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# **Children and Distributive Justice between Generations**

A Comparison of 16 European Countries

Thesis for the degree of Philosophiae Doctor

Trondheim, January 2009

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Faculty of Social Sciences and Technology Management  
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# 1. Introduction

Traditionally, social and material differences are discussed with reference to dimensions such as social class, gender and ethnic origin. Generation or age has been proposed as an additional useful indicator of material inequalities. I will argue that just like it is legitimate to investigate material inequalities between social classes, men and women, and between ethnic groups, it is also legitimate to ask about material inequalities between children and other age- or generational groups.

For decades statistical offices have accounted for relative poverty in different age groups, and several empirical studies have taught us that there are age-related differences in the distribution of income (Kangas 2000; Esping-Andersen and Sarasa 2002; Jensen et al. 2004; Chen and Corak 2005; Unicef 2005). Statistical offices have also presented data on age-related public spending, and quite a few researchers have stressed the importance of evaluating public spending to the elderly and families with children (Preston 1984; Thomson 1991; 1996 Sgritta 1995; 1996; Lynch 2004). There are those who argue that equalizing the family burden is an important social task, since children have become pure financial outlay to their parents with modernity (Mackenroth 1952 in Jensen and Qvortrup 2002; Krüsselberg 1987; Folbre 1994; Esping-Andersen and Sarasa 2002).

In this thesis I address the question of distributive justice between age groups or generations. My thesis is theoretically informed by a synchronic generation perspective, and this perspective aims at comparing the material welfare of children, adults and the elderly. It is only rather recently that generational variations have been theorized about. The synchronic generation perspective is still used in empirical research and theorized by a number of scholars. Perhaps the most famous is Preston (1984), whose presidential address to the convention of American demographers in 1984 is considered seminal (see also Krüsselberg 1987; Thomson 1996; Qvortrup 2003; Olk and Wintersberger 2007).

The empirical part of this thesis explores material differences between children, adults and the elderly. Based on earlier research (Preston 1984; Sgritta 1995; Thomson 1996; Kangas 2000; Esping-Andersen and Sarasa 2002; Jensen et al. 2004; Chen and Corak 2005), I have decided to discuss material welfare differences between the chosen groups in terms of *public transfers* and *disposable income* in 16 European countries.

The research questions are presented later in this Introduction, but first I will outline some of my aims: a) to explore the development in public spending on the elderly and on family and child benefits in the last few decades; b) to provide possible explanations of welfare state differences in public spending on the elderly and families with children; c) to explore cross-country differences with regard to inequality and poverty rates for children, adults and old people; and d) to provide possible explanations of cross-country differences on inequality and poverty rates.

I now give a short presentation of the two important concepts used in the title of the thesis: Generation and distributive justice.

## 1.1 A synchronic generation approach

The thesis is theoretically informed by *social studies of childhood*.<sup>1</sup> Such studies discuss children's life conditions here and now, i.e. while they are children, and compares children's life conditions with other groups that correspond conceptually; age groups or generations (Qvortrup et al. eds. 1994; Corsaro 1997; James et al. 1998).

One pillar in social studies of childhood is the agency approach. It does not make sense for me to use this approach when I am exploring children's relative material welfare. Even if it is true that children are agents and actors in a variety of settings, it is also true that children's material welfare is dependent on their parent's position in the distribution of income and wealth and how their parents make use of the household income (Bojer 1993).

The other pillar in social studies of childhood is the structural approach. This approach is the one I have chosen for this thesis. The structural approach to childhood is distinguished by the level of analysis (society instead of the individual) and its

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<sup>1</sup> Some scholars have a preference for the term "the new sociology of childhood".

perception of childhood as a social category or permanent structure in society (whilst the individual child develops towards adulthood). The structural approach suggests that economic, social, political and cultural parameters are largely determining children's welfare, and the structural approach aims at comparing children, adults and the elderly on different dimensions. The assumption is; even if children, adults and the elderly are exposed to the same economic, social, political and cultural parameters, it can be supposed that different age groups or generations are not impacted by these external parameters to the same extent - whether positively or negatively.

There are several approaches to the study of generational relations. A diachronic approach will follow an age group or a cohort over time as they pass through various age stages. In principle one may compare different cohorts, i.e. age groups born at different periods. Diachronic generation approaches are legitimate, but they suggest that childhood experiences are of primary interest when employed to understand adult outcomes. This is important, but it is not my intention.

The synchronic generation approach is another legitimate perspective. A synchronic approach compares contemporaries. The aim is to explore the material welfare of contemporary age groups or generations, for instance childhood compared with adulthood or old age. Eurostat, OECD and LIS (Luxembourg Income Studies) have for many years employed the synchronic approach for income data. The sustained interest in comparing the material welfare of children, adults and those in old age is caused by the way the synchronic generation perspective is valuable in addressing significant challenges. One challenge with much political interest is relative poverty; especially child poverty and old age poverty. Another challenge is ageing societies. The challenge of ageing societies is coming more and more to the fore, as larger shares of public budgets have to be earmarked a growing elderly population. I am not suggesting that adults or old people are less child-friendly than before, but changing societies imply changing configurations of interests.

When dimensions like social class or ethnicity are used in investigations of material inequalities, children as a group are divided. When material inequalities are explored through the synchronic generation approach, children are seen as one group and compared to other age- or generational groups. The important challenges mentioned above (ageing societies and child poverty), emphasize the importance of exploring if

children are fairly treated in material terms, meaning whether they are thought of in terms of distributive justice between generations.

The notions age group and generation group have been used at the same time. It is, however, important to be aware that there is a difference when referring to age groups and generation groups. To talk about the age group above 65 years is something else than talking about the elderly as those who have retired. The latter group is most likely to be much larger than the former, but more importantly; it is given a substantive definition, which is more robust to changing societal circumstances. A group defined merely in terms of age brackets would be called an age group whereas a group of retired elderly could be called *a generation group*. Likewise, a substantive definition of *childhood as a generation group* could be to define “children” as all those who have not left the obligatory educational regime. Legally, according to the United Nations Convention on the Rights of the Child, “children” includes all individuals up to age 18, whilst statistical data on children are given in the age bracket less than 16 years (0-15). Stating age limits between 0 and 15 years statistically or 0 to 17 years in legal terms, would render children merely as an *age group*.<sup>2</sup>

In this thesis, age groups and the generation groups more or less coincide and may thus conveniently be used interchangeably. My preference for generation must therefore be seen in the light of, for instance, historical comparisons where age groups and generational groups do not coincide. Children in the age bracket 0 to 15 years remain in this age bracket irrespective of time and space. However, to talk about childhood as a generation group in terms of school leaving age would make childhood longer than hundred years ago (e.g. 14 years compared with 17 years), whilst to talk in terms of voting age, childhood would have become shorter. In other words: Theoretically generation is preferred whereas age is too precise (Qvortrup 2003), but for practical and empirical purposes age is to be preferred - in particular when used for countries of approximately similar development.

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<sup>2</sup> There are no universal accepted definitions of terms like “the old” and “children”. In the case of children, Boyden and Levison (2000) note that even though the United Nations Convention is a policy standard, it departs from social definitions in many parts of the world.

## 1.2 Distributive justice

Having discussed generation, I now turn to the second concept used in the title of this thesis: Distributive justice. The term “justice” has been a favoured theme of research and philosophy for more than 2000 years. Even in the wealthiest societies distributive justice will be on the agenda since there is a limited amount of resources. The popularity of distributive justice is related to the importance of justice to nearly all aspects of life. Even if people have a hard time agreeing on the meaning of justice, most people agree that “a society characterized by injustice would be especially blameworthy” (Barry 2000: 138). Distributive justice is associated with problems concerning the appropriate distribution of societal goods, such as wealth, income, education, civil and political rights, and opportunities.

For a long time it was claimed that science should restrict itself to analyse the world as it actually was and not as it should or could be. For this reason, the term distributive justice did not attract too many scholars. This situation changed with John Rawls’s seminal analysis *A Theory of Justice* from 1972 (Bojer 1997). His theory of justice-as-fairness provided a link between philosophy and policy recommendations, and generated a substantial critical industry. In attempts to explain why Rawls’ book became so monumental, Johannessen (2003) and Barry (2000) point to the impressive arguments made by the author and historical occurrences that actualized questions of justice, such as the Vietnam War, overwhelming impressions of poverty from Africa and the third world, racial conflicts in the US, and student riots.

Distributive justice is a contested concept as long as there is disagreement on what is to be shared fairly, to whom, and on what basis. In this thesis distributive justice is explored in some of the top ranking nations according to the United Nations Index of Human Development. In these rich countries, EU-15 and Norway, there is a moderate shortage of goods and not all inhabitants are provided with the opportunities to live a decent life in comparison to the wealthy majority.<sup>3</sup> The good centred on is *disposable*

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<sup>3</sup> I would think that the choice of societies to examine, to a large degree determines how to discuss distributive justice. On a worldwide scale we would probably discuss facts such as 1.2 billion people live on less than a \$1 a day, 800 million people suffer from hunger and malnutrition, and the poorest 20 per cent of all people have only 2 per cent of the income (Boulle and Newton 2005; United Nations 2005b). If our approach were to contrast the situation in developed and developing countries, we would work with such issues as the fact that the richest 20 per cent of the countries control 86 per cent of the resources, whilst about 1 per cent of the resources are shared among the poorest 20 per cent of countries (ibid.); or

*income* and how it is spread among different age groups or generations. Distributions of income are evaluated by three allocation principles; equality (low levels of inequality); the difference principle (poverty rates); and equal opportunity (focus on poor children).

