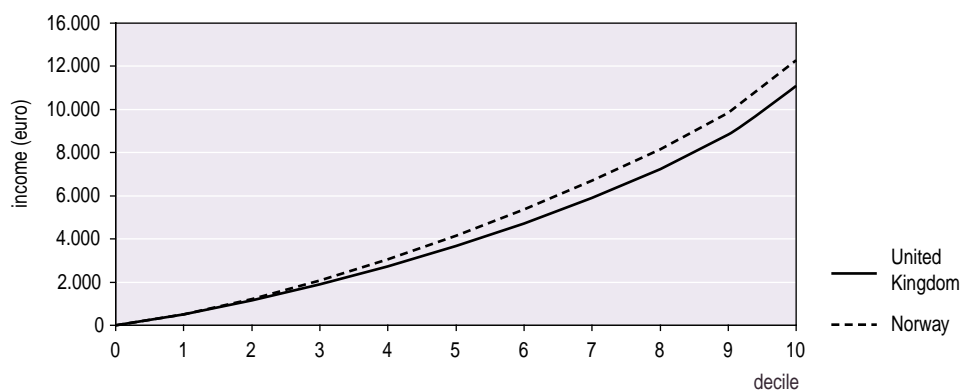


Two extreme positions which can be adopted in the normative assessment of different countries are the Rawlsian maximin principle and the principle that only average income levels matter (cf. Lambert 1993: 69-71). In his work *A theory of justice* (1971), the American political philosopher John Rawls formulated a fairness principle which encompasses the 'difference principle' or 'maximin' principle. This means that the income distribution is fair if the lowest incomes are as high as possible (maximisation of minimum incomes). Attention is then focused exclusively on the left-hand end of the generalised Lorenz curve. Since the disposable income of the lowest deciles in the Netherlands is higher than in Australia, the Dutch welfare state would be preferred according to this maximin principle.

Another extreme view is that only average income matters when assessing the performance of welfare states. A neutral stance is then adopted to the degree of inequality in a given country. The welfare state with the highest average income is always preferred, irrespective of how unequally this income is distributed among the population. This could be described as the 'maximean' principle. Proponents of this view focus only on the right-hand end of the generalised Lorenz curve; in that case Australia clearly scores better than the Netherlands.

An assessment based on the maximin principle need not always lead to a different preference than an assessment based on the maximean principle. If the generalised Lorenz curve of one country lies above that of another country throughout its length, the first country will score better on both the maximin and the maximean principles: both the lowest incomes and the average income are then higher in the first country than the second. This is the case, for example, if the United Kingdom is compared with Norway (fig. 6.5). As the figure shows, the generalised Lorenz curve for Norway is above that of the United Kingdom throughout its length. Not only is the average disposable income in Norway higher than in the United Kingdom, as indicated by the right-hand end of the curves, but the lowest income groups are also better off in absolute terms. Since the whole of the generalised curve for Norway lies above that for the UK, there is no room for doubt that the Norwegian welfare state performs better than that of the United Kingdom.

Figure 6.5 Generalised Lorenz curves for the United Kingdom and Norway, circa 1990



By comparing the generalised Lorenz curves of every two countries from the group studied, an impression can be obtained of whether the households in each decile of the income distribution in one country are better off (i.e. have a higher disposable income) than in the other country in that pair. The result of these pair-wise comparisons is shown in table 6.2. It must be borne in mind here that the comparisons in the lowest deciles are fairly uncertain, among other things because of the occurrence of negative incomes and zero incomes.³

Table 6.2 Pair-wise welfare comparisons^a based on generalised Lorenz curves, 1989-1992

	Sweden	Denmark	Norway	Netherlands	Germany	Belgium	France	Canada	UK	Australia	USA
Sweden		+	+	+	+	+	+	+	0	0	+
Denmark	—		+	0	+	—	—	+	—	—	0
Norway	—	—		—	0	—	—	+	—	—	0
Netherlands	—	0	+		0	—	0	+	0	0	0
Germany	—	—	0	0		0	—	+	—	—	0
Belgium	—	+	+	+	0		+	+	0	0	0
France	—	+	+	0	+	—		+	—	0	+
Canada	—	—	—	—	—	—	—		—	—	0
United Kingdom	0	+	+	0	+	0	+	+		+	+
Australia	0	+	+	0	+	0	0	+	—		+
United States	—	0	0	0	0	0	—	0	—	—	

a A + means that the welfare in the country in the column is greater than the welfare level of the country in the row. A — means that the level of welfare in the column is lower than that of the country in the row. A 0 means that the welfare level of the two countries cannot be compared because the generalised Lorenz curves intersect.

Source: LIS; CBS(IPO'91) SCP treatment

A + means that the generalised Lorenz curve of the country in the column concerned lies above that of the country in that row for its entire length, in other words that the disposable income of all households in the first country is higher than that of the households in each corresponding decile in the second country. A — means that the disposable income in all deciles in the country in the column in question is lower than in the country in that row. A 0 means that no general conclusion is possible: for some deciles the country in the column

scores better, while for other deciles the country in the row does best; the generalised Lorenz curves for the two countries intersect each other, as illustrated in figure 6.1 for the Netherlands and Australia. There is no one country which scores best or worst in all pair-wise comparisons. This means that, on the basis of the generalised Lorenz curves, it is not possible to establish a uniform ranking of the countries based on level of social welfare. There are however a few countries which never score worst and never score best in the bilateral comparisons. The columns containing the United States and Canada, for example, contain only +s and 0s. Canada scores uniformly better than all other countries with the exception of the United States. By contrast, the United States only scores uniformly better than France, Sweden, the United Kingdom and Australia; the comparison with the other countries does not produce a clear winner (i.e. the generalised Lorenz curves intersect).

The columns containing Sweden and the United Kingdom contain only – signs and 0s. This means that in a pair-wise comparison these countries never come out as the best. The performance of Sweden is 'undecided' only in comparison with that of the United Kingdom and Australia, but the generalised Lorenz curve for Sweden lies below that of all other countries. It should however be noted here that in the database for Sweden children living at home who are aged 18 and over are counted as single persons living alone. Since many members of this group have no – or a low – personal income, this depresses the average household income figure. If children living at home and aged 18 or over in Sweden are not regarded as independent households, then Sweden would probably less frequently score worst in the mutual comparisons.

As stated, the large number of 0s in table 6.2 (i.e. pairs of countries whose generalised Lorenz curves intersect) does not permit a uniform ranking of the countries: some countries combine a higher average income level with a high degree of income inequality (e.g. the United States), while other countries have a lower average income level but also much greater equality of income. A comparison of social welfare in these countries is therefore based on value judgments. Nevertheless, a global ranking of countries could be made on the basis of the number of + and – signs in table 6.2. The more frequently a country scores best and the less frequently it scores worst in the mutual comparison with other countries, the higher it is placed in the ranking. Table 6.3 shows the result of this summation of pluses and minuses.

Table 6.3 Ranking based on comparison of generalised Lorenz curves, 1989-1992

country	Balance of pluses and minuses
1. Canada	+9
2. Norway	+6
3. United States	+4
Germany	+4
5. Denmark	+2
6. Netherlands	0
7. France	-2
8. Belgium	-4
Australia	-4
9. United Kingdom	-7
10. Sweden	-8

Source: LIS: CBS (IPO'91) SCP treatment

No correlation at all can be discovered in this ranking with the type of welfare state; both the top and bottom positions in the ranking are occupied by a liberal and a social-democratic welfare state: Canada and Norway at the top, the United Kingdom and Sweden at the bottom. The only systematic pattern which emerges from table 6.3 is that the corporatist countries are all positioned in the middle of the ranking: Germany in third place, France in seventh and Belgium in eighth position.

Canada's top position requires some qualification. Because the database used for Canada contains no data on social insurance contributions, disposable incomes in Canada are somewhat overestimated. If the social insurance contributions were to be deducted from the calculated disposable income, the generalised Lorenz curve would fall and possibly intersect with several other curves, thus increasing the number of 0's in table 6.2.

6.5 Comparison of social welfare on the basis of inequality aversion

One disadvantage of the ranking in table 6.3 is that it is not founded on an explicit welfare indicator. It is simply based on a summation of pluses and minuses, with the tacit assumption that every + and every – carries the same weight. This is not realistic, however. If the generalised Lorenz curve of country A lies a long way above the Lorenz curve of country B over its full length, then more weight will be attributed to this difference than where both Lorenz curves are very close together (but nevertheless do not cross). In order to make allowance for such differences, it will be necessary to indicate explicitly how we wish to weigh the level of average income and the inequality of the income distribution against each other. This can be done by constructing a 'social welfare function'. This function indicates how social welfare depends on the welfare of the individual households in a country, whereby it is assumed that individual welfare is determined solely by household income. In principle such a social welfare function, depending on the preferences one wishes to express in it, can take any desired form. Based on certain assumptions, however, social welfare (SW) can be calculated simply as the (unweighted) average of the welfare of all households (see appendix B6.1):

$$SW = \frac{1}{N} \sum_{i=1} U(y_i) \quad (6.1)$$

where $U(y_i)$ is the welfare of household i and N the total number of households in a country. The degree of income inequality is not specifically taken into account in this welfare function. Nonetheless, preferences for a more or less equal distribution of income can be implicitly reflected in the social welfare function through the way in which the welfare $U(.)$ of a household is derived from its income y_i . If the individual function is seen in such a way that, as a household's income increases, 1 euro more income causes the welfare of that household to rise less (i.e. the function $U(.)$ is concave), this expresses the fact that 1 euro additional income contributes more to the social welfare of a low-income household than 1 euro extra does for a household with a high income. If 1 euro is transferred from a wealthy to a poor household, therefore, the overall level of social welfare will increase. Even if the reduction in income of the wealthy household is greater than the increase in income of the poor household, the level of social welfare may still increase. The question now is what level of income reduction of a wealthy household one is prepared to accept in order to offer a poor household a given income improvement, so that the level of social welfare remains the same on balance.

The economist Okun (1975: 91-95) has compared this to transferring income in a leaky bucket: if a portion of the income of higher income groups is removed through taxation and social insurance contributions and transferred to the lower income groups, some of that income can leak away 'en route'. The question then is what degree of leakage is considered acceptable in order to support the transfer of income from the wealthy to the poor, i.e. to ensure that the overall level of social welfare just increases as a result of that leaky transfer. The ratio between the income reduction of wealthy households and the income increase of poor households such that the level of social welfare remains unchanged on balance, given a certain income differential between the two households, provides an indication of the degree of 'inequality aversion'. Suppose a wealthy household has an income which is p times as high as that of a poor household and that it is felt that the level of social welfare does not change if the poor household receives 1 euro more and the wealthy household q euros less, so that the leakage amounts to $q - 1$. The parameter for the inequality aversion ϵ is then defined as:

$$\epsilon = \ln q / \ln p \quad (6.2)$$

If the inequality aversion ϵ is equal to 1, the level of social welfare will not change if a low income increases by 1 euro and an income which is three times as high reduces by 3 euros. If the inequality aversion is equal to 2, the level of social welfare will remain unchanged if the high income reduces by $3^2 = 9$ euros. If the Rawlsian maximin criterion is applied, the improvement in the low income will always be regarded as an increase in social welfare, irrespective of the reduction in the high income. The inequality aversion is then infinitely large (∞). Someone who regards only average income as important (the maximean principle) will only consider it acceptable if the income reduction for the wealthy household is equal to the increase in income for the poor household (i.e. $q = 1$); here, the inequality aversion is 0.

If there is an aversion to income inequality (i.e. $\epsilon > 0$) preference would be given, if this had no consequences for average income, to a situation whereby all incomes are equal. Put differently, if all incomes are equal, there might be a willingness to accept a lower average income in return. For a given inequality aversion ϵ it is possible, based on the existing income distribution and average income level, to calculate which lower level of income is just acceptable if all incomes were equal. This income level is termed the 'equally distributed equivalent income' (*edei*) of the original income distribution (see appendix B6.1). The higher the inequality aversion, the greater will be the willingness to accept a lower income level as the price for an egalitarian distribution, and the further will the *edei* lag behind the average income of the original distribution. The difference between the two indicates how much income one would be prepared to sacrifice in order to reduce the inequality to nil.

Table 6.4 shows the equally distributed equivalent income of the eleven countries discussed here for varying degrees of inequality aversion. Where the inequality aversion is nil, the *edei* is equal to the actual average income; the distribution of the income then plays no role. The greater the inequality aversion, the lower the *edei*. In countries with a high degree of income inequality, however, the *edei* falls more quickly than in countries with small income differentials. This can change the ranking of countries as the inequality aversion increases: relatively poor but 'egalitarian' countries then climb the rankings. This is shown in table 6.5. Where the inequality aversion is infinitely large, corresponding with the maximin principle, only the lowest incomes still play a role.⁴

Table 6.4 The equally distributed equivalent income (edei) for varying degrees of inequality aversion, 1989-1992

degree of inequality aversion	Sweden (1992)	Den- mark (1992)	Nor- way (1991)	Nether- lands (1991)	Ger- many (1989)	Bel- gium (1992)	France (1989)	Canada (1991)	UK (1991)	Aus- tralia (1989)	USA (1991)
0	11,563	13,412	13,912	12,786	14,091	11,219	13,136	16,925	13,170	13,526	18,031
0.5	11,019	12,739	13,253	12,204	13,278	10,756	12,225	15,793	11,886	12,491	16,380
1	10,470	12,122	12,625	11,665	12,541	10,305	11,403	14,697	10,810	11,516	14,750
2	9,286	10,892	11,355	10,648	11,066	9,394	9,809	12,490	9,017	9,662	11,558
3	7,932	9,514	9,946	9,537	9,407	8,345	8,014	10,134	7,525	7,785	8,548
4	6,548	7,917	8,391	7,942	7,622	6,960	5,997	7,791	6,175	5,852	6,036
∞	441	556	578	584	527	501	461	548	411	445	440

Source: LIS; CBS (IPO'91) SCP treatment

Table 6.4 shows that average disposable household income at the start of the 1990s was highest in the United States, at 18,000 euro, and lowest in Belgium, at little more than 11,000 euro. These two countries thus stand at the top and bottom, respectively, of the social welfare ranking if no importance is attached to income inequality, i.e. if the inequality aversion is 0. In this case the Netherlands, with an average income of about 12,800 euro, is fairly low in the rankings, in ninth place. As soon as any importance is attached to income inequality, however, the ranking changes. Even for an inequality aversion as low as 0.5 (42% of an income transfer from a household with an income that is three times as high as that of the recipient household may then 'leak away'; see appendix B6.1), the ranking begins to change slightly: Denmark passes Australia and the United Kingdom is overtaken by France and the Netherlands. For an inequality aversion of 2 (and a leakage rate of 89%), Canada takes over top position from the United States, and is itself overtaken by Norway when the inequality aversion reaches 4 (leakage rate 99%). Finally, if only the lowest incomes are considered (infinite inequality aversion), the Netherlands stands at the top of the rankings. It should however be noted here that the average income of the lowest decile in the Netherlands is not significantly higher than that in Norway, Denmark or Canada. The rise of the Netherlands and Norway through the rankings in line with increasing inequality aversion is characteristic of countries with a relatively low level of income and small income differentials. The same thing happens with Belgium, Sweden and Denmark, though to a less pronounced degree.

The pattern is reversed for wealthy countries with a high degree of income inequality. With an inequality aversion of 1, the United States still scores highest, but as more importance is attached to income inequality, the USA drops rapidly through the rankings: sixth place for an inequality aversion of 3, ninth place for an inequality aversion of 4 and tenth place if only the lowest income levels are regarded as important. The United Kingdom and Australia show a comparable pattern, and to a lesser extent this also applies for Germany.

Finally, there are a few countries whose position in the ranking shows no clear trend at all. The position of France, for example, fluctuates somewhat in the rankings, while Canada first rises then falls again as the inequality aversion increases.

Table 6.5 Ranking by countries by social welfare on the basis of the equally distributed equivalent income for varying degrees of inequality aversion, 1989-1992

degree of inequality aversion	Sweden	Denmark	Norway	Netherlands	Germany	Belgium	France	Canada	UK	Australia	USA
0	10	6	4	9	3	11	8	2	7	5	1
0.5	10	5	4	8	3	11	7	2	9	6	1
1	10	5	3	6	4	11	8	2	9	7	1
2	10	5	3	6	4	9	7	1	11	8	2
3	9	4	2	3	5	7	8	1	11	10	6
4	7	3	1	2	5	6	10	4	8	11	9
∞	9	3	2	1	5	6	7	4	11	8	10

Source: LIS; CBS (IPO'91) SCP treatment

If a distinction is made in table 6.5 between the three types of welfare state, it can be seen that the liberal welfare states (United Kingdom, United States, Canada and Australia) achieve the best relative scores where there is a low inequality aversion. The social-democratic welfare states, by contrast, achieve their highest position where there is a strong aversion to inequality. The position of the corporatist welfare states Germany and France alters little in the rankings as the inequality aversion increases. Belgium, by contrast, gradually rises through the rankings. The Netherlands corresponds most closely to the social-democratic pattern: the greater the importance attached to income inequality, the higher the position of the Netherlands in the ranking.