My empirical comparisons will investigate whether there are any clear cross-country differences on income distributions and public transfers. Here, my main predictor of cross-country differences is a modified version of welfare typologies (Esping-Andersen 1990; Ferrera 1996), as well as other predictors like economic performance and the population structure.

### 1.3 Research questions

In the empirical part of the thesis I perform a comparison of material welfare in terms of family income and public transfers. The research questions are:

- 1. Has there been a pattern of growth in old-age benefits in combination with a decline in spending on family and child benefits?**
- 2. Why do welfare states differ with regard to the sizes spent on old-age benefits and family and child benefits?**
- 3. How is age-related public spending linked to the challenge of ageing societies?**
- 4. Are there cross-country differences with regard to inequality and poverty rates for the population as a whole and between age groups (children, adults and old people)?**
- 5. Why are there cross-country differences with regard to the median position and poverty rates for children and the elderly?**
- 6. What household features characterize children living at risk of poverty?**

Research questions 1-3 are about age-related public spending. Since the 1970s, several researchers have explored age-related public spending. Preston (1984), Thomson (1991; 1996), Sgritta (1995), Esping-Andersen and Sarasa (2002) and Lynch (2004) discuss contrary paths in public spending on the old and the young. They claim that the contemporary welfare states extend fewer benefits to young people and much more to the elderly than they did in the post-war period. Based on former research it is likely to assume that there has been a huge growth on old-age related public expenditures, and also that this is related with less spending on families with children.

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we could centre on comparing the situation between or within those groups of countries ranked by the United Nations as high, medium or low on Human Development.



The first research question - *Has there been a pattern of growth in old-age benefits in combination with a decline in spending on family and child benefits?* – is answered by exploring the size of old-age benefits and family and child benefits from the 1980s and onwards.

Across the 16 countries examined, the generosity of social programmes like “Benefits for families and children” and “Old-age benefits” vary significantly. The next task is to understand what causes such differences between welfare states.

In analysing the second research question - *Why do welfare states differ with regard to spending on old-age benefits and family and child benefits?* – I use multivariate linear regression. My most important predictor is the “regime typology”. This model is a modified version of Esping-Andersens model (1990) that includes the Southern European countries (Ferrera 1996). The expectations are that the regime clusters act differently in their public spending on child families and the old, since they have dissimilar aims with their social policy and are based on different “traditions of welfare”. Other predictors are economic performance and the age structure.

Ageing societies is one of the chief reasons why the question of distributive justice between age groups or generations has gained relevance. Some scholars have argued in favour of more spending on the young, since such expenditures are a combination of consumption and investment, while expenditures on the elderly are mainly for consumption.<sup>4</sup>

I do not attempt to fully answer the third research question – *How is age-related public spending linked to the challenge of ageing societies?* – rather I give some examples. My first point is to investigate the determinants of the present age structure and future trends (birth rates, life expectancy and migration). Through multivariate analyses, controlling for other predictors, I explore the possible impact of the size of family and child benefits on birth rates. Second, I look into the possible impact of the age structure on to age-related public spending. The last point is to show that some of the mentioned policy responses to ageing societies are of relevance to the issue of age-related spending.

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<sup>4</sup> Preston (1984) argues in favour of changing the mix of public and private childrearing responsibilities if we care about our collective future. Esping-Andersen and Sarasa (2002) argue that social investments in children now will have strong and positive secondary effects in terms economic prosperity. They propose that welfare states should compensate children and their families through redistribution, in order to reduce the demographic imbalance and improve the future productivity of workers.

Research questions 4-6 are about distributions of disposable income across age groups and across countries. Based on Rawls (1999), I argue that the well-ordered society displays; a) low levels of total inequality, b) low levels of inequalities between children, adults and old people, c) low levels of total poverty, and d) low poverty rates for children, adults and old people.

The point of the fourth research question - *Are there cross-country differences with regard to inequality and poverty rates for the population as a whole and between age groups (children, adults and old people)?* – is to discuss age-related differences in the distribution of income. I start by investigating the overall level of inequality (Gini Coefficient) and poverty (below 60 per cent of income), and then examine the relative median position (in the income distribution) and poverty rates of children, adults and old aged people. This investigation is similar to many other empirical studies mentioned earlier, and the assessment of the first question shows that there are clear diversities across countries with regard to child poverty and old age poverty.

In the fifth research question – *Why are there cross-country differences with regard to the median position and poverty rates for children and the elderly?* – I try to understand differences in the relative median position and poverty rates of children and the elderly, i.e. the relative median income and income poverty rates of old people and children after a calculation of household incomes by using equivalence scales. In order to explain cross-country differences, I perform four multivariate regression analyses. Important predictors are the regime typology, economic performance, the population structure, and public transfers.

The sixth and final research question is based on the allocation principle of equal opportunity. It says: *What household features characterize children living at risk of poverty?* There are three reasons for providing some insight on this matter. First, my intention has been to pay particular attention to children's material welfare. Second, equal opportunity is an important allocation principle among theorists like Rawls, Sen and Dworkin. Third, providing equal opportunities for children is central both in terms of children's life experiences in the present and their future prospects.<sup>5</sup>

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<sup>5</sup> The harm of childhood poverty is magnified by its impact on a wide range of aspects of children's lives, such as housing, health, education, family relationships, and peer relationships (HM Treasury 2001: V). Hinrichs (2000) focus more on the productivity of future workers. He argues that if not something is not done to reduce the present child poverty rates, an increased number of adults (that were poor as children) will prove unable to contribute sufficiently to the well being of the increasingly childless future elderly.

## 1.4 Empirical shortcoming

In order to perform empirical analyses of the material welfare of children, adults and the elderly, there are a number of “challenges” to be faced. Such challenges are to be explored in Chapter 3 on Methods, but I will emphasize one shortcoming in particular: The synchronic generation approach demands that I refer to children as a distinct group, but empirically this is not always possible given the available data.

The problem is most easily seen in my exploration of age-related public spending. The target of social transfers is the household head (mother and/or father), and the statistics used do not allow me to perform direct comparisons of public spending on children and old people. My empirical examination of age-related public spending informs about social benefits to families with children and old-age benefits, and in so much it can only inform about the position and importance of the elderly compared to families with children (in social transfers).

Most children are not income-generating individuals, and children have for the most part been overlooked in economic research and its discourses (Boyden and Levison 2000). Children’s material welfare is closely connected with their parents’ welfare. Even though children’s material welfare depends on their parents’ income and wealth, the national statistical bureaus, Eurostat and LIS regularly produce statistics on poverty rates and median position (relative median income) for different age groups. Comparisons of poverty rates for different age groups are possible by the use of equivalence scales. Data on income are gathered at the household level, and then split to the individual by such scales. This operation enables us to compare the situation of children, adults and the elderly, although the results are heavily influenced on the choice of equivalence scale (see Chapter 3).

I can refer to children as a distinct group when examining income distributions, but not when examining public transfers. The empirical analysis of income distributions (Chapter 5) show some of the benefits of the synchronic generation approach, but there is a need for awareness that there are differences within the generation groups as defined. These are questions that go beyond the synchronic generation perspective. Nevertheless, in the last research question I will focus on what characterises children living at the risk of poverty.

## 1.5 Thesis structure

Including the Introduction, my thesis is divided in five chapters.

Chapter 2 has three purposes. The first is to review a variety of theories of distributive justice and distinguish between allocation principles. The starting point is ideas offered by Plato and Aristotle; in the main section I give a longer review of John Rawls; and I consider some of the criticism directed at Rawls' theory. The second purpose is to present the synchronic generation approach (Qvortrup 1987; 1999; 2003; Wintersberger 2005; Alanen 2007; Olk and Wintersberger 2007) and its aim of comparing co-existing age groups or generation groups. Other approaches to generation are also presented; the life phase approach (Woolfolk 2004), Elder's (1999) life course studies and cohort approaches (Ryder 1965; Thomson 1991; 1996).

The last purpose is to present arguments in favour of including children in theories of distributive justice. The problem is this: The important theories of distributive justice only deal with the adult part of the population, whilst the generation concept refers to children, adults, and the old. The challenge is to produce good reasons for including children in discussions of distributive justice, and to establish allocation principles of relevance to cross-sectional welfare studies of generations and children. The conclusion is that equality, the difference principle, and equal opportunity are principles of relevance to my study.