The third hypothesis tested in this chapter states that the ranking of the welfare state types by level of social welfare correlates with the preferences with regard to income inequality and income level: where the aversion to inequality is low, the liberal welfare states ought to score relatively highly; where there is a strong aversion to inequality the social-democratic welfare states should do best and where there is an average inequality aversion the corporatist welfare states ought to come out on top. This hypothesis is confirmed only partially by the results presented above. The United States and Canada do top the rankings where the aversion to inequality is low, but the United Kingdom and Australia occupy only a middle position. The corporatist countries do not achieve their highest position with a moderate inequality aversion (1-3), but when the aversion to inequality is lowest (Germany) or highest (Belgium). Moreover, none of the corporatist countries top the rankings at any point. The social-democratic countries do match the hypothesis by scoring best where there is a high degree of inequality aversion, though Sweden never rises above seventh place. Moreover, where the aversion to inequality is infinite, the hybrid Netherlands comes out on top.

Income data for six countries – the Netherlands, Germany, the United Kingdom, the United States and Canada – are also available for 1994 or 1995. This makes it possible to investigate whether the ranking of these countries in terms of social welfare changed in the first half of the 1990s. The tables in appendix B6.2 show the equally distributed equivalent income and the rankings of these countries based on it in 1994/1995. These produce virtually the same picture as that outlined above for the start of the 1990s. Where aversion to inequality is low (0-1) the United States remains at the top of the rankings; with a moderate inequality aversion (2-3) Canada scores best; and where the aversion to inequality is 4 or higher the level of social welfare is highest in the Netherlands. The United Kingdom then consistently achieves the

lowest score, but this may well have to do with the fact that Sweden and Belgium are not included in this comparison. Although the possibility cannot be ruled out that the scores of the missing countries will have changed more radically in the first half of the 1990s, it would appear plausible to assume that the results presented above still broadly applied in the mid-1990s.

Although the method discussed above enables the level of social welfare of a country to be expressed in a single figure using a social welfare function and the degree of aversion to inequality, thus enabling countries to be ranked, it also has a number of serious limitations. In the first place the specification of the social welfare function used here (the unweighted average of individual welfare levels) makes no explicit allowance for the degree of income inequality. Countries such as Canada, with significantly greater income inequality than the Netherlands, will therefore always score higher than the Netherlands because the middle and higher income groups are better off than those in the Netherlands and the lowest incomes in Canada are not (significantly) lower than those in the Netherlands. In spite of this, it is not impossible that the income disparity is regarded as so important that preference is still given to the Dutch income distribution. A high level of income equality could then be an objective for which one is prepared to make a substantial sacrifice in terms of income level.

A second objection is that only freely disposable household income is compared here. In reality, however, the level of welfare of households is not determined only by their freely disposable income, but also by the public provisions from which they benefit. The welfare derived from private consumption is in fact supplemented by the take-up of provisions which are free or are made available at less than cost price, such as education, health care and cultural amenities. The value of these provisions is left out of consideration in the above comparisons. This could go some way to explaining why large welfare states such as the Netherlands and Sweden have a relatively low average disposable income while the liberal welfare states such as the United States and Canada have a much higher disposable income. Finally, no account is taken of intangible aspects of welfare, such as a healthy environment, a safe living environment and social solidarity.

6.6 Opinions on income inequality and income level

An interesting question is whether the various combinations of income inequality and average income in the different welfare states accurately mirror the views of those who live in those countries. In concrete terms, this section presents the hypothesis that the population of liberal welfare states attach relatively high importance to economic growth, the population of social-democratic welfare states to reducing income differences, while the population of corporatist welfare states accord roughly equal importance to both.

To test this hypothesis use is made of data from the International Social Survey Programme (ISSP), an international collaborative project which involves an annual survey in a number of countries (which has now risen to 23). Eight of the countries discussed in the present study also take part in the ISSP: the Netherlands, Germany, the United Kingdom, Sweden, Norway, the United States, Canada and Australia. Since exactly the same questions are asked in each country, the findings are in principle comparable.⁵ The survey adopts a different central theme each year, and in 1987 and 1992 the theme was social inequality. In addition, questions are also regularly asked about the role of the government. A few questions in the survey give some insight into the opinions of the population regarding the desirability or undesirability of

(reducing) income disparities. Table 6.6 reports some of the findings. (As separate results are published for East Germany and West Germany both before and after German reunification, only the findings for West Germany are shown in this table).

Table 6.6 Views on income inequality, 1987, 1992 and 1996 (as % of the population)

	Sweden	Nor- way	Neth- erlands	West Ger- many	Canada	UK	Aus- tralia	USA
It is the responsibility of the government to reduce the differences in income between people with high incomes and people with low incomes ^a								
1987	.	.	65	61	.	64	44	29
1992	53	60	53^c	66	48	65	43	38
1996	60	57	.	49	43	54	43	33
Differences in income in my country are too large ^a								
1987	.	.	66	76	.	76	61	58
1992	60	71	.	84	71	81	63	77
In order to get people to work hard, large differences in pay are necessary ^b								
1987	.	.	37	77	.	65	76	71
1992	67	.	.	.	.	.	.	.
Large differences in income are necessary for my country's prosperity ^b								
1987	.	.	17	27	.	28	29	33
1992	30	17	.	21	16	19	25	26

a Respondents who 'agree' or 'agree strongly' with the statement.

b Respondents who believe that large differences in pay are 'absolutely necessary' or 'probably necessary'.

c 1993.

Source: SCP (ISSP'87, '92, '93 and '96)

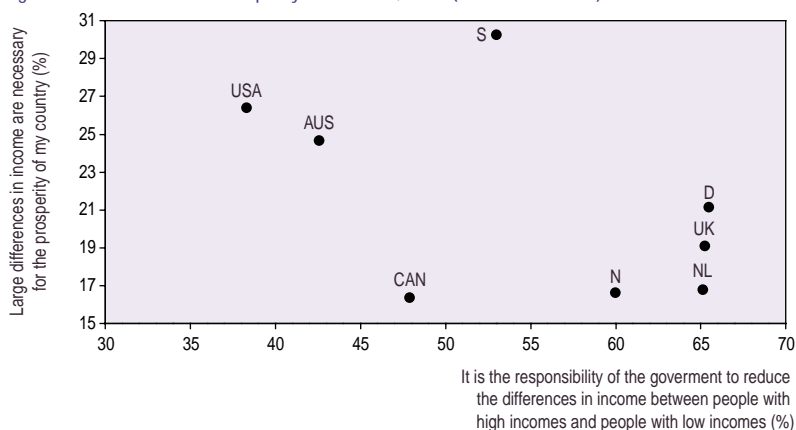
If the differences in income inequality and average income as outlined earlier for the various countries reflect the views of the population, it may be expected that the statement that it is the government's responsibility to reduce income differentials will receive wide support in the corporatist and social-democratic welfare states, with their high degree of income equalisation. The third and fourth statements, namely that (large) differences in income are necessary in order to encourage people to work hard and to increase the country's welfare, would be expected to receive support mainly from the less egalitarian liberal welfare states. The first part of this supposition is confirmed by the figures in table 6.6, the second part only partially. The support for income redistribution by the government is considerably greater in the European welfare states than their liberal counterparts, though in this respect the United Kingdom resembles a continental corporatist welfare state more than a liberal variant. This can perhaps be explained by the fact that the United Kingdom has wide income differentials but not the high welfare level of the prime example of the liberal welfare state, the United States. Put differently, it indicates dissatisfaction on the part of the British population with the

relatively low level of social welfare in the United Kingdom (table 6.5), regardless of the degree of inequality aversion.

It is also striking that the support for income redistribution measures declined sharply in many countries in the first half of the 1990s. This trend was most pronounced in (West) Germany, the Netherlands and the United Kingdom. Sweden, where the population showed relatively little support for a policy of redistribution at the start of the 1990s, is the only country where support for such a policy increased as the decade progressed.

The importance attached by the population to differences in income as a means of boosting individual performance and economic prosperity shows no systematic correlation with the type of welfare state. The liberal Canada, the social-democratic Norway and the Netherlands attach the least importance to income differences as a means of raising the country's welfare level. And it is not only Americans (in the United States) and Australians, but also Germans and Swedes who consider income incentives relatively important. This is illustrated in figure 6.6, in which the responses to the first and fourth questions are set against each other for the year 1992 (1987 for the Netherlands).

Figure 6.6 Views on income inequality and welfare, 1992 (Netherlands 1987)



The people of the Netherlands, Norway, Germany and the United Kingdom combine a preference for reducing differences in income with according relatively low economic importance to income differentials as such. The American and Australian populations would like to see less redistribution and accord greater economic importance to income differentials. The deviating positions of Sweden and Canada may be related to their position in the ranking of countries by social welfare. In Sweden a low degree of income inequality is combined with a relatively low average disposable income, as a result of which Sweden occupies a fairly low position in the ranking even where there is a high degree of inequality aversion (table 6.5). The above figures suggest that a considerable proportion of the Swedish population feel that the welfare state in their country has gone too far: the price they pay in terms of loss of welfare level for a highly egalitarian income distribution and a highly developed welfare state, is one they evidently consider too high. This is also confirmed by the fact that there is no other country where so few people believe that the income differentials are too great (although even in Sweden this still applies to more than half the population).

In Canada, relatively modest income differentials are accompanied by a high average income level. This means that Canada consistently occupies a high position in the social welfare

rankings, regardless of the degree of aversion to inequality. This could explain why the Canadians are much less inclined than the people of other liberal welfare states (the United States and Australia) to feel that wide income differentials are necessary in order to raise the national welfare level. Given the high income level of even the low income groups in absolute terms, the Canadians also apparently consider it unnecessary for the government to seek to reduce income differentials further.

The foregoing partly confirms and partly refutes the fourth hypothesis on the correlation between public opinion and the trade-off between income equality and income level. Public opinion in the social-democratic Norway and the liberal United States and Australia is in line with expectations: the majority of Norwegians are in favour of an egalitarian income distribution and attach little importance to income incentives, whereas the Americans and Australians are predominantly against income redistribution and accord greater economic importance to income differentials. The corporatist Germany and Netherlands exhibit hardly any differences compared with Norway in this respect, however, although the Germans regard income incentives as slightly more important. Contrary to expectations, the views of the British public do not differ essentially from those of the Norwegians, Dutch or Germans. The preferences of the Swedish and Canadian populations deviate most widely from the assumptions set out in the hypothesis. The Swedes attach a great deal of importance to income incentives and occupy an intermediate position as regards the desirability of income redistribution. This latter point also applies for the Canadians, though they attach little importance to income incentives. For the Swedes, this would appear to point to dissatisfaction with the existing welfare state, which they feel has gone too far. The view of the Canadians, by contrast, demonstrates that they are relatively satisfied with the level of welfare and income distribution in their country.

6.7 Conclusions

The appraisal of a welfare state is determined not just by the extent to which it reduces social inequality but also by the consequences it has for the material level of welfare. In the most extreme case, the equalisation of all income differentials could mean that everyone was equally poor instead of equally rich.

This chapter first examines to what extent there is a trade-off between income equality and income level. It then examines how the various combinations of income inequality and average level of income could be given values relative to each other. Whereas the first of these is an objective question concerning the actual relationship between two variables, the second involves a normative judgment of the outcome of those variables.

This chapter first tests the hypothesis that there is a negative correlation between the extent of income inequality and the average level of income, and that the various types of welfare state may be divided into clusters in this regard. There does indeed appear to be a limited trade-off between income equality and income level within the group of rich and mature welfare states which are compared in this study. The liberal welfare states, with a relatively high degree of income inequality, generally have a somewhat higher level of income than the more egalitarian social-democratic and corporatist welfare states. The United Kingdom and Australia do not, however, fit well into this picture: they combine a high degree of inequality and a low degree of income equalisation through social security and taxation with a level of income that is no higher than that in the corporatist welfare states.

The link between income equalisation and economic performance disappears entirely if the focus moves to the rate of economic growth (GDP per head of population). In this case social-

democratic and corporatist welfare states such as Denmark, Norway and Germany and the hybrid Netherlands in fact do better than the liberal countries, although Sweden scores the worst in this respect.

To what extent there is a causal link between the degree of income redistribution via the welfare state and a country's income level or rate of economic growth is difficult to establish. The simple graphical analyses in this chapter cannot provide the answer. However, more sophisticated econometric research into the effect of the size of the welfare state on a country's economic performance also fails to produce unambiguous results. Contrary to what appeared to be the prevailing view in the 1980s and 1990s, therefore, there are few grounds at the moment for assuming that a highly developed and strongly redistributive welfare state will ultimately and inevitably erode a country's level of welfare.

The valuation of the various combinations of income inequality and income level is ultimately determined by the (subjective) importance attached to both aspects. There is no one country which is superior to all the other countries as regards both the distribution of income and income levels. If one is only concerned with the average level of income, irrespective of the degree of income inequality (the 'maximean' option), the liberal welfare states are relatively high up the league table of social welfare, with the United States and Canada in first and second place. The greater the importance attached to (reducing) income differentials, the further the liberal welfare states sink in the ranking, and the more the social-democratic welfare states, as well as the Netherlands and Belgium, move up. Given an extremely pronounced inequality aversion, initially Norway and ultimately the Netherlands occupies first place in the table. The position in the ranking of typical corporatist welfare states such as Germany and France turns out not to be greatly correlated with the degree of inequality aversion. These countries are therefore not designated as the 'best' in respect of any single preference concerning the trade-off between income equality and level of income, but are also never designated as the worst. The United Kingdom and Sweden, finally, show a rather deviating pattern. In Sweden the average level of income is so low that the country remains at the bottom of the list, despite the relatively small income differentials. The same applies to the United Kingdom, but then primarily because the income inequality is extremely pronounced and the average level of income moderate. Apart from the UK and Sweden the hypothesis is confirmed that social welfare is greatest in the liberal welfare states if there is little aversion towards income inequality, and greatest in the social-democratic welfare states if the inequality aversion is more pronounced.

Finally, attention is focused on the question of whether there is a correlation between the actual combination of income inequality and income level in the various welfare states and the views of the population of those states. The hypothesis is tested that the differences between the welfare state types coincide with differences in the preferences of the inhabitants. Up to a point the assumed correlation does turn out to exist. In the European corporatist and social-democratic welfare states the population attaches above-average importance to the reduction of income inequality and less importance to the economic function of income differentials, while the situation in the liberal welfare states is the other way around. The attitudes of the British, however, turn out to correspond most closely with those of the continental European welfare states.

Sweden and Canada form an exception in this regard. The attitude of the Swedish population indicates that they consider that the expansion of their welfare state has gone too far. The Canadians, by contrast, appear relatively satisfied about the combination of moderate income differentials and a high level of income in their country.

Notes

- 1 This means that the quotient of total tax revenues and total (taxable) income remains the same.
- 2 In order to establish the direction of the causal link, it would seem more logical to relate the reduction in inequality around 1990 to the welfare growth in the period thereafter, e.g. 1990-1996. Growth figures over a fairly short period can however be distorted by differences in phasing of the economic cycle. A longer period, for example 1985-1996, which encompasses a complete economic cycle, therefore provides a more reliable picture of structural differences in welfare growth.
In fact the conclusion remains the same if the period 1990-1996 is considered. It could also be argued that the effect of income redistribution on welfare growth only becomes visible in the much longer term. This can be studied by relating the degree of income redistribution to the welfare growth in, say, the period 1970-1996. Again, however, no significant correlation between the two is found. (Ideally, the income redistribution in 1990 should in fact not then be looked at, but rather the average over the period 1970-1996. The data needed for this are however not available.)
- 3 Since the Lorenz curves are based on samples, 95% reliability intervals were calculated for the average income of the (cumulative) population deciles (Beach and Davidson 1983). It is assumed that the Lorenz curve achieved for country A lies above that of country B along the whole of its length, if for every decile the 95% reliability interval of the average income in country A overlaps that in country B or is completely above it, and if there is at least one decile for which it lies completely above it. If the reliability intervals for country A lie above those of country B for some deciles and below them for others, then it is assumed that the generalised Lorenz curves intersect and thus that no general statement can be made about the ranking of the two countries.
- 4 The lowest incomes are operationalised here as the average income of the lowest decile. This corresponds with the intention of Rawls, who prefers to focus attention not on the lowest individual incomes, but on the income of the social group with the lowest incomes.
- 5 Naturally, questions can be asked about comparability, for example as a result of differences in the method of sampling and the way in which the survey is conducted, as a result of interpretation difficulties in translating questions and as a result of cultural differences which may influence the way in which questions are answered (in some countries, for example, people will be more inclined to give 'extreme' responses than in others). See Küchler (1990).