The intention of Chapter 3 is to present methods for analysing relevant principles of distributive justice when comparing the material welfare of children, adults and those in old age. In the first section I pick up on the question of defining relevant age groups or generations empirically. In sections two and three I explore "age-related" public spending and the "disposable income" of different age groups. In the fourth section I discuss empirical applications of equality, equal opportunity and the difference principle. In the fifth section I present regression analysis and the set of explanatory variables used in empirical tests. The sixth section accounts for primary and secondary sources. In the last section I summarize the most important concerns with respect to empirical analysis of distributive justice between age groups or generations.

In Chapters 4 and 5 standard statistics from 16 European countries are gathered and analysed. The countries are Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Norway, Portugal, Spain, Sweden, the Netherlands

and the United Kingdom. The main point of Chapter 4 is to discuss the three research questions related to public spending. The main point of Chapter 5 is to discuss three research questions concerning distributions of income.

In the conclusion, Chapter 6, I offer a review of some of the evidence presented, and discuss theoretical and empirical findings.



# Part I.

## Theory and Method





## 2. Distributive justice and Generation

In order to address concerns about distributive justice between generations, one must describe and identify the terms *distributive justice* and *generation*. The purpose of Chapter 2 is to investigate these terms.

The first section is about distributive justice. Even if there are no “absolute standards”, patterned principles of distributive justice are often used to evaluate distributions of resources like “quality of life”, income, wealth, and public transfers. For modern western societies, distributive justice has two dimensions; rights and duties. At the individual level, distributive justice is about what an individual supplies/offers and what he or she acquires/attains. At the societal level, distributive justice refers to the overall fairness of a society in its division of burdens/duties/contributions and rewards/rights/needs. Some of the theorists looked into are Plato, Aristotle, Rawls and Nozick.

The second subchapter is about generation. The different meanings of generation make it especially difficult to work with (Abrams 1970; Thomson 1996), and intergenerational issues are discussed in extremely broad contexts (Eyerman and Turner 1998). There are different approaches to the study of generational relations, and I distinguish between the diachronic approach (age groups/cohorts followed over time) and the synchronic generation approach (comparing contemporaries).

The final section is about children and distributive justice. One challenge, when comparing the material welfare of children, adults and the elderly in terms of distributive justice, is that the important theorists/philosophers agree that arguments on distributive justice apply strictly to adults. Bojer (1993; 2000), Kangas (2000) and Qvortrup (1994) emphasize the importance of exploring if children are fairly treated in material terms, and they have tried to justify the use of principles to include discussions of children’s welfare. I give arguments on children’s right to distributive justice, and point out allocation principles of relevance to the study of children’s material welfare.

## 2.1 Theories of distributive justice

Justice is a challenging concept. In his review of modern political theory, Barry (2000) distinguishes between procedural justice (the fair application of rules) and social justice (the actual distribution of income, wealth and other resources). He comments that discussions on social justice have dominated the discourse on justice, and justice is now closely connected with the proper distribution of wealth and income. In other words, justice was originally linked to rights and duties, but is also associated with welfare.

In exploring different perceptions of distributive justice, the opening questions are: When should justice be demanded? Who should be responsible for the distribution of this justice? The discipline of procedural justice finds that the requirement of justice is satisfied if certain rules are adhered to. To the strict procedural theorist there are only individual entitlements, but most procedural theorists accept that the state has some responsibility for those who cannot earn an adequate income.<sup>6</sup> In principle, though, they find it improper to use the term justice to the outcome (e.g. distribution of income). Social justice theories do not propose sets of rules to be followed, but present allocation principles that a society can be evaluated according to. Thus, social justice theories require that society and the State, rather than just the actions of individuals, are evaluated for their justice and injustice.

My focus is on social justice. Within this framework, the next set of questions deal with the diversity of allocation principles: What should be distributed? To who should be distributed? How much should be distributed? There are a variety of allocation principles outlining how wealth, income, education, civil and political rights, and opportunities should be shared among the members of a given society. Different philosophers and their theories of distributive justice can be categorized according to which allocation principles they emphasize and how they conceptualize the relationship between the different principles (Scott et al. 2001). Some important principles are equality, need, desert, contribution, entitlement, merit, efficiency, effort, due return,

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<sup>6</sup> Procedural theories can be exemplified by the allegory of a fair race where nobody cheats and the best participant wins. Most procedural theorists accept that the state has minor responsibilities, but the general rule is that the term justice should not be used for the distribution of income (Hayek, in Barry 2000). There are two arguments for this opinion. First, markets are unpredictable and it would be impossible for the state to determine and enforce some just income without doing irreparable damage. Second, judgments about allocation principles are subjective, and it is impossible to presuppose a distributor who can make authoritative judgments about distribution.

utility and so on. Different criteria are discussed in the following text, but equality and need are of particular relevance.

The concept most often used in the same context as justice is equality, but the connection between the words is a complex one. The use of the term justice might often imply equality, but at other times theorists wish to justify inequalities. The difference principle, for instance, represents a trade-off between absolute equality and efficiency. This principle is important to this study, and it accepts certain, but not all inequalities (Rawls 1999). In general, it seems that all egalitarian theorists agree on the desirability of low levels of income inequality, and the ideal of low levels of inequality is also central to many modern welfare states. It is also quite common to hold differing views of equality according to what is to be distributed, and many theorists focus on equal opportunity instead of equal outcome.

Need is also a central criterion for many theorists of justice. *Needs* are basic necessities or requirements, and refer to a minimum level of money for food and clothing, as well as adequate housing, education, health care and opportunities for employment (Marshall 1997). Except for fundamental (physiological) needs, it might be claimed that needs are relative. The minimum level of money is higher in a society with high material wealth, and what is considered adequate housing, education etc. also depends on the society one lives in (Halvorsen 2002). Even so, those who advocate need would claim that there is some objectivity of *needs* compared to the subjectivity of *wants*. Needs are sometimes interpreted as “part of descriptive statements about people’s conditions of life” (Barry 2000: 152), and this implies that a person may need something without being aware of it.

Need and welfare are connected, and social justice is associated with welfare. Welfare is about satisfying physiological needs, social needs and the need for self-realization, and it points to the state or condition of doing or being well (Korsnes et al. 1997). Welfare policy aims at securing the inhabitants’ welfare, and social security is money paid by the state to the needy. For this reason, the term welfare is often used when some action is considered in order to enhance the position of individuals or groups lacking what is considered, basic necessities or requirements.

All people have certain physiological needs, but at the same time people may differ in their needs. Children, adults and the elderly share needs like food, clothing,

adequate housing and adequate health care, but because they differ in their activities and social roles, their needs also differ. This calls for unequal welfare policies. Considering the sequence of education, paid work and retirement, one finds that pensions and other necessary benefits are important for the elderly, and that important target groups in the group of adults are the unemployed and disabled. Children do not work, and parents are mainly responsible for their welfare. Children need love and care, but they also need adequate education. And some children, whose parents are unable to provide for food, clothing and housing, need an adequate policy of resource distribution to come to their aid. I will return to arguments on parental and state responsibilities for securing child welfare later in the Chapter.

This short inspection of justice has sketched some understandings of justice and presented the questions that often split the consensus among theorists. The next task is to present perceptions of distributive justice from important theorists/theories. The selection of theorists includes Plato, Aristotle, Bentham, Mill, Rawls, Nozick and Dworkin, and the main theorist is John Rawls.

### **2.1.1 Classic theories**

A starting point for discussions of distributive justice is the innovative ideas of Plato and Aristotle. Dealing with these Greek philosophers' theories serves not only a historical interest, but is a necessity since they provide some of the fundamental positions on justice. Plato and Aristotle's systematic examinations of justice have determined the discourse on justice and distributive justice up to the present time.

#### **Plato**

Plato's work *The Republic*<sup>7</sup> (1996) presents some original ideas on the nature and profitability of justice. Plato argues that communities are formed for the mutual achievement of common goals. People realize that they are not self-sufficient and that they work more efficiently if each person specializes in the practice of a specific craft. A society composed of individuals organized in a division of labour specialization also

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<sup>7</sup> The Republic is regarded as Plato's main work of political philosophy, and it is an attempt to answer two questions: What is justice? Is it profitable to be just? The work is divided into 10 "books". In the first of 10 "books" some preliminary attempts to discover the genuine nature of justice are presented. From the second book, Plato develops his new theory on how justice is built both in the individual and the state.

requires some additional services. Plato proposes the establishment of guardians, the ones responsible for the management of society. One group of Guardians is the military specialists (soldiers) and another group is rulers (whose task it is to watch over the interests of the community). The ideal society has a stratified structure with rulers, soldiers and the “people”.

When the ideal structure is considered, Plato goes on to argue for the necessity of virtues. Wisdom, the ability to strive towards the well being of the whole society, should be the skill of the ruling class. Courage, the ability to make the right judgments about the nature and extent of dangers, and to carry out orders without thinking of personal risk, should be the virtue of soldiers. Discipline, the ability to control certain desires and appetites, is the virtue of the people. They are to follow their leaders instead of pursuing their private interests. Societal justice emerges when all classes perform their roles appropriately.

Plato’s plan is to draw a logical analogy between the operation of society and the life of each individual human being. He supposes that people exhibit the same features, perform the same functions, and embody the same virtues that states do. Plato defines the soul as consisting of three parts for everyone. The rational soul (mind or intellect) is the thinking part, which judges what is true and false, and how to live a proper life. The spirited soul (will) is the active part, and its function is to carry out the orders assessed by the intellect to be best. The appetitive soul (emotion or desire) is the part that feels and wants many things, and to achieve self-control a person should defer the pursuit of most of these emotions or desires. In Plato’s view a person is just when the three souls perform their proper functions in harmony.

Through his examination of the state and the individual, Plato finds that justice emerges from the harmonious interrelationship between the separate components that constitute the whole in each case. He also presents some vital ideas on the nature and profitability of justice. He claims that justice is fundamental both for society and the individual, and that justice is always preferable to injustice, and finally that a just social organization is a premise for individual justice. His societal division points to merit as a central criterion for justifying inequalities: People belonging to the same class contribute the same to society and should receive the same benefits, whereas citizens of different classes are given different burdens and benefits.

## **Aristotle**

Aristotle continued the quest for justice in his book *Nicomachean Ethics* (1985). Like Plato, Aristotle regards justice as a key to happiness both for the individual and society, and he recognizes merit as an allocation principle. Unlike Plato, Aristotle claims that justice cannot be found in any abstract notion, he presents the principle of equality, and he differentiates between variances of justice (distribution, correction, and equity).

The Doctrine of the Mean is central to Aristotle. It is based on the idea that one quality may be the opposite of another. Aristotle thinks that moral virtues, i.e. bravery, temperance, generosity, are “desire-regulating” character vices located at the balancing point (mean), between more extreme character vices. The mean between these qualities is rationally determined, it is relative rather than absolute, and it differs with respect to individuals, objects, time, and circumstances of action. Justice has a special position: While the other virtues have a tendency of becoming self-centred, justice is concerned with the equitability or fairness in interpersonal relations. Moreover, justice is the virtue, which unites and orders all other virtues.

Aristotle finds that justice emerges as a mean between two extremes. If justice is seen as an intermediate between loss and gain, it occurs when you do not take too much out while also not putting too much in. This leads to Aristotle’s fundamental rule of justice: Justice means treating equals equally and unequals unequally, and the unequal treatment should be in proportion to the inequality. The fundamental rule implies to define what counts as a relevant difference when justifying differential treatment.

Aristotle was aware that justice can be understood in many ways. To Aristotle, distributive justice is one kind of justice that questions “the right amount”. The fairness of the distribution depends upon the relevant characteristics of the individuals concerned, the goods to be distributed, and the context of the distributive situation. Two equal individuals deserve equal shares, but if possessions are distributed between two unequal individuals they deserve proportionately unequal shares, i.e. the ratio of the distribution must equal the ratio between the merits of the two unequals.

Aristotle’s examination of justice is important for many of contemporary ideas on justice. One noteworthy proposition is the fundamental rule of justice, but the difficulty is what aspects differentiate “parties”. Another important feature is that Aristotle was the first to propose logical reasons for the claims of merit and equality.

### **2.1.2 Utilitarian, egalitarian and desert-based ideas**

In this section I turn to utilitarian, egalitarian and desert-based theories. Like Plato and Aristotle, utilitarianism focuses on the idea that justice and happiness are related terms. Egalitarianism is a set of theories that advocate the principle of equality. Desert-based theories are inspired by the principle of merit.

#### **Utilitarianism**

Utilitarianism is an ethical doctrine and an economic/political doctrine (Barry 2000). My focus is the latter. This doctrine assumes that society has a utility function constituted by a sum of individual utility functions. The primary principle is: “The greatest happiness of the greatest number”.

Two leading utilitarian thinkers are Jeremy Bentham and John Stuart Mill. Bentham unites the idea of maximizing overall happiness at the societal level with psychological egoism at the individual level (ibid.). His point is that each person can do no other than seek his own happiness, while the community of men ought to seek the “general” happiness. The probable tension between the production of general happiness and egoism is resolved by sanctions of the law. Bentham interprets the principle of maximum possible happiness as the greatest amount of total happiness.

Mill built on Bentham’s ideas in his attempt to demonstrate “proof” of the utility principle. Mill differentiated between “higher” and “lower” pleasures and said that some activities were of a higher quality than others. Mill suggested that freedom of action was a value in itself, irrespective of its contribution to utility. He also contended that science and art are important, even though they appear to yield quite small units of “quantitative” happiness.

To Bentham and Mill allocation principles are means rather than ends, resulting in any distribution of goods being interesting only to the extent that it has an impact on the goal of maximizing happiness/pleasure in society. Bentham and Mill conclude that the minimal state is best suited to generate the highest amount of utility, on the grounds that redistribution might lower productivity because of lack of incentives. Some modern utilitarian thinkers disagree on this. Their claim is that redistribution of wealth and income creates utility by diminishing envy and that the loss of happiness for the rich is much smaller than the gain of happiness of the poor (Lamont 2003).

Utilitarianism is criticized on a variety of accounts. One matter is that happiness is not an objective property that can be summed and put on a scale, and that evaluations of total happiness are impossible (Barry 2000). Another matter is the treatment of individuals as a secondary concern to the happiness of society (Rawls 1999). A third matter is the treatment of individual preferences: If negative preferences, e.g. that some minority should be given fewer material benefits than others, are widespread and not outweighed by the minorities' preferences, utilitarianism recommends an unequal distribution (Lamont 2003). A fourth matter is the different interpretations of the utilitarian principle. This can either be understood as "the greatest number of people should enjoy happiness" or as "the total amount of happiness is to be maximized".<sup>8</sup>

### **Egalitarianism**

Egalitarianism is in conflict with the utilitarian idea that patterns of distribution are merely important if they impact on the total level of happiness. Egalitarianism is a set of related theories that advocate the equality principle. In its strictest form, the principle of equality says that every person should have the same level of resources, be it in the form of material goods and services, happiness, or power. My literature review has not provided any examples of those demanding the strictest form of equality in outcomes. On the other hand, many scholars find that the removal of gross social and economic inequalities represent a societal improvement. It is considered that social and material stratification preserves existing dimensions of social inequalities, whilst low levels of inequality give people a sense of full-fledged membership of community.

A movement towards equality is criticized as it requires that people with widely different contributions should be paid the same amount. Another objection is based on the hypothesis of trade-offs between equality, liberty and prosperity: The problem with strict equality is that it involves "too much" political or governmental control at the expense of liberty. In addition, the obligation of egalitarian measures in the market disturbs production and mechanisms that allocate resources efficiently, and the talented and industrious are discouraged and everyone is eventually worse off (Lamont 2003).

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<sup>8</sup> The most common interpretation is that policy ought to aim at producing the greatest total happiness. This certainly is a consistent view, but it is open to the very serious objection that: "Because it is solely concerned with consequences in terms of the production of beneficence, it obliterates some important elements in our moral and political vocabulary, namely equality, justice and rights" (Barry 2000: 122-23).



Whilst there is much debate on the desirable level of inequality of outcomes, all egalitarians agree on the principle of equal opportunity. One cannot strictly separate equality in outcomes from opportunity. Both are about eliminating arbitrary advantages and levelling out social and economic differences. The case for equal opportunities is, however, argued on the basis of liberty. An increase in opportunity is an increase in liberty, as “equal opportunity” refers to the removal of impediments or obstacles that stands in the way of an individual realizing her potential (Barry 2000). Amartya Sen (1992) says that what matters is equality of capabilities. Sen comments that modern egalitarian theories should arrange social circumstances so that the starting points in life are not such that some have unfair advantages over others.<sup>9</sup>

### **Desert-based theories**

An important aim for theories advocating the principle of desert is to justify departures from equality. According to desert-based principles of justice, distributive systems are just, insofar as they distribute incomes according to the different levels deserved by the individuals in the given society for their productive efforts or contributions. Most proposals for desert fit into one of three broad categories; to reward people for their work activity according to the value of their contribution to the social product, to reward people according to the effort they expend in work activity, and to compensate people according to the costs they incur in going about their work (Lamont 2003).

Desert theories pose some difficulties. On the one hand, contemporary desert-based criteria subscribe to the value of raising the social product. On the other hand, all desert-based principles are “backward-looking” and justified with reference to work in the past or present. Although the same payment can both function as an incentive and be deserved, incentives are distinctly different from deserts since they are set up to create a situation in the future. Incentives are a form of entitlement, and perhaps a better way to secure future prosperity since a person can be entitled to a payment without it being deserved (Lamont 2003). Also, desert-based principles take external factors into account when assessing economic benefits. One may, for instance, imagine that a person's productivity is influenced by many factors he or she has little control over.

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<sup>9</sup> Other important theorists asserting an opportunity-based egalitarianism are Arneson (equal opportunity for welfare), Rakowski (equality of fortune), van Parijs (equalizing opportunities) (Barry 2000).