Appendix to chapter B6 – Social welfare and inequality aversion

B6.1 The social welfare function

Let y_i be the (standardised) income of individual or household i . The social welfare accorded to this income is indicated by $U(y_i)$.

The social welfare function SW then has the following form:

$$SW = \frac{1}{n} \sum_i U(y_i) \quad (\text{B6.1})$$

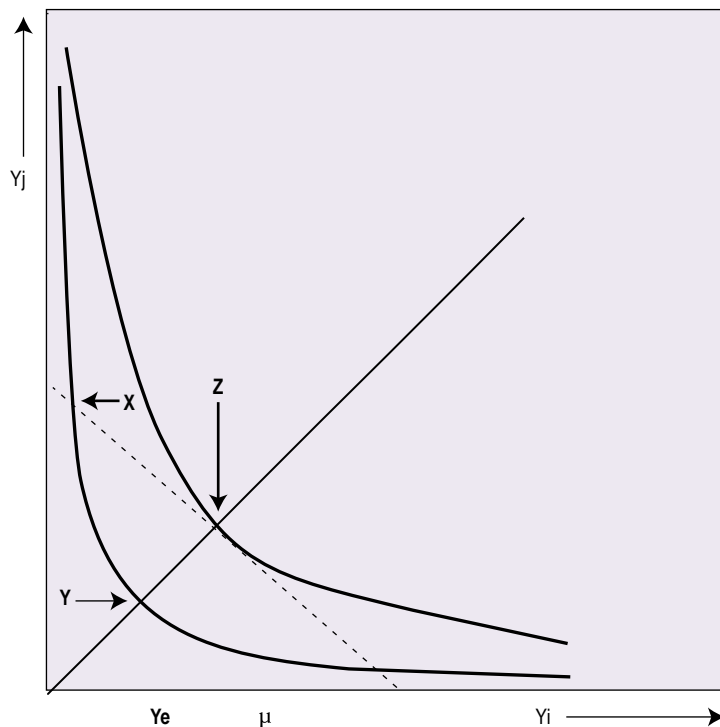
This is nothing more than the unweighted average of the $U(y_i)$. The social welfare of a society thus does not depend on the size of the population.

The social appreciation of the combination of a certain (average) income level and a given income distribution is now determined by the form of the function $U(\cdot)$. The following conditions are generally imposed on $U(\cdot)$:

- (i) $U(y_i)$ increases as income rises (i.e. the first order derivative of $U(\cdot)$ is positive). This means that if the income of one household rises while the income of all other households remains the same, the social welfare SW also increases. This is designated as a preference for Pareto efficiency.
- (ii) The value placed by society on the income of a household, after correction for household size and the costs of children, is independent of which household is involved. In other words, the function $U(\cdot)$ is identical for every household; other personal characteristics are ignored as irrelevant.
- (iii) The value placed by society on an income is independent of any other income y_i . An increase in the income of household i thus has no influence on the social 'value' of the (unchanged) income of household j . Income differentials thus have no direct influence on social welfare.
- (iv) The value accorded by society to an increasing income declines as the income becomes higher (i.e. the second order derivative of $U(\cdot)$ is negative, or the function $U(\cdot)$ is concave). This implicitly expresses the degree of inequality aversion: if a low income rises by 1 euro and at the same time a high income falls by 1 euro, the level of social welfare will increase.

These four characteristics of $U(\cdot)$ enable the graphic reproduction of the preference for different combinations of income level and income distribution using social indifference curves. Figure B6.1 illustrates this for various income distributions for two households, i and j . The income of these households is shown on the axes.

Figure B6.1 Social welfare contours for two individuals



The social indifference curves in the graph link all combinations of income of households i and j which produce the same level of social welfare. An indifference curve which lies further towards the upper right represents a higher degree of social welfare (characteristic (i) in the list above). The fact that the social value of an income is independent of the specific household (characteristic (ii)) is apparent from the fact that the indifference curves are symmetrical relative to the 45-degree line. The degree of inequality aversion expressed in the specification of $U(\cdot)$ (characteristic (iv)) is evident from the curvature (concavity) of the indifference curves relative to the origin.

The points X and Y in figure B6.1 represent two income distributions which produce the same level of social welfare, since both lie on the same indifference curve. At point X , however, the incomes are distributed very unequally between i and j , whereas at point Y both incomes are equal. The income Y_e of both households at point Y is termed the 'equally distributed equivalent income' (*edei*) of the welfare level represented by this indifference curve. The greater the inequality aversion and the more curved the indifference curve, the lower will be the equally distributed equivalent income associated with the indifference curve that runs through point X .

Point Z in figure B6.1 portrays a situation in which the total income of i and j together is equal to that at point X , but in which the two have an equal income. This income is by definition equal to the average income μ of i and j in point X . Point Z shows the maximum social welfare level which could be achieved with the total income in point X .

The difference between the average income at point Z and the equally distributed equivalent income Y_e at point Y indicates how much income people at point X are prepared to 'sacrifice' in order to achieve income inequality. The stronger the aversion to inequality, the greater will be the difference between μ and Y_e .

B6.1.1 The role of inequality aversion

It can be demonstrated that the function $U(\cdot)$ which expresses the value placed by society on an income Y_e , which has the characteristics listed in points (i)-(iv) above and which is moreover homogeneous of degree 1 (i.e. an increase in the income by a factor k also causes an increase by a factor k in U), takes the following form (Atkinson 1970):

$$U(y_i) = a + \frac{by_i^{1-\epsilon}}{(1-\epsilon)}, \quad \epsilon \neq 1, \epsilon \geq 0 \quad (\text{B6.2})$$

$$U(y_i) = \ln(y_i), \quad \epsilon = 1$$

The parameter ϵ in these formulae expresses the degree of inequality aversion.

Now suppose that an income transfer takes place from a household with a high income to a household with a low income. If this has the effect to reduce the net income of the wealthy household by exactly the same amount as the income of the poor household increases, the level of social welfare will increase for every degree of inequality aversion. It is however possible that part of the income transferred 'leaks away', so that the fall in the net income of the wealthy household is greater than the increase in the net income of the poor household. The degree of inequality aversion, expressed by the parameter ϵ , then determines the percentage of the tax revenues which may leak away during the income transfer without bringing about a decline in social welfare.

Suppose household j has a higher income than household i ($y_j > y_i$). If household j has to pay an amount Δy_j in tax and social insurance contributions, while household i receives an amount Δy_i , the change in the level of social welfare will be approximately equal to:

$$\Delta SW = \frac{b}{N} (y_i^{-\epsilon} \Delta y_i - y_j^{-\epsilon} \Delta y_j), \quad \epsilon \neq 1, \epsilon \geq 0 \quad (\text{B6.3})$$

$$\Delta SW = \frac{\Delta y_i}{y_i} - \frac{\Delta y_j}{y_j}, \quad \epsilon = 1$$

Suppose the income of household j is p times higher than the income of household i . It can then be calculated (B6.3) that the extra amount paid by the wealthy household may be a maximum of p times greater than the amount received by the poor household without the level of social welfare falling.

Table B6.1 shows, for seven different values of the inequality aversion parameter, the maximum extra tax that may be taken from a wealthy household, and the percentage that may leak away, if a poor household with a three times or five times smaller income receives an additional 1 euro.

Table B6.1 Maximum tax and leakage rates (%) for different degrees of inequality aversion for an income ratio of 1:3 and 1:5

degree of inequality aversion (€)	1 : 3		1 : 5	
	maximum extra tax revenue	leakage rate	maximum extra tax revenue	leakage rate
0	1	0	1	0
0.25	1.32	24	1.41	29
0.5	1.73	42	2.24	55
1	3	67	5	80
2	9	89	25	96
3	27	96	125	99
4	81	98.8	625	99.8

Bron: SCP

If the degree of income inequality is not considered important (the inequality aversion = 0) and value is therefore attached only to the level of the total (or average) income, then in order to keep the level of welfare unchanged, nothing may leak away during an income transfer. If the inequality aversion is 1, 3 euros may be taken from the income of a wealthy household which is three times as wealthy in order to give the poor household 1 euro extra. Two-thirds (67%) may then leak away without affecting the level of social welfare. If the inequality aversion is 3, 27 euros may be taken from the household which is three times as wealthy and 96% may leak away without the level of social welfare reducing.

B6.2 Social welfare in 1994/1995

This appendix shows the equally distributed equivalent income (*edei*) and the ranking derived from it of six countries by social welfare in 1994/1995.

Table B6.2 The equally distributed equivalent income (*edei*) for different degrees of inequality aversion, 1994-1995

degree of inequality aversion	Norway (1995)	Netherlands (1995)	Germany (1994)	Canada (1994)	UK (1995)	USA (1994)
0	14,745	14,227	14,040	17,690	13,826	20,062
0.5	13,931	13,578	13,162	16,490	12,567	18,003
1	13,199	12,975	12,359	15,329	11,488	16,068
2	11,718	11,846	10,749	13,028	9,665	12,469
3	10,026	10,651	8,927	10,651	7,815	9,232
4	8,132	8,968	7,000	8,298	6,447	6,594
∞	573	657	503	571	453	474

Source: LIS; CBS (IPO'95) SCP treatment

Table B6.3 Ranking of countries by social welfare based on the equally distributed equivalent income for different degrees of inequality aversion, 1994-1995

degree of inequality aversion	Norway	Netherlands	Germany	Canada	UK	USA
0	3	4	5	2	6	1
0.5	3	4	5	2	6	1
1	3	4	5	2	6	1
2	4	3	5	1	6	2
3	3	2	5	1	6	4
4	3	1	4	2	6	5
∞	2	1	4	3	6	5

Source: LIS; CBS (IPO'95) SCP treatment

7 POVERTY

7.1 Introduction

A good deal of research has been carried out into poverty in the Netherlands in recent years, most of it published in the *Poverty Monitor (Armoedemonitor)* and the *Poverty and Social Exclusion Yearbook (Jaarrapport Armoede en sociale uitsluiting)* (SCP/CBS 1997, 1998, 1999; Engbersen et al. 1996, 1997, 1998, 1999). To date, however, the international comparative dimension has received only limited attention. This chapter seeks to fill that gap; first, however, it is necessary to look briefly at the nature of poverty in the modern welfare state.

Vrooman and Snel (1999) point out that in general poverty can be defined as a situation whereby a person or household is confronted with a financial deficit showing in an overly low income, excessive outgoings, or not being able to meet a certain standard of living. A characteristic of the modern welfare state is that the subsistence level is almost always guaranteed thanks to the fairly high level of wealth and the reasonably good social provisions. This then gives rise to the question of where the boundary between poor and not poor should be drawn, and also who establishes that norm. Broadly, in line with Hagenaaars et al (1987, 1988), three methods of establishing a poverty line can be distinguished:

- people are poor if they have less than an absolutely defined minimum;
- people are poor if they have less than others in the society in which they live;
- people are poor if they have less than what is considered sufficient.

According to definitions of the first type, poverty is absolute; according to the two other definitions, it is relative. The second definition is moreover objective in the sense that the opinion of those concerned plays no role in establishing the degree of poverty. Opinions do play a role in definitions of the third type, and these are therefore termed (inter)subjective poverty lines.

The definition of an *absolute* poverty line can be based on the 'biological minimum': the lowest amount that people need in order to ensure physical survival. For a modern welfare state such as the Netherlands, however, this criterion is hardly relevant, because virtually everyone will be above this threshold. A usable absolute poverty line must therefore be based on the customary needs in a society, which are concerned not just with the ability to survive, but rather with a basic package which is necessary for an acceptable level of existence (food, housing, heating, clothing), possibly supplemented by 'higher-order' needs (such as playing an active part in society, opportunities for personal development, employment). Of course, extensive discussion is possible on what constitute the 'customary needs' in a society. Moreover, general developments in welfare and product renewal mean that this is not a static given: as the level of welfare increases, ownership of certain goods will become the norm for a larger group of people; and goods which shortly after their introduction were reserved for the elite few may in time become so widespread that they also become 'indispensable' for the lowest income groups (e.g. the telephone).

Relative poverty lines are widely used in international comparative studies. They are based, for example, on a certain percentage of the average or median income, and thus also apply a general correction for differences in welfare levels between the different countries. There are

three objections to this approach. First, no direct relationship is established with people's needs. It is not clear in advance whether an amount of, say, 60% of the median income is enough to enable people to live in an acceptable manner – which is after all one of the core elements in the concept of poverty.

Additionally, in a comparison of countries which differ greatly in terms of the general welfare level it is unavoidable very diverging standards will be applied, with the result that the poverty in the various countries may be entirely different in nature. Thus a recent analysis carried out by Eurostat (1998: 179), which uses relative poverty lines, states that: '(...) Given the average living standards in each country, a poor person in Luxembourg could be among the relatively well-off in Portugal (...)'.¹

Finally, relative poverty lines are sensitive to the degree of income inequality. If the average income in two countries is equal but the degree of inequality in country A is smaller than in country B, then the poverty rate based on the relative threshold will also be lower in country A, all other things being equal.¹ It is also notable that, if the overall income inequality changes, a household with a constant income may be poor one year and not poor the next if a relative poverty line is used.

Subjective poverty lines are also used in international comparative research. For example, the European Community Household Panel (ECHP) contains a question on the minimum amount which people consider enough to make ends meet. Based on the average or mean value of the answers, a subjective poverty line can then be constructed, against which actual incomes can be set. The problems associated with a subjective measurement of poverty in one country – e.g. differing interpretations of concepts such as 'making ends meet' and 'minimum'; the fact that not all household members have the same insight into the household income and expenditure, so that the response depends on which person is asked the question – are reinforced in an international comparison by language and cultural differences. This does nothing for the validity of the measurement, as illustrated by the responses to the above ECHP question. The average 'minimum income required to make ends meet' in 1995 (expressed in purchasing power parities) is the lowest in the Netherlands of all EU countries, even below the levels in Greece and Portugal (Eurostat 1999: 68-69). This goes a long way to explaining the low poverty figure for the Netherlands based on this poverty threshold.

It is evident from the foregoing that there is no one single, clear poverty line which can be used to compare poverty levels in different countries in a valid and uniform way (for a more detailed summary of the pros and cons of the various poverty lines, see Vrooman and Snel 1999). In view of the measurement problems outlined, the subjective poverty lines – which are not included in most of the LIS databases anyway – are ignored here. Instead, one relative poverty line and two variants of the absolute poverty threshold are used.

Despite the reservations expressed earlier, the *relative poverty line* of the OECD and the EU (50% of average income) is used here because this is a customary criterion. In addition, however, an attempt is also made to measure poverty against two thresholds with a more absolute character, in the hope that this will produce a more complete picture.

The *national policy norms* of the countries studied form the second poverty threshold. These norms are absolute in each country, in the sense that it may be assumed that a national threshold value applies, relating to the required amounts in order to meet the 'customary needs' in the various countries. However, this absolute character does not apply unreservedly: other considerations (available collective budget, preferences, political feasibility) also play a role in establishing the minimum benefit norms, thus weakening the link with the needs of

households somewhat. Moreover, the customary needs in the different countries studied may vary, so that in a cross-comparative perspective the poverty lines become more or less relative. For the Netherlands, this poverty line is set at 95% of the statutory minimum (guaranteed minimum income). For most of the other countries, the line is taken as 95% of the minimum norms in the social legislation as reported by Eardley et al. (1996). For the United States, Canada and Australia, however, these authors do not give norm amounts, but rather an empirical estimate of disposable income at the minimum level; these amounts are also used here. Two lines are drawn for the United States: a high threshold (the minimum disposable income in New York) and a relatively low threshold (the minimum disposable income in Texas). For Germany the threshold is set at the norm amounts for 'Sozialhilfe' in the separate states, augmented by nationally imposed norms for basic rent and energy costs. The third threshold is the *Dutch statutory minimum*. Although the Dutch Social Assistance Act stipulates that this minimum must meet the essential costs of living, the levels of benefit are not directly related to people's needs as revealed by budget surveys, etc. The Dutch statutory minimum is a mix of absolute and relative criteria: a fixed amount which is indexed annually, enabling those dependent on benefit to take part in the growth in welfare (with the qualification that this link has not always been complete in the past). By applying the Dutch statutory minimum to other countries it is possible to calculate for each country what percentage of households would be counted as poor according to Dutch yardsticks. This can be seen as a 'thought experiment': inhabitants of other countries with an income below this threshold would be poor if they were to move to the Netherlands. However, this does not necessarily mean that they would be ranked among the poor in their own country: their income may be adequate according to the national criteria applying there, or may be sufficient to meet the customary needs in that country.² For this poverty line, the Dutch social assistance norms were applied to the disposable income distribution in the other countries as precisely as possible. Strictly speaking, poverty is defined as 95% of this statutory minimum. However, a variant with a slightly less stringent threshold, namely 105% of the Dutch statutory minimum, was also calculated.