### 2.1.3 John Rawls and Justice as Fairness

I now turn to John Rawls and his theory of justice as fairness. In his works – from the 1958 article “Justice as Fairness”, to the revised edition of his famous book *A Theory of Justice*, published in 1999 – Rawls presents a new approach to studies of justice. Rawls’s theory is a mixture containing both procedural and social elements. On the one hand, he wishes to show that justice is about the rules which should run social practices, and whether or not the central institutions support and promote just solutions. On the other hand, he attempts to discuss the outcomes produced by these rules, and whether or not institutional structures create mechanisms which secure fair and morally acceptable distributions of rights, goods, demands and burdens (Rawls 1999). Rawls emphasizes the role of societal institutions. They have a decisive influence when it comes to the distribution of welfare, the production of goods and services, the revision of laws, and the allocation of duties and rights (Johannessen 2003). I begin with his responses to the three doctrines presented; utilitarian, egalitarian and desert-based principles of justice.

Rawls (1999: 20) states that the aim of justice as fairness is to work out a theory that represents an alternative to utilitarianism. There are many contrasts between utilitarian theory and Rawls’s ideas. First, utilitarianism treats individuals merely as means to the happiness of society. Based on the Kantian notion that individuals are “ends” in themselves, Rawls stresses that individuals are autonomous agents who ought not to be used as means to the ends of others. Second, as long as there is a net gain for society, the utilitarian idea of total happiness puts no restrictions on the troubles some people must endure. In Rawls’s view, a theory of justice cannot justify disadvantages to some by pointing to advantages of others. Third, whereas utilitarianism extends to society the principle of choice, justice as fairness assumes that the principles of choice and justice are “themselves the object of an original agreement” (ibid.: 25). The final contrast is that principles derived from the original position focus on equal liberty and restricting social and material inequalities, and that these principles are prioritized, whereas the utilitarian focus is on maximizing happiness.

With reference to strict egalitarianism, Rawls claims: “All social values - liberty and opportunity, income and wealth, and the social bases of self-respect - are to be distributed equally unless an unequal distribution of any, or all, of these values is to

everyone's advantage" (ibid.: 54). Thus, Rawls says that inequalities are accepted as long as these departures from equality are justified.

Desert-based theorists emphasize the responsibility of people in choosing to engage in more or less productive activities, and that each person should be rewarded as he deserves. Rawls, on the other hand, finds that "individuals with greater natural endowments" have no right to obtain further benefits in ways that do not contribute to the advantage of others (ibid.: 89). In fact, natural talents are arbitrary. Injustice occurs when inequalities do not benefit all, and therefore, unlike equality, desert-based principles are eliminated as a justification for unequal earnings.

A good starting point to Rawls's theory of justice is his understanding of society. To Rawls, a society is fair cooperation over time. In this cooperation people share some basic needs, but they also pursue different goals, a fact which makes it necessary to agree on some "common guidelines on justice". Such common guidelines, shared and accepted by all citizens, are precisely what Rawls seeks to identify. He decides to use the contractarian method and to make the principles of justice the object of the original agreement.<sup>10</sup> This means the construction of a hypothetical situation, and the procedure involves; a) a description of the conditions under which persons meet to plan the new rules, principles and institutions of society, and abstracting individuals from their particular social and economic circumstances; and b) the presentation of arguments in favour of principles that free and rational people, concerned with their own interests, would allow to govern their future relationships. I start with the construction of the original position and the participants' rationality and knowledge and psychology.

First, Rawls's wants to ensure that the participants meet on equal terms. To do this Rawls places all participants behind the "veil of ignorance", and then facts about the participants are concealed from themselves and the other members (ibid.: 118-23). Behind the veil of ignorance no one knows his place in society (e.g. class, economic fortune, abilities, intelligence, psychology, age, colour and gender), and participants are

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<sup>10</sup> Contractarianism is an old tradition, dating from Hobbes, Locke, and Rousseau and their discussion of the traditional problem of political obligation. The basic idea is that legitimate moral rules emanate from commitments that are voluntarily made (Cudd 2003). Rawls presents his goal like this: "My aim is to present a conception of justice which generalizes and carries to a higher level of abstraction the familiar theory of the social contract" (Rawls 1999: 11). The basic idea then is that: Under some "carefully specified conditions" rational actors would choose a set of principles of justice "consistent with our intuitive ideas of distributive justice", and then, when these intuitive principles of justice are put into practice, "they will produce outcomes that are morally acceptable" (Barry 2000: 156).

not aware of their “conception of the good”, (i.e. beliefs about their ethics, religion, political values, the good life, and chief purposes in life). This way none of the participants have any way of tailoring the rules to his or her advantage.

Second, Rawls wants his participants to be rational actors that promote their self-interests (ibid.: 123-30). Obviously, if a man is unfamiliar with the details of his rational plan of life and knows nothing about his personal traits, this causes a problem when he is to consider how he can secure his own position. Rawls solves this problem by giving the participants some knowledge. More precisely, the participants are to know some general facts about human society and that society is subject to the circumstances of justice, they understand political affairs, some principles of economy and general laws, and they have a “thin conception of the good”. This “thin conception” lets the parties assume that they normally prefer more of primary goods (health, physical strength, material resources and influence) than less, and that they should protect their liberties, widen their opportunities, and enlarge their means to promote their purpose in life, whatever that is.

Third, Rawls makes some assumptions about the participants’ psychology. His parties are free from envy, since envy tends to make everyone worse off. The parties accept incentives and inequalities. The parties are concerned with their own maximizing of primary goods without regard to the position of others. Most important, the parties are risk-averse (maximiners) (ibid.: 132-33).

These are the essential features that describe the original position and the participants. Step two in the process is a presentation of the principles that the parties would choose. The primary subject is the way that “the major social institutions distribute fundamental rights and duties and determine the division of advantages from social cooperation” (ibid.: 6). Rawls derives two principles:

First principle: Each person is to have an equal right to the most extensive total system of equal basic liberties compatible with a similar system of liberty for all.

Second principle: Social and economic inequalities are to be arranged so that they are both:

- a) to the greatest benefit of the least advantaged, consistent with the just savings principle,
- b) and attached to offices and positions open to all under conditions of fair equality of opportunity (ibid.: 266-67).

The principles of justice are to be ranked in lexical order, and therefore the basic liberties can be restricted only for the sake of liberty. There are two cases. First, a less

extensive liberty must strengthen the total system of liberties shared by all. Second, a less than equal liberty must be acceptable to those with the lesser liberty. Principle 2b specifies fair equality of opportunity and is technically prior to 2a, the difference principle. Also in this matter there are two cases in which fair equality of opportunity can be traded. First, an inequality of opportunity must enhance the opportunities of those with the lesser opportunity. Second, an excessive rate of saving must on balance mitigate the burden of those bearing the hardship.

Rawls finds the existing distribution of wealth to be determined by luck, political power and past injustices, and to him, the efficiency principle cannot be used as a satisfactory criterion of justice. Rawls (ibid.: 58-60) argues that the competitive market must be regulated by the fair equality of opportunity principle, and that departures from equality only are justified if they result in clear gains. The distribution of natural talents will, however, enable some to gain more in return for their skills than others. This is arbitrary from a moral viewpoint. Hence, Rawls states that there may be just inequalities, but also that an inequality is unjust except insofar as it is a necessary means to improve the position of the worst off.

These are some of the contributions to the field made in the monumental book *A Theory of Justice*. At present Rawls's theory is seen as the most important work of moral and political philosophy in the 20<sup>th</sup> century. Although Rawls has many followers, his theory has also faced frequent critique (Kilcullen 1996; Barry 2000; Lamont 2003).

Desert theorists are unhappy with Rawls's claim that individuals do not deserve their talents. When talents are stripped away, they find it difficult to see what is left to praise or blame. Furthermore, to advocates of desert-based principles it is obvious that some people deserve a higher level of material goods because of their hard work or contributions, even if their unequal rewards do not also improve the position of the least advantaged. In his responses, Rawls focuses on the fact that social life is a joint activity in which the talented can only realize their talents in cooperation with the less talented.

A general objection to justice as fairness is on the design of the original position. Some have complained that the original position is so artificial that it does not correspond with any process of reasoning to be engaged in (Kilcullen 1996). Obviously, the design ensures the principles Rawls favours. Rawls's point is to look at justice without making any reference to differences in bargaining power among people who

want to secure their position. The risk-averse strategy is argued as the issue at stake is of such fundamental importance.

Egalitarians have criticized the difference principle. They argue that the difference principle is consistent with vast inequalities between the rich and the poor. Rawls's response is that such outcomes are unlikely to occur since the application of his principles would bring about a natural tendency towards equality. Empirically oriented scholars have argued that it is difficult to put the difference principle into practice. It is hard to identify the least advantaged, and this is something I return to in Chapter 3.

The justification of the priority rule is also criticized. It is possible to think of situations where it is rational to trade an equal liberty for an economic improvement. Rawls counters this argument by his claim that given a certain level of economic development, it is not rational to trade an equal liberty for an economic advantage.

The next section presents Robert Nozick. Nozick is considered one of Rawls's toughest critics. He refutes justice as fairness and presents an alternative conception of distributive justice, the entitlement theory (2000). His book *Anarchy, State, and Utopia* was also meant to elaborate on some of the gaps in earlier analysis of procedural justice, like the one presented by Hayek.