As indicated in chapter 3, the hypotheses in this chapter relate to the level of poverty and the occurrence of certain risk groups in the various types of welfare state. The main hypothesis is: *Poverty is most widespread in the liberal countries and least widespread in the social-democratic countries. The corporatist states occupy an intermediate position.*

The underlying assumption here is that the level of social protection is greatest in the social-democratic countries (universal target group, high benefit levels) and lowest in the liberal welfare states (means testing and low benefits). The corporatist countries also have high benefits, but a more selective target group.

However, chapter 3 also states that poverty rankings can vary somewhat depending on the criterion used. As the OECD threshold is sensitive to income inequality, it is possible that the ranking of countries by poverty using this criterion may correspond to some degree with the results in chapter 5. Given the operationalisation of income chosen here – standardised household income based on the OECD equivalence scale – the ranking could particularly resemble that in figure 5.2. The most striking feature of that ranking was an opposition between the liberal welfare states and the other countries and, if the OECD norm correlates with the degree of inequality, it is plausible that this division will also be found in the poverty rates.

It was also pointed out in chapter 3 that deviations from the national norms can play a key role when applying the Dutch policy norms. The Dutch thresholds may be higher or lower than in other countries, and this can influence the rankings. For a relatively prosperous country the Dutch norms may be on the low side; this could result in a fairly low poverty rate, even where there are large concentrations at the lower end of the income distribution. In a relatively poor country, by contrast, application of the Dutch norms will produce large numbers of poor households. In addition to this 'threshold level effect', the deviations in the institutional structure can also influence the ranking of countries. Certain groups may receive greater or lesser income protection through social security and on the jobs market than in the Netherlands (relatively higher or lower benefits, minimum wages, etc.), as a result of cost differences, political judgments (e.g. with regard to financial incentives to go out to work) and differing views on the income protection needed by different groups (e.g. single-parent families, widows, civil servants). These structural differences may also have an impact on the number of poor households measured using the Dutch poverty threshold.

An absolute criterion is used for measuring poverty based on *national policy norms*. This means that there is no direct relationship with differences between countries in terms of inequality, as is the case with the OECD threshold. In addition, in contrast to the use of the Dutch statutory minimum, differences in welfare level and institutional structure do not play a major role here: each country's own criteria apply. It is therefore possible that the postulated ranking will be more visible with this threshold than with the other two poverty lines.

The usual subhypotheses, based on the extent to which countries share the characteristics of the three typical welfare states, apply within the country clusters (see figure 2.1):

- *In the liberal cluster, poverty is greatest in the United States. The poverty rate in Australia is slightly lower. Canada and the United Kingdom have the lowest relative number of poor households in this country cluster.*
- *In the social-democratic cluster, the level of poverty in Norway is higher than in Sweden and Denmark.*
- *The poverty rates within the corporatist cluster (Belgium, France, Germany) are equal.*
- *The Netherlands has relatively more poor households than the social-democratic countries, but fewer than the corporatist group.*

In addition to the ranking in terms of poverty rates, a number of hypotheses will be tested in this chapter for particular groups of risk:

- *A relatively large number of wage-earners are poor in the liberal states ('the working poor'), because of the absence of minimum wage protection.*
- *Self-employed workers are less frequently poor in social-democratic states than in liberal and corporatist states, because they benefit from the universal coverage of social security.*
- *Non-retired economically inactive people are often poor in liberal states because of the low level of benefits and the selective coverage. In social-democratic countries, this group runs less risk of poverty because of the high level of benefits and universal accessibility. The corporatist countries occupy an intermediate position, because high benefit levels there are combined with less universal coverage.*
- *The contrasts between the liberal, corporatist and social-democratic countries are less pronounced for pensioners than among younger economically inactive people, because most countries have fairly good pension protection, sometimes linked to supplementary private insurance.*

- *Young people living alone are more frequently poor in liberal and corporatist countries than in the social-democratic countries. In the liberal countries, these young people are confronted with low and selective levels of provision; in corporatist countries, the link with employment history means they less frequently have an entitlement to earnings-related benefits and are forced to rely on the less generous social safety net.*
- *The risk of poverty for single people aged 30-64 is comparable in the social-democratic and corporatist countries, and relatively high in the liberal countries. In contrast to young people, this group has frequently built up sufficient rights in the corporatist countries and is eligible for high benefits for a long period.*
- *Single-parent families are relatively frequently poor in liberal and corporatist countries, because they have fewer opportunities to work full-time (care tasks, little assistance with looking after children, etc.), and are forced to rely on the meagre residual welfare provisions, or have built up an insufficient employment history to be entitled to earnings-related provisions.*

Section 7.2 first looks at the differences in poverty rates according to the three thresholds, testing the hypotheses concerning differences in poverty rates between and within the three types of welfare state. Section 7.3 briefly discusses the correlation between poverty and income inequality, while section 7.4 presents a further analysis of the differences between the three poverty thresholds. Section 7.5 focuses on the subhypotheses relating to the various risk groups, and section 7.6 presents the conclusions.³

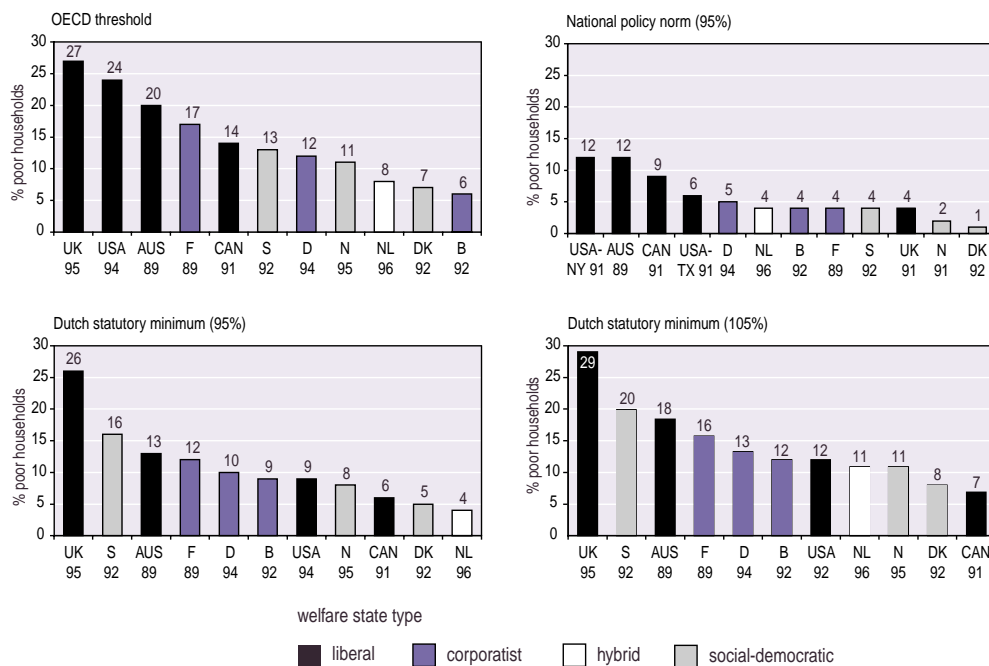
7.2 Poverty according to three income thresholds

Figure 7.1 shows the percentages of poor households according to the three thresholds. For the Dutch poverty threshold a subdivision has been made into households with an income below (up to 95%) or below or around (up to 105%) of the statutory minimum.

As might be expected based on Esping-Andersen's typology, the proportion of poor households below the OECD threshold is greatest in the liberal welfare states (20-27%). Canada forms an exception: together with France, Germany, Norway and Sweden this country forms part of a middle category (11-17% of households are below the OECD threshold). The proportion of poor households according to this criterion is lowest in Denmark, the Netherlands (7-8%) and Belgium (6%). Adopting this poverty line leads to a twofold division between the liberal welfare states (excluding Canada) and the rest.

Again in line with expectations, the percentage of households falling below the national policy norm is highest in the liberal welfare states: in the United States (according to the New York threshold), Canada and Australia the figure hovers around 11%. The United Kingdom forms an exception, with a poverty rate comparable with that of a number of other European countries (4%). Within the liberal cluster, the percentage of poor households in the United States is also relatively low according to the Texan norm (6%). The corporatist countries, as expected, form an intermediate group. Belgium, France and Germany have roughly the same proportion of poor households as the Netherlands (3-5%) based on their own policy norms. In line with the theoretical expectations, two social-democratic countries – Denmark and Norway – have low percentages of poor households based on their own national criteria (1% and 2%, respectively).

Figure 7.1 Poverty rate in 11 countries on the basis of the OECD threshold, the national policy norms and the Dutch statutory minimum income



Source: LIS; CBS (IPO'96)

The relative number of poor households with an income below 95% of the Dutch statutory minimum is lowest in the Netherlands, at 4%. Far and away the highest proportion of poor households (26%) are to be found in the United Kingdom according to this criterion, followed by Sweden (16% poor households), Australia (13%) and France (12%). This group is followed by Denmark, Canada, Norway, Germany, Belgium and the United States; the proportion of poor households in this latter group ranges from 5% (Denmark) to 10% (Germany). Raising the threshold to around the Dutch minimum (105%) of course leads to an increase in the number of poor households in all countries. This effect is greatest in the Netherlands: because all households in receipt of a minimum benefit now end up below the threshold, the poverty rate rises to 11%. The increase is less pronounced in the other countries, varying from +1 percentage point in Canada to +5 percentage points in Australia. The ranking of countries changes, mainly because of the sharp rise in the proportion of poor households in the Netherlands. The percentage of poor households is again highest in the United Kingdom (29%), though the figures are also high for France, Sweden and Australia (16-20%). The Netherlands now joins Germany, Norway, the United States and Belgium in the middle group (11-13% of poor households). The poverty rate according to this criterion is lowest in Canada and Denmark (7-8%).

All things considered, the differences *between* the country types are illustrated most purely when the national policy norms are used as the poverty threshold. Three liberal countries – the United States, Australia and Canada – have the highest poverty rate according to this criterion, two social-democratic states – Denmark and Norway – the lowest. The corporatist countries

and the Netherlands fall between these two extremes, fairly close to the social-democratic group. Contrary to expectations, the United Kingdom has a low poverty rate based on its own policy norms. As a result, the main cut-off point between poor and non-poor when using this threshold lies between the European and non-European welfare states, with some differentiation between the social-democratic and corporatist types.

Something of the expected differentiation can also be observed on the basis of the OECD threshold: there is a gap between the liberal states, with their high poverty rate, and the rest. However, the distinction between the social-democratic and corporatist countries is not visible with this criterion.

If the Dutch policy norm is used as a poverty yardstick, the ranking of countries becomes more confusing. Some observations are in line with expectations: two liberal countries (the United Kingdom and Australia) have the highest number of poor; the poverty rate in two social-democratic countries (Norway and Denmark) is low; and the three corporatist states do indeed form a middle group. However, there are some important exceptions to the expected pattern. According to this criterion, for example, the United States and Canada have relatively few poor households. The following section will investigate to what extent this has to do with the higher level of welfare in those countries, which would make the Dutch policy norm relatively low. Also, the high poverty rate of Sweden when using the Dutch criteria is remarkable. The Netherlands, finally, occupies the expected position between the social-democratic and corporatist countries if the norm is set at 105% of the Dutch statutory minimum; if the threshold is set at 95% of this minimum level, the poverty rate in the Netherlands is lower than in all the other countries, because few households end up below the statutory minimum level.

The postulated differences *within* the country clusters are also easier to observe with one poverty threshold than another. Three liberal countries shows more or less the expected pattern according to the national policy norms and the OECD threshold: the greatest degree of poverty in the United States, followed at a short distance by Australia and at a significantly greater distance by Canada. When applying these thresholds, however, the United Kingdom does not fit in with the expected pattern. According to the OECD threshold, the poverty rate in the United Kingdom is the highest of all countries, while according to the UK's own policy norm, the poverty rate matches that of the other European countries and is much lower than in Canada. Based on the third threshold, the Dutch statutory minimum, the ranking of the liberal countries is a less close match with expectations. Although the United Kingdom and Australia have a large number of poor households according to this threshold, the poverty rate in the United States and Canada is relatively low.

The differences between two countries in the social-democratic group tallies with expectations according to all poverty thresholds: Norway, which matches the ideal type less closely, has slightly more poor households than Denmark. Sweden does not however fit in with the expected pattern, since the percentage of poor households there is higher than in the other two countries, whichever threshold is used. The high poverty figure for Sweden in 1992 may be partly due to technical factors. However, there is also a more substantive explanation: the economic crisis in the early 1990s hit Sweden relatively hard, leading to a steeper rise in benefit dependency than in the other European countries. The number of benefit years below pensionable age rose by 22% in Sweden in 1991-1992, compared with +7% in Denmark and +1% in the Netherlands (Arents et al 1999). Based on Sweden's own policy norm, the number of poor households is slightly higher than in the two other Scandinavian countries, but is still

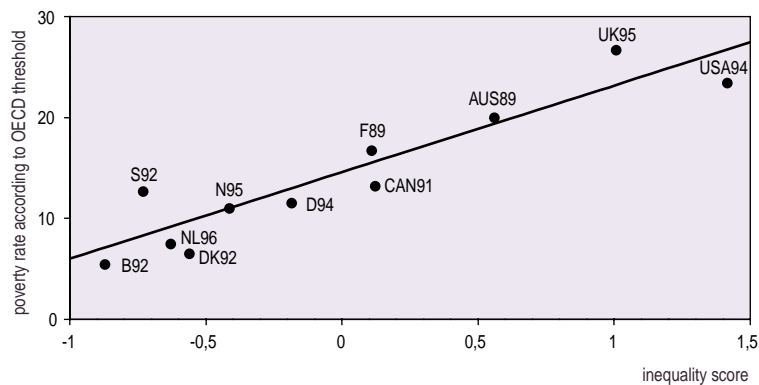
on the low side, comparable with the Western European countries. This indicates that the social safety net functions well, even in a period of economic recession. However, the income differentials do increase as benefit dependency rises, and this is reflected in the high Swedish poverty rate according to the OECD threshold, which is sensitive to the degree of income inequality. An analysis in the next section will show, however, that the poverty rate in Sweden is higher than would be expected on the basis of the inequality score. It is possible that this can be attributed to a special characteristic of the Swedish database, which also has some influence on the high percentage of poor households found on the basis of the Dutch statutory minimum. The database is based on 'tax units', implying that interns of the household (grown-up children or elderly living in, home-sharers) are each treated as separate households. As a consequence, the Swedish database has a relatively large number of small households and single persons with a low income. These can easily fall below the OECD threshold or the Dutch policy norm even though, if they cohabit with others, 'economies of scale' mean they need not necessarily be poor.

The poverty rates in the corporatist countries do not vary much from each other when their own policy norms or the Dutch statutory minimum are applied as a poverty threshold. This corresponds with expectations. However, the differences become very large when applying the OECD threshold: Belgium has the lowest poverty figure of all countries, Germany has twice as many poor households, France almost three times as many.

When applying the threshold of 105% of the Dutch statutory minimum, the poverty rate in the Netherlands is roughly as expected: between the social-democratic countries (except for Sweden) and the corporatist states. Based on the OECD threshold, the Netherlands tends towards the social-democratic countries, and when the national policy norms are applied, it tends towards the corporatist states. Only when the threshold of 95% of the Dutch statutory minimum is applied there is a deviation from the expected picture: the poverty rate in the Netherlands is then the lowest of all countries.

7.3 Poverty and income inequality

Some attention deserves to be given here to the relationship between poverty and income inequality. Earlier the expectation was formulated that the ranking of countries in terms of poverty based on the OECD threshold would show some correspondences with the patterns of income inequality in those countries, because of the completely relative nature of this threshold. Figure 7.2 shows the correlation between the OECD poverty rate and the degree of income inequality in the various countries. The latter is based on the scores on the first dimension in figure 5.2, the generalised inequality on the basis of seven indicators (of households, after standardisation with the OECD equivalence scale). The correlation turns out to be very strong: the correlation coefficient is 0.94, and the countries are very close to the regression line, which means that the poverty rate is directly proportional to the inequality score. To put it differently, the more unequal a country is, the more poverty will be found there on the basis of the OECD threshold.

Figure 7.2 Poverty according to the OECD threshold, by income inequality^a

- a Score on the first dimension of the correspondence analysis across seven inequality indicators for households, after standardisation using the OECD equivalence factor (cf. figure 5.2).

Source: LIS; CBS (IPO'96)

There are only a few deviations from this general pattern. The most important is Sweden, which has a significantly higher number of relatively poor households than would be expected on the basis of its inequality score. The same applies for the United Kingdom. Denmark, by contrast, has fewer poor households than expected, as does the United States. The other countries are positioned virtually on the regression line.