#### **2.1.4 Entitlements and resources**

I begin with some of the contrasts between Robert Nozick's entitlement theory and Rawls's justice as fairness. First, Nozick points out that even if Rawls's theory looks like a procedural theory, it emphasizes that it is the pattern a distribution displays which makes it just. To Nozick distributive justice is not about what a distribution looks like at a given time, but how it came about. In order to work out a historically unpatterned theory, he presents an entitlement theory, according to which the justice of a distribution is determined by rules of just acquisition and transfer (Solomon and Murphy 2000).

A second contentious issue is the role of the state. Whereas Rawls proposes that the state should engage in taxation to ensure the fair distribution of wealth and income, one of the main intentions of Nozick and his entitlement theory is to show that there is no moral justification for a rearrangement of the allocation of wealth in society. Nozick

proposes that the minimal state is the most extensive state that can be justified, since government redistribution would alter the concept of possession.<sup>11</sup>

Third, Nozick distinguishes between historical principles of justice and end-state-principles. Referring to Rawls's theory, Nozick holds that end-state principles advocate that all we need to explore in judging the justice of a distribution is who ends up with what. But, says Nozick (2000: 304): "...most persons do not accept current time-slice principles as constituting the whole story about distributive justice." Nozick argues on the need to know how the distribution came about. Historical principles of justice hold that "past circumstances or actions of people can create differential entitlements or differential deserts to things" (ibid.).

Fourth, Nozick makes the distinction between patterned and unpatterned principles of justice. A principle of distribution is patterned if it identifies "that a distribution is to vary along with some natural dimension, weighted sum of natural dimensions, or lexicographic ordering of natural dimensions" (ibid.: 305). Rawls's principles of justice are patterned, whilst Nozick finds that any pattern of the distribution is just provided it has the appropriate history.

The appropriate history comes about if Nozick's three principles of justice in holdings are followed (ibid.: 302). The first principle deals with how things not previously possessed by anyone may be acquired: An acquisition is considered just provided if it does not worsen the position of others. The second principle is designed to specify fair contracts while ruling out stealing, fraud, and other illegitimate transactions: A transfer of holdings is just if, and only if, it is voluntary. Still, there are many existing holdings that are the result of acquisitions or transfers that, at some point in time, did not satisfy the principles 1 and 2. The third principle, governs the proper means of setting right past injustices in acquisition and transfer. Nozick claims that no one is entitled to a holding except by (repeated) applications of the first 2 principles. He

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<sup>11</sup> Nozick justifies the minimal state on three different grounds. First, people have no moral right to be supported by the state, and although the natural lottery may seem wrong from a moral point of view, it is not unjust. Second, people own themselves, including their talents and whatever they can produce with these talents. According to Nozick things are never collected into a sum total to be reallocated by a central distributing authority. Third, the minimal state protects individuals from invasions of their rights (Lamont 2003). Nozick's minimal state has three functions: First, it enforces a monopoly in the use of force. Second, the state protects everyone in its geographical area. Third, by charging everyone for this protection the state engages in a small kind of taxation (Feser 2006).

presents the general rule would to compensate the present least advantaged, as they are most likely to be victims of past injustice

Although Nozick has many followers, his theory is criticized. One point is that his theory is of no use in evaluating the justice of actual societies, since past injustices undermine the justice of every subsequent distribution (Lamont 2003). Nozick agrees to this, granting that his social contract cannot be introduced before a full redistribution of property has taken place (Nozick 2000). Another point is that the minimal state allows far too little scope for Government intervention. The principle that everyone should own what they produce is disturbing, since important members of any community do not earn their own money, e.g. children (Bojer 1993). A third point is the paradox with the third principle. This principle leaves room for considerable state redistribution, and at the same time one of the main points of the entitlement theory is to make the case for the minimal state (Barry 2000).

### **Dworkin**

In contrast to Nozick and his attempt to rival Rawls's justice as fairness, Ronald Dworkin (1981) tries to amend some of the shortcomings of Rawls's principles of justice. There are three shortcomings in particular. The principles are too weak in their compensation of individuals with external problems (such as disabilities or bad health), they require that people who choose to work hard, and hence earn more, subsidize those choosing more leisure and less income, and envy is not considered, since the parties are free from envy (Barry 2000; Lamont 2003). To Dworkin, the distribution of income and wealth is less important – what matters is that people begin with equal resources.

Dworkin presents a thought experiment of an initial situation. In this situation people are given the same amounts of capital (clam shells), and this capital can be used to purchase certain resources (land, materials and others) in an auction. People will bid for different resources as they have different plans in life. The procedure of an auction ensures that an individual must pay more to get a good that is highly valued by others. It costs less to bid for something that is not as popular. The distribution after the auction is expected to be envy-free (Barry 2000; Lamont 2003).

Another part of the imaginary scheme deals with the unequal distribution of natural talents. Dworkin creates a hypothetical insurance market in which people must



buy premiums that protect them against the risk of being disabled or insufficiently talented. This ensures that those with talents must somehow pay for their talents, while those who lack talents are secured through insurance (Lamont 2003).

One criticism of this theory is that much inequality emerges not from individual choices, but from other peoples` choices. Resources do not exist independently of the human action necessary to create or exploit them (Barry 2000). In addition, one could criticize the auction for being too abstract, in the same way as Rawls's original situation. Finally, unlike the difference principle, it is not clear what would constitute an implementation of such theories and their variants in a real economy. The theory requires inequalities in the distribution of natural talents to be compensated, but measuring differences in talents seem to be an impossible task (Lamont 2003).

## 2.2 Generation

In social sciences, generation has become a valuable concept. It is also recognized that the term generation is difficult to work with as it has many loose meanings. There are various perspectives to generational analysis. One important scheme is between diachronic and synchronic generation approaches, and this is investigated broader in the next section. Another important scheme is between the family and society.

According to Taskinen (2004), the "traditional" concept links generations to the family. Generation might be used to define a stage in the succession of natural descent, and some might claim that the term generation should be restricted to analysis at the family level. Generation analysis at the family level refers to kinship relationship between children, parents, grandparents and great-grandparents, and it is quite easy to tell when one generation begins and another ends (Wintersberger 2000; Taskinen 2004).

The family level is an important part of the generation analysis, but the societal level also presents important perspectives. In generation analysis at the societal level, it is more difficult to tell when one generation begins and another ends.<sup>12</sup> Generation

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<sup>12</sup> Some time ago, scholars within a positivist tradition tried to set boundaries, most often assessing the duration of a generation to be about 30 years. This interval was set as the first 30 years was a learning period, around the age of 30, individual creativity began, and at 60 years one quits public life (Mannheim 1952). Abrams (1970) points out; the more exact one tries to set boundaries of any given generation within a society the more unrealistic a definition is going to be.

analysis at the societal level refers to a range of rather different phenomena (Mannheim 1952; Ryder 1965; Abrams 1970; Thomson 1996; Eyerman and Turner 1998; Lüscher 2000). In its broadest sense, the word generation might refer to contemporaries, i.e. those who happen to be alive at the same time in the course of history. It is more common to use terms like “old” and “young”, and as such a generation may include many cohorts. Or one might focus on coevals, i.e. those who are at the same age, or specify generations to coevals that share similar thoughts or modes due to particular historical experiences.<sup>13</sup> Wintersberger (2000) and Taskinen (2004) suggest separating between longitudinal definitions of generations (cohort) and structural definitions of generations (childhood).

Even though one separates between studies conducted at the family level and the level of society, one cannot escape the reality that generational relations at the levels of the family and of society depend on each other. The organization of public welfare is, for instance, linked to the conduct of family tasks and vice versa. Lüscher (2000) points out that reproductive decision taken in the family affect the demographic composition of a society, but reproductive decisions also depend on family policies. Another example is the way intergenerational distributions between relatives affects material welfare. This is illustrated by inheritance or gifts passed on from parents to grown up children or the other way around, or gifts passed from grandparents to their grandchildren.

My analysis of generations is centred on the societal level (macro-level). As such, there are many different understandings of the term generation. In the social studies of childhood, childhood and adulthood are understood as structural categories of society. At the societal level generation issues of concern are changes in economy, politics and culture, and by interpreting these parameters one is able to understand generational relations as society evolves (Lüscher 2000). This structural understanding is also the basis for my discussion. Before I look into this approach I will present some other approaches to the study of generational relations.

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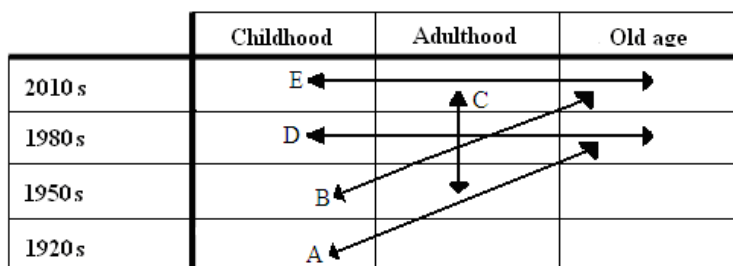
<sup>13</sup> Karl Mannheim argued that a whole social group's thought was formed by its social position. To him a generation denotes a group of individuals that on the basis of common biological ageing have a particular social position in the historical and social process (1952). The members of a generation share a similarity of location (same historical and cultural region), they participate in the characteristic social and intellectual currents of their society and period, and this predisposes them for a certain mode of thought and experience, and a characteristic type of historically relevant action.