This leads to the conclusion that calculating relative poverty rates in the different countries does not produce much additional information compared with a more general comparison of countries in terms of inequality indicators. The relative poverty threshold is in many ways a different – and not necessarily better – means of measuring inequality. It is therefore hardly surprising that the poverty ranking of countries on the basis of the OECD threshold produces the same opposition between the liberal countries and the rest, which was found earlier in the analysis of inequality in standardised household income. The distances between the countries are also comparable, except for a few minor differences: the somewhat higher poverty rate in Sweden; the lower incidence of poverty in Denmark; the distinction between Canada and France in terms of poverty, which was not present in the comparison of income inequality; and the reversal of the positions of the United Kingdom (the poorest country on the basis of the 1995 measurement) and the United States (the most unequal country on the basis of the measurement in 1994).

For the sake of completeness, the relationship between income inequality and the other poverty thresholds was also examined. This relationship proves to be much less direct: the correlation between inequality and the national policy norms is 0.61; its correlation with 95% of the Dutch statutory minimum is 0.44; and with 105% of the Dutch policy threshold the correlation is 0.39.

7.4 The difference between the poverty thresholds

It was shown in section 7.2 that the position of countries in the poverty league table depends on the poverty threshold applied. As stated, the OECD threshold is a relative poverty line,

which is sensitive to the dispersion below the average of the income distribution: if the spread at the lower end of the distribution reduces, the percentage of poor households also shrinks. Various distortions and concentrations in the distribution, for example due to the level of the statutory minimum income, can mean that larger groups may fall below – or above – the 'half-mean' threshold.

The Dutch statutory minimum income offers an indication of the number of poor households according to the criteria that apply in the Netherlands. This ignores differences between countries in terms of prosperity and structure of provisions: the categories which apply in the Dutch social assistance, disability benefit and similar schemes are simply imposed on other countries.

Measuring poverty using national policy norms is an attempt to chart the extent of poverty on the basis of each country's own criteria. These may differ from the Dutch statutory income guarantee because the norm amounts in other countries can be higher or lower – as a result of differences in the general prosperity level, or different preferences with regard to income distribution – or because different administrative categories may be used. Even where this is not the case, poverty rates can vary because the relative size of population groups varies from country to country.

This section illustrates the operation of the three poverty thresholds in more detail. The example focuses on three countries, for which the three thresholds lead to relatively large differences in the percentage of poor households:

- the Netherlands, with a wide difference between the poverty rate according to the thresholds set at 95% and 105% of the Dutch statutory minimum income (4% and 11%, respectively);
- the United Kingdom, where there is a very wide difference between the poverty rate according to the UK national norm (4%) on the one hand and the OECD threshold and Dutch policy norms on the other (26-29%);
- the United States, with many poor households according to the OECD threshold (24%) and a more modest poverty rate based on the other criteria (6-12%).

Figure 7.3 first illustrates the total income distribution for these countries. The Netherlands has a high concentration of households at the lower end of the distribution. The number of households in higher income categories gradually reduces, indicating limited income inequality. In the United Kingdom, too, the income group with the most households lies towards the bottom of the distribution, but the peak is higher: more than 12% of households have an income of between 4,500 and 7,000 euro. The number of households in the subsequent categories declines fairly steeply, but compared with the Netherlands the distribution stretches further: there are more households in the United Kingdom in the highest income categories. This indicates that the degree of income inequality in the United Kingdom is higher than in the Netherlands.

The income distribution in the United States is much less peaked than in the two European countries. The income categories from 7,000 to 22,500 euro each contain roughly the same percentage of households (circa 5%), after which the relative number of households decreases fairly gradually as one climbs the income ladder. The top rungs of this ladder are also situated considerably higher than in the Netherlands and the United Kingdom. There is a high degree of income inequality in the United States, but households have a significantly higher income on average than in the other two countries.

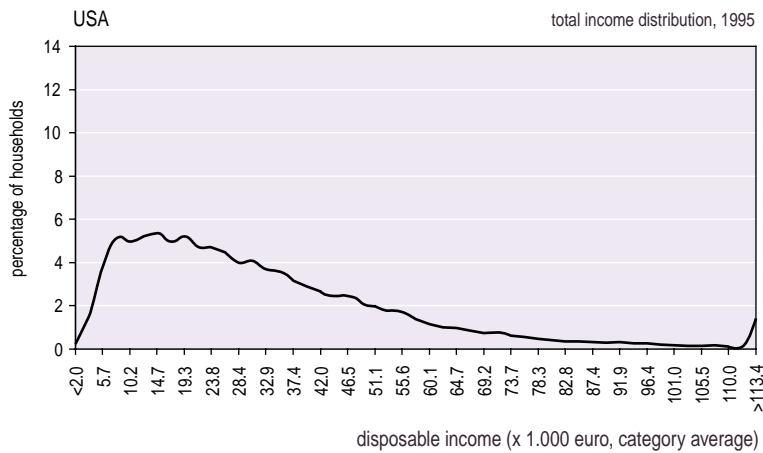
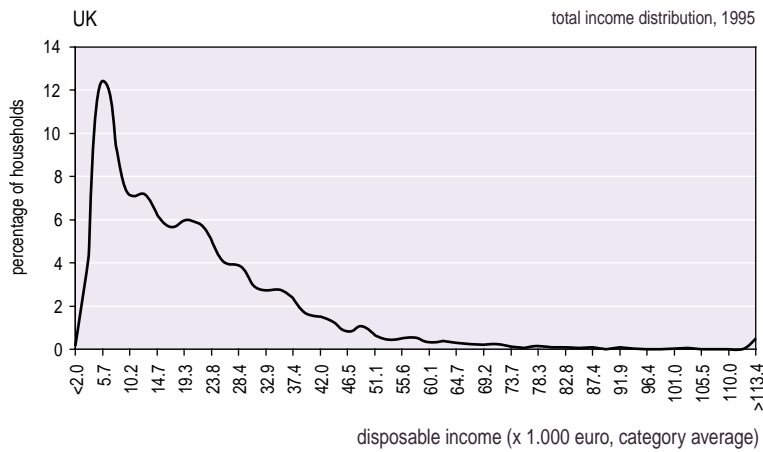
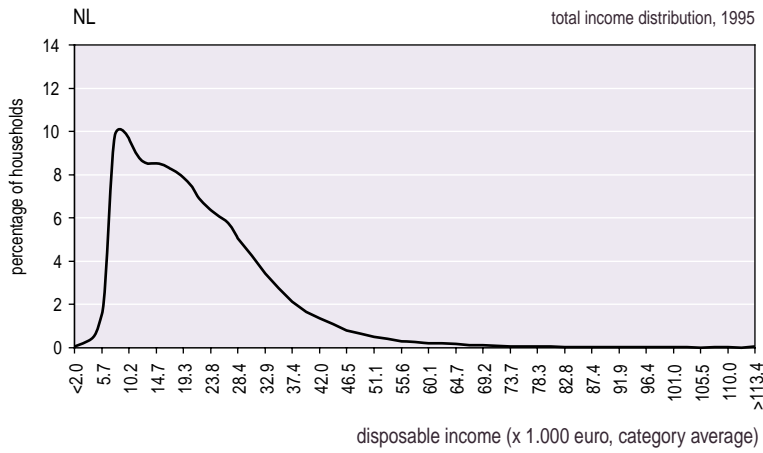
The figure also shows the poverty thresholds in the lowest portion of the income distribution for single persons. This is a partial picture – different thresholds apply for other household types and the distribution is also different – but it does offer an illustration of how the three poverty thresholds work out.

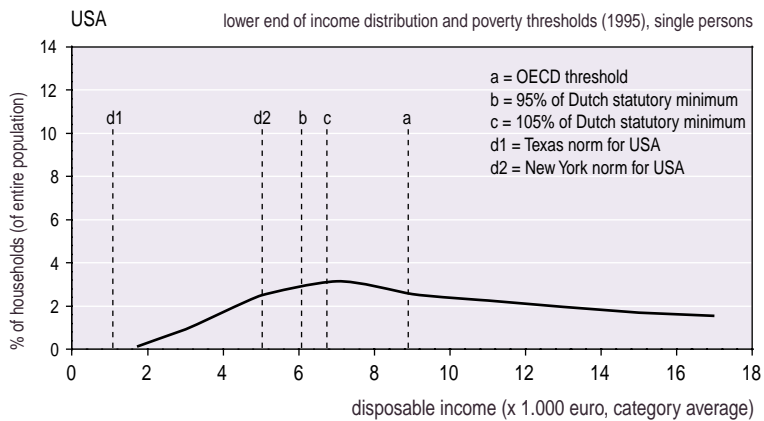
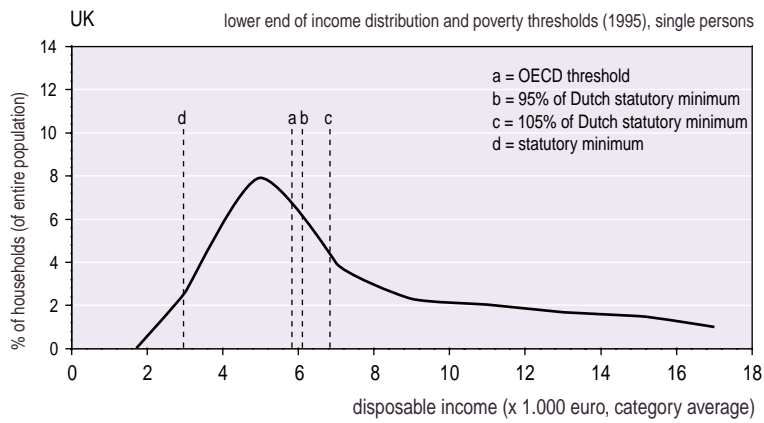
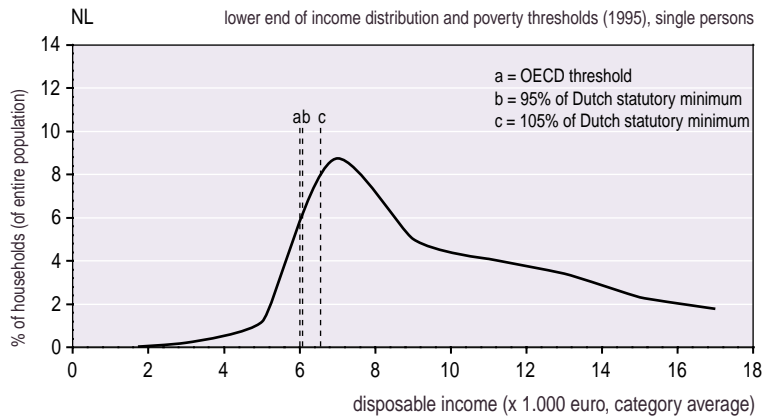
In the Netherlands, the three thresholds are fairly close together. For single persons the OECD norm and the 95% threshold virtually coincide, and there is just a slight distinction compared with the 105% threshold. The explanation for the considerable difference between the poverty rate according to the 95% and the 105% thresholds lies in the high concentration of benefit recipients who receive the norm amount. As a result, this segment of the income distribution is steep, so that a relatively small shift in the position of the threshold results in the selection of a large number of poor households.

In the United Kingdom the national norm is well below that in the Netherlands. The peak in the income distribution between this threshold and the OECD norm and the Dutch statutory minimum income gives rise to a very large difference in the poverty rate according to the national threshold and according to the other two criteria. In the United Kingdom, too, the OECD norm for single persons lies close to the threshold based on 95% of the Dutch statutory minimum.

The high average level of welfare in the United States means that the OECD threshold is much higher than in the other countries, and is also far higher than the other thresholds. For single persons the Dutch policy norms (95% and 105% of the statutory minimum income) are significantly higher than the statutory minimum incomes in New York and Texas; the latter is actually so low that the percentage of poor single households is negligible. What is striking is that the poverty rates according to the New York norm and the threshold of 105% of the Dutch statutory minimum are equal (12%, see figure 7.1), whereas the Dutch norm for single persons is higher and more poor households would therefore be expected on the basis of this criterion. However, this is offset by the fact that the threshold for couples with children in New York is higher than the Dutch statutory minimum (about 1,400 euro for a couple with two children).

Figure 7.3 Income distribution and poverty thresholds in the Netherlands, the United Kingdom and the USA





Source: LIS; CBS (IPO'95)

7.5 Groups of risk

A number of hypotheses were formulated in chapter 3 concerning the risk of poverty in certain population categories, depending on the type of welfare state in which they live. These risk groups are discussed here; in doing so, the country pattern based on all poverty thresholds is taken into account.⁴

The first four hypotheses relate to a number of socio-economic groups: employees, the self-employed, pensioners, and non-retired economically inactive individuals. Households are classified on the basis of the largest gross income constituent. France is left out of consideration in this subdivision, because no data are available on gross wages. Table 7.1 shows the findings based on the three poverty criteria (OECD threshold, national policy norms and 105% of the Dutch statutory minimum). For each socio-economic group, the poverty rate and the deviation from the national average is shown by country.

The hypothesis for wage employees was:

A relatively large number of wage-earners are poor in the liberal states ('the working poor'), because of the absence of minimum wage protection.

Table 7.1 shows that the risk of poverty for employees is lower in all countries than for the population as a whole, regardless of the poverty criterion applied. On the basis of the national policy norms and the Dutch statutory minimum, there is virtually no differentiation between the countries, and what differences there are, are not related to the type of welfare state. There is a striking deviation from the national average in the United Kingdom and Australia on the basis of the Dutch statutory minimum. While the total poverty rate according to this threshold is high in these countries, working people generally earn sufficient to remain above the Dutch statutory minimum income.

The OECD threshold is the only criterion which provides any confirmation for the hypothesis, at least for one liberal welfare state. The proportion of 'working poor' in the United States is more than twice as high as in the other countries (15% as opposed to 4-8% in most of the other countries). According to the other two thresholds, however, the share of poor households does not deviate much: working people in the United States generally earn more than the national policy norms and the Dutch statutory minimum, which lies well below the OECD threshold as a result of the difference in welfare levels (see previous section). The phenomenon of 'working poor' is thus found only in the United States, and is not a general feature of the liberal welfare states: the phenomenon is not found in the United Kingdom, Canada or Australia on the grounds of any of the three poverty thresholds applied. Moreover, the income disadvantage of this group in the United States is relative: if these people were to earn the same income in the Netherlands, they would much less frequently be classed among the poor.

The hypothesis for the second socio-economic group was as follows:

Self-employed workers are less frequently poor in social-democratic states than in liberal and corporatist states, because they benefit from the universal coverage of social security.

Some support for this hypothesis is found in the low poverty rates among self-employed workers in Denmark and Norway. However, Sweden carries the highest risk of poverty for the self-employed according to all criteria (between 11% and 28%, depending on the criterion used) and is the only country where the risk of poverty for this group lies well above the national average. Moreover, Norway and Denmark do not really stand out from the rest: the

risk of poverty among the self-employed is slightly lower in Germany according to two of the three poverty thresholds, and is only a fraction higher in Belgium. In the liberal United Kingdom, too, the risk of poverty for the self-employed is hardly any higher than in Norway and Denmark; as with employees, the percentage of poor self-employed people on the basis of the OECD threshold and the Dutch social minimum is much lower in the UK than the risk of poverty among the population as a whole. Moreover, the other two liberal welfare states score hardly any higher than the two social-democratic countries on two of the three poverty thresholds. Only according to the relative OECD threshold are substantial percentages of self-employed people found among the poor, and it is notable that in Canada the risk of poverty in this group is slightly higher than for the population as a whole (possibly as result of the large proportion of farmers among the self-employed). All in all, there is not sufficient evidence to declare this hypothesis proven: Sweden has the highest poverty figures among the self-employed, and Norway and Denmark do not set themselves apart sufficiently from countries (especially in Europe) with a different type of welfare state.

The theoretical postulation for the group to which the unemployed, disabled and benefit recipients belong is as follows:

Non-retired economically inactive people are often poor in liberal states because of the low level of benefits and the selective coverage. In social-democratic countries, this group runs less risk of poverty because of the high level of benefits and universal accessibility. The corporatist countries occupy an intermediate position, because high benefit levels there are combined with less universal coverage.

There is considerably more support for this hypothesis. The poverty rates among the economically inactive are very high in the liberal countries according to all criteria: half to three-quarters of this group are poor on the basis of the OECD threshold, one third to three-quarters on the basis of the Dutch statutory minimum. Particularly striking is the large group who fall below the 'absolute' Dutch threshold in countries with a high average level of welfare: in the United States the proportion of economically inactive people with an income below 105% of the Dutch statutory minimum is just as large as in the Netherlands (47%), and this group is also sizeable in Canada (32%). Based on the national policy norms, the differences between the liberal welfare states and the other countries are less marked, though it must be borne in mind that these norms are low, especially in the United Kingdom (see § 7.4).

The poverty rates among the economically inactive in the social-democratic countries are also generally low, as expected, though the percentage in Norway is slightly higher on the basis of the OECD threshold. The corporatist intermediate position is less clear-cut, however, because Belgium has relatively low poverty rates for the economically inactive and therefore comes closer to the social-democratic group. The risk of poverty for economically inactive people in Germany is more in line with the corporatist profile, lying roughly between that in the liberal and social-democratic countries; the Netherlands also displays this corporatist pattern.

Table 7.1 Risk of poverty in socio-economic groups on the basis of three poverty thresholds (poverty rate and deviation from the average per country)

socio-economic category (by type of welfare state and country+ measurement year)	poverty threshold					
	OECD threshold		national policy norm (95%)		Dutch statutory minimum (105%)	
	%	deviation ^a	%	deviation ^a	%	deviation ^a
employees						
<i>social-democratic</i>						
- Sweden (1992)	8	-5	4	0	9	-11
- Norway (1995) ^b	6	-5	1	-1	6	-5
- Denmark (1992)	4	-3	1	0	3	-5
<i>hybrid</i>						
- Netherlands (1996)	4	-4	1	-3	2	-9
<i>corporatist</i>						
- Germany (1994)	7	-5	3	-2	6	-7
- Belgium (1992)	1	-5	2	-2	3	-9
- France (1989)	.	.	.	.	.	.
<i>liberal</i>						
- United Kingdom (1995) ^b	7	-20	1	-3	6	-23
- United States (1994) ^b	15	-9	4	-8	6	-6
- Canada (1991)	7	-7	1	-8	4	-3
- Australia (1989)	5	-15	2	-10	3	-15
self-employed						
<i>social-democratic</i>						
- Sweden (1992)	23	+10	11	+7	28	+8
- Norway (1995) ^b	6	-5	1	-1	6	-5
- Denmark (1992)	6	-1	2	-1	6	-2
<i>hybrid</i>						
- Netherlands (1996)	11	+3	7	+3	8	-3
<i>corporatist</i>						
- Germany (1994)	4	-8	3	-2	4	-9
- Belgium (1992)	7	+1	3	-1	9	-3
- France (1989)	.	.	.	.	.	.
<i>liberal</i>						
- United Kingdom (1995) ^b	7	-20	4	0	6	-23
- United States (1994) ^b	21	-3	6	-6	8	-4
- Canada (1991)	20	+6	4	-5	8	+1
- Australia (1989)	13	-7	2	-10	7	-11
inactive, not retired						
<i>social-democratic</i>						
- Sweden (1992)	19	+6	5	+1	33	+13
- Norway (1995) ^b	28	+17	4	+2	31	+20
- Denmark (1992)	18	+11	2	+1	18	+10
<i>hybrid</i>						
- Netherlands (1996)	31	+23	13	+9	47	+36
<i>corporatist</i>						
- Germany (1994)	33	+21	11	+6	37	+26
- Belgium (1992)	15	+9	4	0	30	+18
- France (1989)	.	.	.	.	.	.
<i>liberal</i>						
- United Kingdom (1995) ^b	78	+51	9	+5	80	+51
- United States (1994) ^b	72	+49	13	+1	47	+35
- Canada (1991)	53	+39	29	+20	32	+25
- Australia (1989)	69	+49	39	+27	66	+48

Table 7.1 (cont.) Risk of poverty in socio-economic groups on the basis of three poverty thresholds (poverty rate and deviation from the average per country)

socio-economic category (by type of welfare state and country+ measurement year)	poverty threshold					
	OECD threshold		national policy norm (95%)		Dutch statutory minimum (105%)	
	%	deviation ^a	%	deviation ^a	%	deviation ^a
pensioners						
<i>social-democratic</i>						
- Sweden (1992)	21	+8	1	-3	39	+19
- Norway (1995) ^b	12	+1	0	-2	16	+5
- Denmark (1992)	5	-2	1	0	8	0
<i>hybrid</i>						
- Netherlands (1996)	3	-5	2	-2	13	+2
<i>corporatist</i>						
- Germany (1994)	8	-4	4	-1	11	+2
- Belgium (1992)	12	+6	2	-2	28	+16
- France (1989)	.	.	.	.	.	.
<i>liberal</i>						
- United Kingdom (1995) ^b	33	+6	5	+1	42	+13
- United States (1994) ^b	28	+4	29	+17	15	+3
- Canada (1991)	9	-5	32	+23	2	-5
- Australia (1989)	41	+21	40	+28	45	+27

a Relative to the national average, in percentage points.

b For the national policy norm the figure shown is for 1991. In the United States this is the policy norm that applies in New York.

Source: LIS; CBS(IPO'96)

The final socio-economic group contains older economically inactive people. The hypothesis for this group was as follows:

The contrasts between the liberal, corporatist and social-democratic countries are less pronounced for pensioners than among younger economically inactive people, because most countries have fairly good pension protection, sometimes linked to supplementary private insurance.

Since the difference between the poverty risk for older and younger economically inactive people is much greater in the liberal countries than in the other two types of welfare state, the variation between the countries is, as predicted, less pronounced among pensioners.⁵ The distinction between different types of welfare state is blurred for this hypothesis. There is a simple two-way divide between pensioners in the liberal countries and the rest, and even this difference is not consistent. Canada tends towards the characteristics of the non-liberal countries on the basis of the OECD threshold, while on the basis of the Dutch statutory minimum Canada and the United States have low poverty rates – probably because pensions are often related to previous earnings, which are higher on average in these countries.

Table 7.2 shows the poverty rates for two household types, in which single-person households have been divided into two age categories. The following hypothesis was formulated earlier for single persons aged under 30:

Young people living alone are more frequently poor in liberal and corporatist countries than in the social-democratic countries. In the liberal countries, these young people are confronted with low and selective levels of provision; in corporatist countries, the link with employment history means they less frequently have an entitlement to earnings-related benefits and are forced to rely on the less generous social safety net.

Table 7.2 Risk of poverty of a number of household types, based on three poverty thresholds (poverty rate and deviation from the average per country)

type of household (by type of welfare state and country+measurement year)	poverty threshold					
	OECD threshold		national policy norm (95%)		Dutch statutory minimum (105%)	
	%	deviation ^a	%	deviation ^a	%	deviation ^a
single person, < 30 years						
<i>social-democratic</i>						
- Sweden (1992)	33	+20	2	-2	16	-4
- Norway (1995) ^b	33	+22	2	0	10	-1
- Denmark (1992)	29	+22	1	0	6	-2
<i>hybrid</i>						
- Netherlands (1996)	13	+5	8	+4	16	+5
<i>corporatist</i>						
- Germany (1994)	28	+16	3	-2	18	+5
- Belgium (1992)	8	+2	3	-1	14	+2
- France (1989)	15	-2	2	-2	15	-1
<i>liberal</i>						
- United Kingdom (1995) ^b	22	-5	2	-2	33	+4
- United States (1994) ^b	28	+4	29	+17	15	+3
- Canada (1991)	25	+11	15	+6	20	+13
- Australia (1989)	14	-6	34	+22	29	+11
single person, 30-64 years						
<i>social-democratic</i>						
- Sweden (1992)	5	-8	18	+14	34	+14
- Norway (1995) ^b	8	-3	11	+9	32	+21
- Denmark (1992)	5	-2	2	+1	25	+17
<i>hybrid</i>						
- Netherlands (1996)	5	-3	5	+1	19	+8
<i>corporatist</i>						
- Germany (1994)	15	+3	13	+8	32	+19
- Belgium (1992)	6	0	7	+3	9	-3
- France (1989)	12	-5	5	+1	12	-4
<i>liberal</i>						
- United Kingdom (1995) ^b	28	+1	2	-2	25	-4
- United States (1994) ^b	23	-1	29	+17	15	+3
- Canada (1991)	25	+11	16	+7	17	+10
- Australia (1989)	27	+7	22	+10	12	-6
single parent families, <65 years						
<i>social-democratic</i>						
- Sweden (1992)	10	-3	1	-1	16	-4
- Norway (1995) ^b	22	+11	1	-1	35	+24
- Denmark (1992)	12	+5	1	0	8	0
<i>hybrid</i>						
- Netherlands (1996)	41	+33	18	+14	47	+36
<i>corporatist</i>						
- Germany (1994)	47	+33	12	+7	47	+34
- Belgium (1992)	6	0	9	+5	13	+1
- France (1989)	42	+25	17	+13	39	+23
<i>liberal</i>						
- United Kingdom (1995) ^b	68	+41	7	+3	67	+38
- United States (1994) ^b	50	+26	1	-11	26	+14
- Canada (1991)	45	+31	0	-9	23	+16
- Australia (1989)	44	+24	5	-7	41	+23

a Relative to the national average, in percentage points.

b For the national policy norm the figure shown is for 1991. In the United States this is the policy norm that applies in New York.

Source: LIS; CBS (IPO'96)

This hypothesis finds only limited support in the empirical results. If the national policy norms are taken as a basis, the rate of poverty among single persons is admittedly very low in the social-democratic countries, but this also applies for the corporatist welfare states and the United Kingdom. Measured against the Dutch statutory minimum, the poverty rates are, as expected, lowest in Denmark and Norway (6% and 10%, respectively), but the rate in Sweden does not differ from that in the corporatist welfare states and the Netherlands. If the assumption is correct that the figure in Sweden is relatively high because of economic factors in the measurement year – as a result of rising youth unemployment during the recession which hit this country hard – then the findings on the basis of this criterion match the hypothesis most closely. The outcome on the basis of the OECD threshold is however completely contrary to expectations: the poverty rate among young people living alone is higher in the three social-democratic welfare states than in all other countries.

For older single people below retirement age, the hypothesis was as follows:

The risk of poverty for single people aged 30-64 is comparable in the social-democratic and corporatist countries, and relatively high in the liberal countries. In contrast to young people, this group has frequently built up sufficient rights in the corporatist countries and is thus eligible for high benefits for a long period.

On the basis of the OECD threshold, this idea must be largely rejected. A threefold division is found, in which the lowest poverty rates occur in the Scandinavian countries, the Netherlands and Belgium. In the latter country, therefore, the risk of poverty is as expected comparable with that of the social-democratic countries (5-8%). In the two other corporatist countries, however, the level is significantly higher (12% in France, 15% in Germany), though it is still in below the level in the liberal welfare states (23-28%).

On the basis of the national policy norms and the Dutch statutory minimum, the hypothesis is more than confirmed: the poverty rates in the corporatist welfare states tend to be lower rather than higher than in the social-democratic states, a finding which is difficult to explain on theoretical grounds. The proportion of poor single people in the corporatist countries varies between 5% and 13% according to the national norms, and from 9% to 32% on the basis of the Dutch statutory minimum. The corresponding figures in the social-democratic countries are 2-18% and 25-34%, respectively. The liberal welfare states, finally, do not form a homogeneous group on these two criteria. On the basis of the national policy norms, Australia and the United States are the only countries where the proportion of poor single people is higher than in the other two country clusters. Based on the Dutch statutory minimum, the percentage rate of poverty among single people is even less extreme: the liberal countries are now positioned roughly between the continental and social-democratic groups.

The final hypothesis relates to single-parent families:

Single-parent families are relatively frequently poor in liberal and corporatist countries, because they have fewer opportunities to work full-time (care tasks, little assistance with children, etc.), and are forced to rely on the meagre residual welfare provisions or have built up an insufficient employment history to be entitled to earnings-related provisions.

If Belgium is left out of consideration, the findings match the hypothesis well. According to all criteria, the number of poor lone-parent families is lowest in the social-democratic countries, although on the basis of the national policy norms the poverty rate in Canada and the United States is comparable (1%). The poverty rate in Norway turns out higher on the basis of the OECD threshold and the Dutch statutory minimum, but this does not contradict the theoretical expectation: this country matches the ideal type less closely than the other two social-democratic welfare states.

There are two further striking results here. On the basis of the OECD threshold Belgium has a very low percentage of poor single-parent families: 6%, the same as the total among all households. In the other corporatist and social-democratic welfare states and the Netherlands, the risk of poverty for lone-parent families is much higher on the basis of this criterion (between 10% and 47%). The reason for this lies in the fact that the Minimax benefit for single parent families in Belgium is relatively high, being set at the same level as that for couples (in 1997 more than 950 euro net per month). This reduces the relative risk of poverty for single parent families and, in addition to the low level of general inequality, is one of the reasons for the low percentage of poverty in Belgium on the basis of the OECD threshold. The fact that the proportion of poor single-parent families on the basis of the national norms is not particularly low in Belgium does however indicate that this group does not always actually receive the high level of benefit prescribed.

In the United States the proportion of poor single-parent families is very low on the basis of the national policy thresholds (1%), whereas the proportion of poor single persons was high according to this criterion (29%). The latter is explained by the fact that the high norm applying in New York is not achieved in many other states (see figure 7.3). For single-parent families, the norm differences between states are smaller and the *Aid to families with dependent children* (AFDC, now superseded by the *Temporary assistance to needy families*) ensures that the incomes are higher than those of single people.

7.6 Conclusions

The existence of three worlds of *welfare capitalism* – the central hypothesis in this chapter, too – is only partially confirmed on the basis of the poverty figures. Application of the OECD threshold, which is widely used in international studies, produces a twofold division between the liberal group on the one hand and the social-democratic and corporatist welfare states on the other. This division corresponds with the ranking of countries in terms of income inequality, and the question may therefore be asked as to whether the OECD threshold actually measures poverty. Its completely relative nature means it ignores what Sen (1983) refers to as the absolute core of poverty – the passing of a threshold which reflects the customary needs in a society (see also Vrooman and Snel 1999).

If the Dutch statutory minimum income is used as the poverty threshold, the three-way division is distorted by the relatively low poverty rates in Canada and, to a lesser extent, the United States. This is primarily due to the high general welfare level in these countries, which means that the Dutch poverty threshold is relatively low – below the OECD norm – when it is projected on the income distribution in these countries.

If the national policy norms applying in the countries concerned are taken as a starting point, the picture that emerges corresponds reasonably well with Esping-Andersen's typology. This is in line with the expectation stated in the introduction to this chapter, namely that this threshold measures more than inequality and is not affected by differences in the level of prosperity, as is the case when the Dutch statutory minimum is used as a criterion. As each country is judged

on the basis of its own criteria, this is perhaps the most satisfactory operationalisation of poverty – although discussion is possible regarding the indicators chosen here (among other things because for some countries we did not use norm amounts, but empirically established levels).

As regards the differences *within* the country clusters, the ranking is largely in line with expectations for the liberal countries based on the national policy norms and the OECD threshold. This does not however apply for the United Kingdom; the high level of inequality in the UK means there is a great deal of poverty in this country on the basis of the OECD threshold, whereas the relatively low level of social assistance means there are few poor people according to the UK's own policy norms.

If the Dutch statutory minimum is applied as a poverty threshold, the ranking of the liberal countries no longer matches the expectations. The high absolute level of welfare in the United States and Canada means that this threshold is fairly low in these countries.

In the social-democratic cluster the poverty rate, as expected, is slightly higher in Norway than in Denmark. Contrary to expectations, however, Sweden comes out even higher. Apart from a typical characteristic of the Swedish database (which consists of 'tax units'), this probably has to do with the unfavourable economic situation and the relatively strong rise in the number of benefit claimants in the early 1990s.

In line with expectations, there is little differentiation between the corporatist countries if the countries' own policy norms or the Dutch statutory minimum are applied as poverty threshold. When the OECD poverty threshold is applied, however, the differences are very large: Belgium has the lowest poverty figure of all countries; Germany has twice as many poor households, France almost three times as many. This corresponds with the differences between these countries based on the inequality indicators in chapter 5.

If the spotlight is focused on the *Netherlands*, it can be concluded that the poverty rate is low to moderate by international standards. If the poverty threshold is set at 95% of the Dutch statutory minimum income, the percentage of poor households is the lowest of all countries studied (4%). If the poverty line is raised to 105% of the statutory minimum, the percentage of poor households in the Netherlands rises sharply, due to the large group of benefit recipients receiving a minimum income. On the basis of this threshold, the Netherlands occupies a middling position internationally, with 11% poor households. If the poverty threshold is set at half the average income (8%) or if the national policy norms of each country are taken as a basis, the Netherlands is also among the countries with a low level of poverty, though Denmark in particular comes out lower.

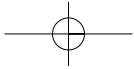
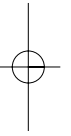
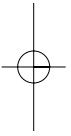
Finally, not all hypotheses concerning *risk groups* are confirmed by the empirical material. Contrary to expectations, 'working poor' are not found in all liberal welfare states, though they do constitute a sizeable group in the United States, where 15% of employees fall below the OECD poverty threshold. This form of poverty is relative, however: the majority of the American 'working poor' are not in fact poor measured against the criteria which apply in the Netherlands.

As expected, the risk of poverty for economically inactive people below retirement age proves to be highest in the liberal countries and lowest in the social-democratic welfare states. Belgium aligns with this latter cluster on this aspect. Germany (and the Netherlands) occupies the postulated intermediate position. Also in line with expectations is the fact that the oppositions between the types of welfare state are less marked for older economically inactive

people, because many countries have reasonable income protection for pensioners. For single-parent families the risk of poverty is, as predicted, lower in the social-democratic countries than in the corporatist and liberal welfare states. Here again, however, Belgium aligns with the social-democratic cluster, partly because of the high level of the *Minimex* benefit for which this group are eligible.