### 2.2.1 Different generation approaches

There are different approaches to the study of generational relations. In this section I present a division between diachronic approaches and the synchronic approach. It is also pointed out that different terms and concepts are used in studies of generational relations, and I present some considerations on the reasons for choosing “generation” in my synchronic investigation.

The diachronic approach is used in the study of a phenomenon or event as it changes through time. A diachronic generation approach will follow an age group or a cohort over time as they pass through various age stages. In principle one can compare different cohorts, i.e. age groups born at different periods. The synchronic approach is used in the study of a phenomenon or event of a particular time. A synchronic generation approach compares contemporary age groups or generations. In an extended sense, introducing the historical context, one can, in principle, compare generational relations at different historical times.

It must be noted that many generation analyses does not take childhood into account, and one premise for this section is to consider childhood as part of the age or generation structure. The other premise is that childhood must relate to other parts of the age or generation structure. To simplify various perspectives one may use a twofold model that includes “historical time” and “age spans”, i.e. the culturally defined phases of the life cycle observed in any society (Abrams 1970). Childhood refers to the time or state of being a child, adulthood refers to the state of a person who has attained maturity, and old age refers to a late time of life. Later on I present theories formulating childhood as a structural category. The “historical time” starts in the 1920s and is divided by 30 year intervals. The start and end of the series, as well as the 30 year distance, are set for illustrative purposes.



Source: Developed from Qvortrup 2003

**Figure 1:** Model of generational relations

Figure 1 is a simplification, but it tries to catch the most significant perspectives of generational relations. It shows that childhood, adulthood and old age are separate categories that may be observed empirically at different historical times, but also that childhood, adulthood and old age are connected; there are relations between the three at different historical times. The model also illustrates mobility as children eventually become adults; children of the 1980s are adults in 2010, and (some of the) adults in the 1980s were children in 1950s.

The arrows illustrate different approaches to the study of generational relations. Arrows A and B illustrate the passing of an individual or age group or birth cohort from one category or age span to another. One might also compare A and B, i.e. comparing age groups born at different periods. Life stage theories, life course theories and cohort theories are important in this respect.

Life stage theories are derived from developmental psychology.<sup>14</sup> Life stage theories understand the ageing process through stages, where one stage follows another with regard to mental and social development. One central premise is that the different stages are linked, as experiences in early stages affect all later stages. This perspective points out the possibility to understand “adult outcomes” from childhood experiences.

The life course model is illustrated by Glen Elder’s studies of children (1999). Elder and his colleagues followed large groups of people who were exposed to different historical and societal experiences and compared the impact of these experiences. One important question was whether or not adolescence during the depression in the 1930s left different marks in adulthood than growing up during World War II. The aim was to generalize on the relation between personal development and societal changes. The life course model, pointed out the possibility to generalize on “outcomes” in adulthood from structural childhood experiences.

In David Thomson’s works (1991; 1996), the term generation has one specific meaning - the group of people born in the same time interval and ageing together. This is the birth cohort. In his longitudinal studies, he finds a shift in public and private

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<sup>14</sup> Developmental psychology is the study of related behavioural changes that occur as a child grows up (Woolfolk 2004). Amongst the most prominent researchers in this tradition we find Jean Piaget, Lev Vygotsky and Erik Eriksson. Piaget organized cognitive development into a series of four stages (Woolfolk 2004). Vygotsky believed that knowledge and skills are acquired in interaction with adults, and that the child internalizes or appropriates and then reproduces culture (Harding 2005). Eriksson described eight developmental stages. In each stage the person confronts, and hopefully masters, new challenges, and each stage builds on the successful completion of earlier stages (Woolfolk 2004).

priorities from the interests of the young to the interests of the middle-aged and the elderly. He argues that generations are “selfish” and that it is the nature of welfare states to pursue short-term interests. In comparing generations, he finds that people born approximately from the late 1920s to the early 1940s receive more benefits than they themselves contributed. For younger generations, in particular those born after 1970, this situation is reversed because of the ageing society.

Norman Ryder defines a cohort as “...the aggregate of individuals (within some population definition) who experienced the same event within the same time interval” (1965: 845). He presents the cohort from a macro-analytic standpoint, more specifically the use of cohort to study social change. He states that if cohorts permit social change they differentiate cohorts, and the comparison of their careers becomes a way to study change. In his view, the cohort is a structural category with similar analytic utility as social class. Cohorts may be identified at birth, but there are several events to identify cohorts, such as the year they completed schooling, the year they married, the year they entered the labour force full time.

Arrow C illustrates the possibility to compare the position of different categories or age spans by historical time, e.g. to compare childhood in the 1920s, 1950s and 1980s. The lifespan account is important in this respect, and this approach is presented by Norman Daniels (1988; 1993). In the beginning of the 1980s there was an ongoing debate of the “competition for resources” between the young and the old in the US. Daniels found this discussion unnecessary, since those who are young and bear the costs of institutions for the elderly later will benefit from the institutions that burden them now. He proposed to compare “how well off our parents were at our age and how well off our children will be when they reach our age”.

Arrows D and E illustrate the possibility to compare childhood, adulthood and old age at the same time, and also to make historical comparisons of generational relations. Synchronic structural analysis of age groups or generations is, by far, the most common approach to studies of age groups or generations (Ryder 1965). The best examples are probably the employment of cross-sectional inquiries by Eurostat, OECD and LIS on their masses of income data. Such data can be used for comparisons in historical time, e.g. study of income data separated by age groups from 1985 to 2005.

So far I have presented different approaches to the study of generations, and I have distinguished between the synchronic and the diachronic approach. In the next section I will present the new social studies of childhood and its structural generation approach to greater extent. This will include a proper definition and justification of the generation groups childhood, adulthood and old age. This section, however, introduced a range of other terms. And it is important to comment why I find life course, life stage, lifespan and cohort are less suitable to my synchronic generation study.

Terms like “life cycle” and “life course” are often used interchangeably. In much modern literature, the term life course has replaced that of life cycle, because the former carries fewer normative implications than the latter (Marshall 1997). The hegemonic discourse on life course during the 20<sup>th</sup> Century is the image of stage-like development, i.e. an individual or group’s progression or passage through life through a series of differing stages of development (ibid.). Within the discourses of life stage theories and life course theories, childhood is the first “phase” and old age the last. In comparison to adulthood, children are seen as “becomings” and the elderly are seen as “has beens” (Närvänen and Näsman 2007). Life stage theories (development psychology) are more individualistic, whilst Elder (life course) chose a macro-perspective.

It seems to me, and as argued by the social studies of childhood, that the terms and theories of life stage and life course theories are related to a future-oriented discourse to children and childhood. This is an important approach, but it is not the one I choose.<sup>15</sup> This thesis is theoretically informed by the social studies of childhood, and these studies of childhood represent a break from the future-oriented approach. The point is that it may also be of value to study children without the future adult in mind. As such, it seems that the life stage and the life course models are less suitable for structural comparisons of childhood, adulthood and old age.

The “lifespan” and “cohort” models are interesting. Daniels (1988; 1993) is concerned about differences in lifetime expectations, and the lifespan model is interesting since it focuses on comparisons in historical time. At the same time, Daniels rejects comparisons of co-existing age groups. To Ryder (1965), the cohort approach is appropriate for the study of intra-cohort temporal development or comparative cohort

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<sup>15</sup>. Later on I argue that both for the individual, and for society, it is of great significance to study individual and group development and adult outcomes with regard to conditions of childhood (e.g. Unicef 2000; Esping-Andersen and Sarasa 2002).

careers. Children and childhood are of primarily interest with regard to outcomes as adults and adulthood. To Thomson (1996) generation stand for birth cohorts (groups of people born in the same time interval and aging together). This implies that one's generation is fixed for life. His study shows the possibility to compare different birth cohorts, and his study serves a historic interest as he discusses a shift in public and private priorities from the interests of children and young adults towards the interests of the middle-aged and the elderly changes

The term cohort is definitely applicable to empirical analyses of the material welfare of different age groups or generations. Here it should be noted that Ryder rejects the dominant emphasis on comparative cross-sectional inquiries. The term cohort is, on the other hand, a longitudinal definition of generation, whereas social studies of childhood define generation structurally (Wintersberger 2000).

A key achievement, of the international project "Childhood as a social phenomenon" was to formulate theories about childhood as a structural category (Qvortrup et al. eds. 1994; Olk and Wintersberger 2007). The structure-oriented approach finds generation to be a better term compared to life course, life stage, lifespan and cohort. As is seen, the latter refer to childhood as a period of time, and the transition from childhood to adulthood (individually or at group level) is the centre of focus.