Notes

- 1 Other aspects of the distribution, such as skewness and peaks, also play a role here.
- 2 It must be borne in mind here that there may be differences between countries as regards what has to be paid for from this amount. An analysis of freely disposable income could therefore lead to a different picture, for example because own contributions, subsidies and waiver arrangements (provisions in the area of tertiary income) vary between countries. In the measurement of disposable income applied here, allowance has been made for contributions to the collective health care insurance schemes.
- 3 Parts of sections 2, 3 and 4 were published in the Armoedemonitor 1998 (Poverty Monitor 1998) (SCP/CBS 1998), and in Wildeboer Schut and Vrooman (1998).
- 4 Attention needs to be given to the sensitivity of the composition of the poor population to the equivalence scale. In the national policy norms, including the Dutch norm, this scale is an institutional given. As regards the OECD threshold, earlier research has shown that the ranking of countries in terms of poverty is relatively insensitive to the equivalence scale but that the composition of the poor population is influenced by it. De Vos and Zaidi (1997: 332) conclude that the scale used in here is adequate: 'As a pragmatic choice, the modified OECD-scale appears to be a reasonable compromise.'
- 5 The difference between the highest and lowest value among economically inactive people below retirement age is 63 percentage points according to the OECD threshold, 37 according to the national policy norms and 62 according to the Dutch statutory minimum. For pensioners the figures are 38, 40 and 45 percentage points, respectively. The dispersion around the average (standard deviation) is 24.2, 12.0 and 18.6 for the three poverty thresholds among younger economically inactive people, and 12.9, 15.5 and 15.4 for pensioners. According to the OECD threshold and the Dutch statutory minimum, the differences between the countries are therefore smaller in the case of pensioners than for younger economically inactive individuals; on the basis of the national policy norms the differences are roughly comparable.



8 SUMMARY AND CONCLUSIONS

8.1 The traditional functions of the welfare state

Western welfare states came under heavy fire in the 1980s and 1990s. Many of the social and economic problems with which Western European countries were grappling were attributed partially, or even primarily, to the inadequate functioning of the welfare state. Whether it comes to the high unemployment, low level of labour force participation, sluggish economic growth, higher burden of taxation and social security charges or the sizeable national debt – for each of these problems an accusing finger was frequently pointed at the welfare state. Whereas the welfare state tended to come under criticism in the 1970s for its inability to compensate sufficiently for the socially undesirable consequences of the free market, in the 1980s and 1990s it was accused of interfering with the smooth operation of market forces. Put differently, from being a solution to the problems of a modern capitalist society, the welfare state itself increasingly was considered the problem, to which a strengthening of market forces was the obvious solution.

The widespread and indeed often justified criticism of the functioning of the welfare state means, however, that the very reason why the welfare state came into being in the first place is at risk of being lost to sight. Whatever the shortcomings of the present day welfare state may be, it is also undeniable that a free, unregulated market is subject to all sorts of imperfections. One need only reflect on how a modern society would look without the institutions and arrangements of the welfare state in order to realise that, had the welfare state not existed, it would have had to be invented. A developed modern society without a welfare state is simply inconceivable. Over the past ten years, the emphasis on the inadequacies of the welfare state has deflected attention from the fulfilment of its traditional protective tasks. The observation that a high proportion of a country's national income is devoted to social security, or that the distribution of earned income is substantially adjusted, tends to be taken as an indication of the disruptive effect of the welfare state rather than of its success.

This study has focussed on the traditional objectives of the welfare state: protection against loss of income, combatting poverty and limiting social inequality. It has long been known that the extent to which the welfare state fulfils these traditional functions varies widely among the wealthy Western countries. For some researchers this has provided grounds for discerning a number of 'types' of welfare state. In the 1970s, for example, Titmuss distinguished three welfare state models: the residual welfare model, the industrial achievement model and the institutional redistributive model (Titmuss 1974). In the first model the welfare state amounts to no more than a social security net; in the second the welfare state is primarily concerned with the protection of (former) employees; and in the third the welfare state aims at safeguarding the entire population.

The threefold division made by Esping-Andersen in his book *The Three Worlds of Welfare Capitalism* (1990) has attracted considerable attention in recent years. Diverging from Titmuss, Esping-Andersen does not base his classification on the traditional protective functions of the welfare state, but on the underlying socio-political relationships and labour market policy. This does not eliminate the fact that his classification of liberal, corporatist and social-democratic regimes largely corresponds with Titmuss's three welfare state models.

8.2 Three worlds of welfare state capitalism, plus the Netherlands

Esping-Andersen's differentiation of three welfare state regimes is based on 'ideal types', and only to a limited extent on an empirical analysis of the differences and similarities between the various welfare states. This study tries to chart the actual differences between welfare states on the basis of Esping-Andersen's criteria. To this end 11 welfare states have been measured in terms of varying aspects.

Chapter 2 examines the extent to which countries may indeed be clustered into three types on the basis of the institutional features of the welfare state. This seeks to provide empirical support for the three Esping-Andersen welfare state types. To this end a principal components analysis has been conducted on 58 institutional characteristics of 11 western welfare states, namely Australia, Belgium, Canada, Denmark, France, Germany, the Netherlands, Norway, Sweden, the United Kingdom and the United States. The choice of these countries is based on their central position in Esping-Andersen's classification, and on the availability of comparative empirical data on income distribution needed for the further analysis in this study (see below). The institutional characteristics in terms of which the countries have been compared with one another concern the funding of the welfare state (including tax rates), the regulation and structure of the labour market (including the minimum wage, collective agreement coverage rate, labour force participation of women and the share of the service sector in employment), and the level and coverage of the social security arrangements for old age, surviving dependants, children, disability, unemployment and social assistance.

The data used for the empirical institutional analysis relate to the early 1990s. This is because the analysis of income distribution and poverty in the remainder of the study also largely concerns the 1990s. Moreover, an analysis based on figures from the early 1990s is an update of the original (limited) empirical analysis of Esping-Andersen (1990), which related to the early 1980s.

In broad terms the analysis of these welfare state characteristics confirms Esping-Andersen's threefold classification, although there are a number of not insignificant differences. Sweden, Denmark and Norway form a cluster of social-democratic welfare states. Within this cluster Sweden turns out to share its position as a country which most closely approximates the ideal-type of a social-democratic welfare state with Denmark. Norway has a less pronounced social-democratic system. Germany, Belgium and France form a cluster of corporatist welfare states, which it is not possible to rank in terms of 'purity'. The remaining four countries – the United Kingdom, Canada, Australia and the United States – form a liberal Anglo-Saxon cluster. As expected, the United States turns out to be the predominant liberal welfare state, followed at a short distance by Australia. The UK and Canada are at a significantly greater distance from the liberal ideal-type, and also share certain institutional characteristics with the social-democratic welfare states.

Classifying the Netherlands provided Esping-Andersen with some problems. Although he is inclined to consider the Netherlands one of the corporatist countries, he recognises that it also has some social-democratic features. The empirical analysis confirms that the Netherlands has to be regarded as a 'hybrid' welfare state, roughly half-way between the social-democratic and the corporatist type.

On the basis of this analysis of institutional characteristics, three welfare states types may therefore indeed be identified, although the Netherlands does not fit into that classification.

8.3 Scope and data

The classification of the 11 welfare states into three clusters plus the Netherlands as a hybrid welfare state has been taken as the point of departure for the empirical analysis in the rest of this study. Whereas the traditional welfare state functions of income protection and income redistribution play a subordinate role in Esping-Andersen analysis, this study focuses on the extent to which Esping-Andersen's typology is also relevant for these functions. Chapter 3 formulates a number of hypotheses in this regard, broadly coming down to the fact that the traditional functions of the welfare state are 'best' fulfilled by the social-democratic welfare states and least well by the liberal welfare states, with the corporatist welfare states somewhere in between. The expectation is that within the clusters the countries which approximate the ideal-type the most closely will exhibit the most 'extreme' scores. In other words, Sweden and Denmark will form one end of the spectrum on the basis of the hypothesis and the United States the other. Usually the Netherlands is assigned a place in between the social-democratic and the corporatist welfare states.

The hypotheses tested concern:

- income redistribution by means of taxation and social security,
- the degree of inequality in disposable household income,
- the level of social welfare (as a combination of income level and income equality), and
- the extent of poverty.

Accordingly, the attention is confined to the impact of the welfare state on the level and distribution of (disposable) income. Other highly important functions of the welfare state – the provision of facilities in the field of healthcare, care of the elderly, education, housing, child care and so on – have been left out of account. Hence, this study does not pretend to describe the effects of various types of welfare state on all aspects of individual and collective welfare. Detailed attention to an international comparison of other public services is devoted in the SCP's *Social and Cultural Report 2000*, also available in English (SCP 2001).

Another limitation of this study is that the differences in outcomes in relation to the distribution of income, income level and poverty are solely related to the welfare state type. Needless to say, these differences are also affected by many other determinants, such as demographic and economic factors (e.g. population size and growth, age structure, state of the economy and sectoral structure). However, given the limited number of 11 countries on which the necessary income data were available, it has not been possible to conduct a (multivariate) analysis taking account of multiple background characteristics. This has been the subject of explicit attention only where a direct relationship between the results of the analysis and the specific background characteristic were reasonably self-evident (such as the effect of the proportion of elderly people in the population on social security spending).

The empirical analysis of the income effects of various states has been carried out in this study with the aid of data from the *Luxembourg Income Study* (LIS), a set of micro-databases with income data on a number of countries. Most of the analyses were conducted on data from the early 1990s. Databases on the mid-1990s were available for only a limited number of countries at the time of the study (Canada, Germany, the Netherlands, Norway, the UK and the US). The LIS agency seeks to promote the comparability of the databases as far as possible. Nevertheless the data of various countries have limitations that inhibit effective comparison. This applies in particular to the databases of France, Canada and Sweden, which lack data on

social security contributions, while the Swedish database employs a different household definition. The results for these countries need therefore to be interpreted with some caution. In the case of the Netherlands use was not made of the database forming part of the LIS (the Socio-Economic Panel of Statistics Netherlands) but of the Income Panel Survey (IPO, again of Statistics Netherlands). This was done because the scale and reliability of the income data provided by the treasury in the IPO guarantee a higher level of precision than the SEP.

The next four sections summarise the most important results of the empirical testing of the various hypotheses. The results of the separate analyses are once more reviewed as a whole in section 8.8, with the aim to arrive at a more general judgement concerning the usefulness of Esping-Andersen's three-fold classification for assessing the extent to which welfare states fulfil their traditional functions. The final section briefly examines the relevance of the analyses for assessing the present-day welfare state.

8.4 Income redistribution

In a developed welfare state, the income transfers via the system of social security and the tax system are coupled with a substantial redistribution of income from higher to lower income groups. A priori one might expect that the social-democratic welfare state would display the greatest income levelling, followed by the Netherlands and the corporatist welfare states, while such levelling would be least pronounced in the liberal welfare states.

These theoretical expectations are confirmed only in part by the empirical analysis. Contrary to expectations the list is headed not by social-democratic Sweden or Denmark but by corporatist Belgium and Germany. In Belgium, earned income inequality is reduced by nearly half (46%) by means of taxation and social security, and in Germany by 42%. In general there turns out to be no systematic difference between the social-democratic and the corporatist welfare states. However, it should be noted that the degree of income redistribution via taxation and social security is probably underestimated in respect of Sweden, as no figures are available for the social security contributions.

In line with the hypothesis, in the liberal welfare states the income differentials are reduced the least by social security and taxation – for example by no more than 28% in the United States. In this regard, however, the United Kingdom bears more resemblance to a corporatist or social-democratic than to a liberal welfare state.

The fact that the anticipated distinction between the social-democratic and corporatist countries does not turn out to exist must primarily be explained in terms of the major influence of the *size* of social security spending on the extent of income redistribution. On account of the passive nature of the corporatist welfare states, many households in these countries are dependent on benefits. In addition, the ageing of the population affects the size of social security spending. The extent to which social security benefits accrue in particular to households with the lowest primary income does not, however, vary substantially between the various countries.

The income redistribution by means of taxation and social security contributions is much less of a factor, so that differences between the countries with respect to the average tax burden and the progressiveness of the levies are of little account.

8.5 Income inequality

The principal hypothesis tested in the analysis of income inequality is that social-democratic welfare states are the least unequal, followed at a short distance by the corporatist group, while the income differentials are widest in the liberal welfare states. On the basis of the unstandardized distribution of disposable income, in which no adjustments are made for differences in household size, this assumption is not confirmed. The Netherlands and Belgium turn out to display clearly the least inequality, and the United Kingdom and the United States the most. In between there is a broad middle group, in which the moderate relative inequality of the Scandinavian countries is at variance with the expectation. The high inequality in the United Kingdom is also not consistent with the assumptions on the basis of the empirical country typology.

After standardising for differences in household size, and assigning this standardised income to all household members, the principal hypothesis obtains more support. In that case the Scandinavian countries belong to the least unequal group, Germany and France find themselves in the middle and the Anglo-Saxon countries are the most unequal. As a hybrid welfare state, the Netherlands, as expected, finds itself in between the Scandinavian cluster on the one hand and Germany and France on the other. Belgium is the most important exception to the expected picture. Belgium is the least unequal and does not therefore fit into the expected 'corporatist' pattern either.

The sub-hypothesis relating to the ranking within the clusters of countries are not confirmed, even after standardisation and apportioning household income to all individual members. Within the group of social-democratic welfare states Norway – contrary to expectations – is no more unequal than Sweden and Denmark if one compares the same measurement years (1991/92). Also, there are wide variations within the corporatist welfare states. In fact only Germany finds itself in the expected position within the ranking in terms of inequality, fairly close to the Scandinavian countries. As noted, the lack of inequality places Belgium totally outside the expected pattern, while the income inequality in France is so pronounced as to tend towards that of the Anglo-Saxon countries.

There is also a wide spread within the group of liberal welfare states. Canada is the least unequal, the United States the most and Australia is in between. Although inequality declined to some extent in the United Kingdom during the 1990s and the UK scores less extremely after standardisation and apportioning than in the unstandardised distribution, the income contrasts are much greater than one would have expected on the basis of the welfare state characteristics. This can partially be explained by trends during the last two decades. In the 1980s the income differentials in this country widened significantly more than elsewhere. In the early 1980s the income inequality in the United Kingdom, when compared with the other liberal welfare states, was more in line with the theoretical expectation.

8.6 Social welfare

The 'appreciation' of a welfare state is determined not just by the extent to which it reduces social inequality but also by the consequences it has for the material level of welfare. In the most extreme case, the equalisation of all income differentials could mean that everyone was equally poor instead of equally rich.

Chapter 6 first tests the hypothesis that there is a negative correlation between the extent of income inequality and the average level of income, and that the various types of welfare state

may be divided into clusters in this regard. There does indeed appear to be a certain trade-off between income equality and income level. The liberal welfare states, with a relatively high degree of income inequality, generally have a somewhat higher level of income than the more equalised social-democratic and corporatist welfare states. The United Kingdom and Australia do not, however, fit well into this picture: they combine a high degree of inequality with a level of income that is no higher than that in the corporatist welfare states.

However, the link between income equalisation and economic performance disappears entirely if one focuses on the rate of economic growth per head of population. In this case social-democratic and corporatist welfare states such as Denmark, Norway and Germany and the hybrid Netherlands in fact do better than the liberal countries, although Sweden scores the worst in this respect.

The valuation of the various combinations of income inequality and income level is ultimately determined by the (subjective) importance attached to both aspects. If one is only concerned with the average level of income, irrespective of the degree of income inequality (the 'maximean' option), the liberal welfare states are relatively high up the league table of social welfare, with the United States and Canada in first and second place. The greater the importance attached to small income differentials, the more the liberal welfare states sink in the ranking, and the more that the social-democratic welfare states, as well as the Netherlands and Belgium, move up. Given an extremely pronounced inequality aversion, initially Norway and ultimately the Netherlands occupies first place in the table.

The position in the league table of typical corporatist welfare states such as Germany and France turns out not to be highly correlated with the degree of inequality aversion. These countries are therefore not designated as the 'best' in respect of any single preference concerning the trade-off between income inequality and level of income, but are also never designated as the worst. In Sweden the average level of income is so low that the country remains at the bottom of the list, despite the relatively small income differentials. The same applies to the United Kingdom, but then particularly because the income inequality is extremely large and the average level of income moderate. Apart from the UK and Sweden the hypothesis is confirmed that social welfare is greatest in the liberal welfare states if one has little aversion towards income inequality, and greatest in the social-democratic welfare states if inequality aversion is more pronounced.

Finally the hypothesis was tested that the differences between the welfare state types with respect to income inequality and income level coincide with divergent preferences of the inhabitants. For this purpose use was made of data from the *International Social Survey Program* (ISSP), an international survey of public opinion on various topics.

Up to a certain point the assumed correlation does turn out to exist. In the European corporatist and social-democratic welfare states the population attaches above-average importance to the reduction of income inequality and less importance to the economic function of income differentials, while the situation in the liberal welfare states is the other way around. The attitudes of the British, however, turn out to correspond most closely with those of the Continental European welfare states.

In this regard Sweden and Canada form an exception. The attitude of the Swedish population indicates that they consider the welfare state has gone too far. The Canadians, by contrast, appear relatively satisfied with the way in which their country combines moderate income differentials and a high level of income.

8.7 Poverty

The existence of three worlds of welfare capitalism is confirmed only in part by poverty figures. On the basis of the internationally commonly used OECD threshold (half of average income) there is a division between the liberal group on the one hand, and the social-democratic and corporatist countries on the other. The results correspond closely with the ranking of countries in terms of inequality, and it may therefore be questioned whether the OECD poverty line does in fact measure poverty. The totally relative nature of the definition bypasses the 'absolute core' of poverty – falling below the income level at which the customary needs in society are met.

If the levels of the Dutch statutory minimum are used as poverty line, the three-fold classification is disrupted by the relatively low poverty rates of Canada and, to a lesser extent, the United States. This is due in particular to the high general welfare level, meaning that the Dutch poverty threshold is relatively low – below the OECD norm – when projected against the income distribution of these countries.

If the policy norms of the countries themselves are used as poverty threshold, the picture is reasonably consistent with Esping-Andersen's typology. This is in line with the expectation: this poverty line measures more than inequality and is not biased by the differences in wealth (like the Dutch statutory minimum).

With respect to the differences *within* the country clusters, the ranking of the liberal countries broadly corresponds with the expectation if one uses the national policy norms and the OECD poverty line as a criterion. This does not, however, apply to the United Kingdom. Due to the high level of inequality the UK has a high poverty rate on the basis of the OECD poverty line, whereas the relatively low British social assistance level means that, according to this criterion, few people are poor.

If the Dutch statutory minimum is applied, however, the ranking of the liberal countries does not correspond with the expectation. On account of the high absolute welfare level, the poverty rate in the United States and Canada is fairly low according to Dutch standards.

Among the social-democratic countries the poverty rate as measured by all poverty lines is, as expected, somewhat higher in Norway than in Denmark. Against the expectation, Sweden scores higher. Apart from the earlier noted characteristics of the Swedish database this is presumably related to the unfavourable economic situation and the relatively sharp increase in the number of benefit claimants in this country during the early 1990s.

In line with the expectation the corporatist countries do not differ widely when either their own policy norms or the Dutch statutory minimum is used as the poverty line. In the case of the OECD poverty line, however, the differences are very wide: Belgium has the lowest poverty rate for all countries, while Germany has twice as many poor households and France nearly three times as many.

By international standards the poverty rate in the Netherlands is low to moderate. If the poverty line is set at 95% of the statutory minimum, the poverty rate in the Netherlands is the lowest of all the countries investigated (4%). If the poverty line is increased to 105% of the statutory minimum, the poverty rate in the Netherlands increases sharply on account of the sizeable group of benefit claimants on a minimum income. On the basis of this poverty line the Netherlands, with 11% of poor households, is in the international middle group. If the poverty line is set at half average income (8%) or if national policy norms are used in all countries, the Netherlands is among the countries with little poverty, although Denmark in particular has a lower poverty rate.

8.8 Two or three worlds of welfare state capitalism?

From the summary of the individual chapters it will be evident that the three types of welfare state distinguished only partially represent three types of income protection and income (re-)distribution. The only country exhibiting the expected picture in almost all respects is the United States: of the countries investigated the US's score in the field of income inequality, income levelling and poverty remains one of the lowest. Only if the average *level* of income also plays a role (in the case of social welfare and poverty in an absolute sense) does the US move off the bottom. The other countries can be less readily classified. Often a country combines a high score in one field with a low score in other respects. This is illustrated in Table 8.1, which summarises the most important findings from this study.

Table 8.1 Ranking^a of the eleven countries based on institutional characteristics and results of the welfare state, circa 1990

ranking on basis of institutional characteristics	equality		redistribution	social welfare			lack of poverty		
	unstandardised	standardised ^b	% egalisation	general ^c	average income	in-equality aversion = 2	OECD-threshold	national policy norm	Dutch statutory minimum (95%)
1/2. Sweden	4	1-3	2/3	11	10	10	6	3-7	10
Denmark	8	4	4	5	6	5	2	1	2
3. Norway	6	1-3	7	2	4	3	4	2	4
4. Netherlands	1/2	5	5	6	9	6	3	3-7	1
5/6/7. Germany	3	6	2/3	3/4	3	4	5	8	7
Belgium	1/2	1-3	1	8/9	11	9	1	3-7	5/6
France	5	8	.	7	8	7	8	3-7	8
8/9. Canada	7	7	8	1	2	1	7	10	3
United Kingdom	11	11	6	10	7	11	11	3-7	11
10. Australia	9	9	9	8/9	5	8	9	11	9
11. United States	10	10	10	3/4	1	2	10	9/11 ^d	5/6

a 1 is the highest and 11 the lowest place in the list.

b Both the square root of the number of household members and the modified OECD equivalence scale were used to standardise disposable income. The table shows results on the basis of the latter.

c On the basis of pair-wise comparisons of generalised Lorenz curves.

d The first figure relates to norms for Texas, the second to norms for New York.

Source: LIS, Statistics Netherlands (IPO'91)

In the first column the 11 countries have been ranked by type of welfare state, starting with the two countries that most closely approximate the ideal-type of social-democratic welfare state, namely Sweden and Denmark, and ending with the 'archetype' of a liberal welfare state, the United States. The next columns show the ranking of the countries in the fields of income protection and income redistribution. Number one is the country that performs 'best', i.e. which has the least inequality, reduces the primary income disparities the most, has the highest social welfare, or the lowest poverty. Number 11 is the country which scores the 'worst' in terms of these criteria.

In order to keep the table reasonably comprehensible, no more than three rankings have been included in each field. The degree of inequality relates respectively to the unstandardised disposable household income and the standardised household income, apportioned to individual members. The redistribution column relates to the percentage difference in inequality between the secondary (disposable) and primary incomes. With respect to social welfare three criteria have been used in Table 8.1. The first concerns a pair-wise comparison of generalised Lorenz curves, where the net result of pluses and minuses has been counted; the second concerns the level of average disposable income, which is a measure of social welfare if no weight is assigned to the distribution of income (maximean); and the third criterion concerns the level of the 'equally distributed equivalent income' given an inequality aversion of two.

For the ranking in terms of poverty all three criteria are shown. The first poverty line is the OECD norm of 50% of average disposable income; the second poverty line is based on the national criteria employed in each of the 11 countries examined; and the third poverty line is 95% of the Dutch statutory minimum.

If the various hypotheses with respect to the three types of welfare state were valid, the numbering in each column in the table would rise from top to bottom, i.e. Sweden and Denmark would consistently have the lowest figures (i.e. the highest places) and the US one of the highest figures (i.e. one of the lowest places). As noted this does generally apply to the US in the four areas investigated – with the exception of social welfare –, but Sweden and Denmark do not occupy the expected top position in Table 8.1 as expected. With respect to the degree of income inequality and income distribution Sweden is in the leading group, but in the field of social welfare it is in the bottom half of the list. This is explained in part by the severe recession in Sweden in the early 1990s, but also by the fact that children aged 18 and over living at home are regarded as single households in the available database. Denmark scores particularly well in relation to poverty, but is at best below the top group in the field of inequality, redistribution and social welfare.

If the three types of welfare state are compared – with the 'hybrid' Netherlands being considered separately – Table 8.1 does not provide evidence of any systematic difference in performance between the social-democratic and corporatist welfare states. Of the social-democratic welfare states Sweden, as noted, scores relatively well in relation to equality and income distribution, Denmark in relation to poverty and Norway in relation to social welfare. Within the group of corporatist countries Belgium stands out for the highly levelled income distribution and low relative poverty. In terms of various criteria Germany is in the second rank, especially as regards the (unstandardised) income equality, the degree of income egalisation and social welfare. France is often in the middle of the pack and most closely resembles the pattern anticipated of a corporatist country.

Although no clear line can be drawn between the social-democratic and corporatist welfare states in terms of their performance, there is a clear line between these two types and the liberal welfare states. With the exception of social welfare and 'absolute' poverty on the basis of the Dutch statutory minimum, the liberal welfare states are nearly always at the bottom of the table. As soon as the absolute level of income is taken into account, however, the picture changes. The fact that two of the four of the liberal countries – the United States and Canada – have a relatively high average income level means that they score well with respect to social welfare and 'absolute' poverty. If social welfare is measured solely in terms of the average level of income, the US and Canada in fact head the list. But if one assigns a reasonable

weight to the inequality of incomes (an equality aversion of two) Canada is at the top and the US occupies a middle position. Canada and the US are also in the top half of the league table if one takes 95% of the Dutch statutory minimum as the poverty line. With their relatively low average level of income the United Kingdom and Canada do not, however, differ from the social-democratic and corporatist welfare states. These countries consequently also score poorly with respect to social welfare and absolute poverty.

Since no systematic differences between the social-democratic and corporatist welfare states emerge from the analysis, the Netherlands as a 'hybrid' welfare state is not so much in between these two types as in the midst of a joint group of social-democratic and corporatist welfare states. In relation to most of the criteria the Netherlands is just below the top of the table. Only if a high weight is assigned to average income in measuring social welfare, the Netherlands is at the back of the pack. If 95% of the Dutch statutory minimum is taken as the poverty line the Netherlands scores the best of all countries. This is not very surprising since national assistance is intended to provide everyone with a minimum standard of living and to minimise the number of households below that minimum. If the poverty line is increased to 105% of the statutory minimum so that (nearly) all households in the Netherlands dependent on a minimum benefit are regarded as poor, the Netherlands sinks to a shared third place (see Figure 7.1 in Chapter 7).

If one compares the various rank orders in Table 8.1, the ranking of poverty on the basis of the national policy norms corresponds the best with the ranking anticipated on the basis of the institutional characteristics of the various countries. The social-democratic countries head the list while the liberals bring up the rear (with the exception of the United Kingdom), with the corporatist countries in between. This conclusion is unsurprising to the extent that of the criteria used, the national poverty norms are most closely correlated with the institutional characteristics of the various welfare states. Similarly the ranking on the basis of the standardised income inequality differs little from the expectations, excluding Belgium, which scores notably well in this regard. The ranking in terms of social welfare corresponds the least with the sequence from social-democratic via corporatist to liberal types. This is explained by the fact that the level of social welfare is determined in part by the (average) level of income in the various countries. Since no account has been taken of differences in income level in the classification of the countries by welfare state type it is not surprising that, the more weight is assigned to the level of income, the less the correlation between the ranking of countries and the type of welfare state.

To sum up, this study provides confirmation of the existence of three types of welfare state, differing from one another in terms of such institutional characteristics as the degree of coverage provided by social security, the level and duration of benefits, the degree of selectivity or universality of social security, active labour market policies, the regulation of the labour market and the linking of living standards and labour market position (de-commodification). Thus, the classification into three welfare state types which Esping-Andersen based on the situation in the early 1980s, has been empirically validated for the early 1990s.

If the attention is focussed on the extent to which the welfare state fulfils the traditional functions in the field of income (re)distribution and combatting poverty in the various countries, this three-fold classification is, however, less satisfactory. Only in respect of the scale of poverty on the basis of the national criteria and the (standardised) income inequality

do the social-democratic countries score the best and the liberal countries the worst, with the corporatist countries somewhere in between. The other criteria in terms of which the functioning of the welfare state has been assessed provide far more ground for a simple division into a liberal Anglo-Saxon type and a continental 'European' type. In comparison with the latter countries, the Anglo-Saxon countries are then characterised by limited redistribution via the welfare state, a high level of income inequality and high relative poverty. However, with respect to social welfare two of the Anglo-Saxon countries, Canada and the US, have a relatively high score.

This conclusion is certainly no reason for rejecting Esping-Andersen's typology. As noted earlier Esping-Andersen did not draw up his typology so much with a view to the traditional income-protection and redistributive functions of the welfare state as to the correlation between the welfare state, social stratification and the labour market. This study, it should be stressed, was not designed to investigate the relevance of Esping-Andersen's typology for *these* aspects of a modern capitalist society. If one is particularly interested in the extent to which welfare states fulfil the traditional functions of income protection, combatting poverty and reducing income disparities, however, it would be more accurate to speak of two instead of three 'worlds of welfare state capitalism'.

8.9 The welfare state at the start of the 21st century

The empirical analysis in this study largely relates to the situation in the 1990s. This raises the question as to what extent the results presented above are still valid ten years later, at the start of the 21st century.

In order to obtain some insight into this aspect, it is well to bear in mind at the start that the performances of the welfare state around 1995 were also investigated in a number of the chapters. However, the fact that data were not available for both years for all countries means that it is not possible to provide a complete picture of the developments in the first half of the 1990s. Where this comparison is possible, the analyses point to only limited shifts between around 1990 and 1995. In certain respects the differences between the countries investigated have become smaller. Norway, Germany and the UK have for example moved more towards the middle with regard to income inequality, although the position of the US has become even more extreme. With respect to social welfare the relative position of the Netherlands has improved somewhat while that of Germany and the United Kingdom has deteriorated, primarily on account of differences in the rate of growth of average income. The period under consideration (around five years) is, however, too short to draw conclusions concerning structural changes in the relative performance of the various countries. Changes in the first half of the 1990s are partly determined by the downturn in the economy, both the phasing and the severity of which varies from one country to another. The recession in the first half of the 1990s affected Germany and Sweden particularly badly, the former in the aftermath of the reunification with East Germany, and the latter as a result of the loss of the celebrated Swedish model and the accession to the EU. By contrast, the Netherlands managed to come through the recession comparatively unscathed.

Important changes in welfare state arrangements were made in many countries in the 1990s. In the Netherlands, for example, the Sickness Insurance Act was largely privatised, the Disability Insurance Act (WAO) was radically revised, entitlements to surviving dependants' benefits were strictly limited and social assistance was decentralised (SCP 1998). Considerable shifts

similarly took place to a greater or lesser extent in other countries. In theory it is conceivable that the performances of various countries with respect to income inequality, poverty and social welfare consequently differ substantially from those of ten years ago.

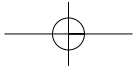
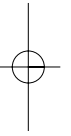
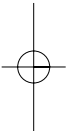
It is however to be doubted whether the ranking of the countries will have undergone significant changes as a result. From a survey by the OECD (1997c) it may be deduced that the rank order of ten countries (largely corresponding with those studied here) with respect to the inequality of disposable income, the poverty rate according to the OECD norm and the size of income transfers to the lowest income group in the mid 1990s differed little from that around 1980.¹ Since important institutional changes took place in the 1980s as well, this suggests that the relative position of countries is rather 'policy resistant'. In other words, a succession of changes to specific arrangements does not appear to alter the structural effects of a particular type of welfare state substantially. Esping-Andersen reached a similar conclusion in more recent publications (Esping-Andersen 1996 and 1999).

What does all this mean for the position of the Dutch welfare state at the start of the 21st century? The international comparison around 1990 and again around 1995 indicated that the output of the Dutch welfare state is not exceptional. On the basis of system characteristics the Dutch welfare state may be difficult to classify into one of the three Esping-Andersen types; in terms of performance in the field of income (re)distribution, poverty and social welfare the Netherlands could be termed an 'average' European welfare state. Other than sometimes suggested, the (standardised) income differentials in the Netherlands are not particularly small, and the degree of income levelling by means of taxation and social security is not particularly great. The level of social welfare is even on the low side, and only with respect to combatting poverty is the Netherlands among the best performing countries.

As noted, these findings relate to the first half of the 1990s. In so far as more recent figures are available for the Netherlands these do not indicate that any major changes took place in the second half of the 1990s. On the contrary, both the poverty rate and the degree of inequality appear to have remained notably stable in the 1990s. The percentage of 'poor' households remained unchanged between 1990 and 1997, although it has fallen to some extent in 1998 and 1999 (SCP/CBS 1999: 11-24). The income share of the 25% 'poorest' households was exactly the same in 1998 as it was in 1990 (CBS 2000). Given the relatively high rate of economic growth in the Netherlands in the second half of the 1990s it is reasonable to assume that the Netherlands will have risen slightly in the social welfare table. This makes it plausible that by international standards the Netherlands still scores fairly well – but not exceptionally high – with respect to income inequality, redistribution, social welfare and combatting poverty. On account of the relatively good performance of the Netherlands in the field of employment growth and public finances in the second half of the 1990s, the criticism concerning the functioning of the welfare state in recent years has lost much of its force. This means that the Netherlands finds itself in a good starting position to maintain in the 21st century a welfare state that stands up to international comparison, in both economic and social terms.

Note

- 1 The correlation between the ranking around 1980 and 1990 with respect to income inequality amounts to 0.88, for poverty to 0.76 and for income transfers to the bottom 30% of the income distribution to 0.66.



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