A final set of terms that might be considered are related to age, and they include "age classes", "relative age status" and "age groups" (Abrams 1970; Närvänen and Näsman 2007). I understand the argument that one could use age groups. For one thing, it is more appropriate to discuss "age groups" in empirical investigations, since one must define groups according to age in, for instance, analyses of income distributions. At the same time, like Qvortrup (2003), Wintersberger (2005) and Alanen (2007), I find generation to be a more promising concept compared to age. The use of generation, in theoretical discussion, is to a greater extent associated with a shared position in society (Qvortrup 2003). In the same way that feminism refer to "gender" and not "sex", one should rather refer to "generation" and not "age" because of the close biological connotations. In theoretical discussions of children and childhood, age limits might also become too precise and "artificial". In particular, this is the case when dealing with historical (and global) themes. As mentioned in the Introduction, childhood has become longer in terms of school leaving age and shorter in terms of voting age. Definitions like

childhood, adulthood and old age, are more robust to changing societal circumstances than more precise age categories. Thus, I discuss generation theoretically, but in the empirical examinations of Chapter 4 and Chapter 5 I use age groups.

### **2.2.2 A structural approach to childhood**

The number of researchers working within the framework of the new social studies of childhood has increased tremendously over the last decades.<sup>16</sup> The social studies of childhood is not a coherent school of scientific thought, but some assumptions are shared (Alanen 2007). In particular, two innovations must be considered (Wintersberger et al. 2007). First, the actor-oriented child research rests on the pillar of re-investing children with their agency and subjectivity. Assumptions of children's immaturity and incompetence are questioned, and one draws the attention to children's competences and contributions. Qualitative research methods have been preferred, and agency-focused studies have demonstrated children's cleverness, creativity and strategies. As stated before, it does not make sense for my study to use the actor-oriented approach.

The other innovation is the structure-oriented approach to childhood. In this frame, the level of analysis is society and childhood is taken as the unit of analysis. This macro-analysis involves thinking in terms of children as an aggregate, i.e. the actual living children, with their individually experienced childhoods, are assembled as one population group (Alanen 2007). Researchers have preferred quantitative methods in accounting for features that children share and their structural contexts (ibid.). The structure-oriented approach is considered an adequate theoretical tool for my study.

According to the structure-oriented approach to childhood, childhood is considered a social category or permanent structure of society. The process of arguing that childhood is a structural category, involves two issues. First, to realize that even if children are becoming adults individually, childhood does not disappear (as new members are added). The understanding that childhood is a particular and distinct form of any society's social structure at any time, contrasts the "transient perception of a child developing towards adulthood" (Wintersberger et al. 2007), which is distinct for developmental psychology.

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<sup>16</sup> Three important books in this field are: Qvortrup, Bardy, Sgritta and Wintersberger 1994, *Childhood Matters. Social Theory, Practice and Politics*; Corsaro 1997, *The Sociology of Childhood*; and James, Jenks and Prout 1998, *Theorizing Childhood*.



The second issue is to identify tokens that separate children from adults, and the identification of mechanisms in society “structurally discriminating children” in comparison to adults (Olk and Wintersberger 2007). This does not mean a lack of awareness of differences between children, but an emphasis on maximizing children’s similarities (Qvortrup 2003). Differential access to resources and privileges is one feature that distinguishes children from adults. More importantly, one finds that children form the last large and compact population group excluded from full citizenship (Olk and Wintersberger 2007). Children’s citizenship does not cover vital areas such as politics, civil and criminal law, economics, and social responsibilities.

The structure-oriented approach states that whilst the individual childhood, understood as a phase in life, is defined by inner dispositions and the influence from those who are close, the structural childhood is defined by external parameters that exist independently of the individual child (Qvortrup 2003). Although childhood is a permanent structure of society, childhood is dynamic. The perspective of macro-analysis points out economic, political, social and cultural as the important circumstances of childhood. When these circumstances change, childhood is recreated. Also adults, and the elderly are exposed to the same external factors as children, but the impact of important societal events might differ between the three groups (Qvortrup 1999; 2003). Thus, it is important to interpret the relations between children, adult and the elderly in historical time (Lüscher 2000). One example is the way the shift from pre-modern to modern society changed the position and roles of children, adults and the elderly. These trends apply to most developed nations.

With the agricultural revolution some 8000 years ago mankind learned to cultivate soil and keep farm animals, and within a few thousand years this led most of the population from the stage of hunting and gathering to partaking in the new society based on agriculture. This economy was based on subsistence, and all generations took part in agricultural and domestic work. In the second half of the 18<sup>th</sup> century, scientific and technological changes began to radically change the world, and from the last half of the 19<sup>th</sup> century the industrial revolution took place. This transition changed the whole societal structure. These are some of the economic, political, demographic and child-related alterations connected to the Industrial Revolution.

- Economic changes: An enormous economic expansion took place, mechanization, factories and urbanization reshaped both the physical and mental landscapes, the labour system was transformed by wage-workers, and women took gainful employment.
- Political changes: Democratic rights were extended and social reforms were initiated.
- Demographic changes: Society underwent a demographic transition with falling birth rates and longer life expectancy.
- Child-related changes: Mass-schooling, the expansion of child-centred sciences, changing family structures, and children's chances of obtaining subject status increased.

In numerical terms, the consequence of falling birth rates and longer life expectancy increases the share of elderly people and lowers the share of adults and children. I will briefly comment on each group, beginning with the elderly. In the pre-modern period it was typical for relatives to share a common locality, as well as depend on offspring in old age. Industrialization brought about urbanization and the market system, and developments of welfare programmes for elderly people. In modernity, the material welfare of the elderly depends on individual savings and pensions entitlements based on their achievements in the labour market. To children, mass-schooling and “mental work” is of vital importance, in contrast to their former “manual work”. Among the notable changes for adults, the most striking is the transformation of the labour system by wagedworkers (and female participation in the labour force). Also, two economic incentives for having children vanished. First, with schooling parents lost an important component in the household economy. Second, with the establishment of welfare states, the state rather than children took responsibility for the security of people in old age.

My brief comments on some consequences of the Industrial Revolution, serves as an introduction to the next section; the presentation of a generational view of childhood. Generational analysis in the sense of comparing and confronting the condition of children with the condition of adults, including the elderly, is a quite recent development in structure-oriented childhood research (Wintersberger et al. 2007).

The assumption of generational research is that different “generational segments, such as for instance childhood, adulthood and old age, relate and interact with each other in particular ways under various historical and societal circumstances (ibid.: 15).

In my presentation I focus on historical shifts of generational relations, in particular on the mode of production. I end the section with some comments on generation and other explanatory variables of inequalities, such as class, gender and ethnicity.

### **2.2.3 A generational view of childhood**

As Mannheim (1952) and Abrams (1970) and many others point out, generation is linked to age. But to separate between generations one has to introduce categories of social structural analysis. Wintersberger (2000) and Taskinen (2004) propose differentiating between longitudinal generation definitions (like cohort) and structural definitions of generations. The proposed separation between childhood, adulthood and old age, is based on a structural understanding of generation.

My presentation of the structural approach gave the perspective that childhood is a dynamic, but permanent structure of society. First, it was argued that it is possible to account for children in their totality. The most important token that separate children from adults, is children's lack of full citizenship. Second, it was argued that childhood is dynamic in two respects; a) the members of "childhood" are replaced, and b) when economic, political, social and cultural circumstances change (over time), such changes affect the position of childhood. I will follow up on this last point.

The structural approach to childhood is in particular concerned with the specific structures and large-scale processes which impact children's daily lives and welfare. The key factor in forming society and childhood is the economic formation (Qvortrup 1999), and a central element in the economic formation is the mode of production and its respective division of labour. It has been an important issue for theorists working within the frame of the structural approach to childhood, to discuss the role of children in different modes of production and particular divisions of labour (Qvortrup 1999; Wintersberger 2005; Phádraig 2007).

In the pre-modern society children were an integrated part of the division of labour. In such societies, the boundaries between household members were not rigidly distinctive with reference to labour and economic activity.<sup>17</sup> Children's important role in what was seen as useful labour is demonstrated by historical documentation of their involvement. Another "proof" of children's valuable contributions was the struggle over their activities with reference to universal schooling (Qvortrup 1987; Smelser 1990).

In the modern societies in the west, however, one might conclude that children are excluded from the division of labour. It is a basic feature of such modern societies

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<sup>17</sup> Qvortrup (1987) notes that this is the deeper meaning, to Aries' (1962) observation that the idea of childhood did not exist during the times when children lived within the sociability of the local society. In medieval society, one lacked an awareness of characteristics distinguishing children from adults.

that school is compulsory, and that employers are forbidden to employ children. Even though there are laws restricting child labour, it is also a fact that many studies in affluent countries point to an increasing level of participation by young people in economic activity (Phádraig 2007).<sup>18</sup> But the fact that many teenagers combine part-time work and schooling does not change the fact that children's main activity is school. From this point of view, it seems that there is no basis to for establishing an adultist or generational division of labour (Olk and Wintersberger 2007).

One might, however, approach the position of children in the generational division of labour in a totally different manner. Qvortrup (1995; 1999), Hengst (2000), Wintersberger (2001; 2005) presents comparable stories that: "children's involvement in production and work is seen as a continuous feature of childhood, and scholarisation and human capital formation are not perceived as abolition of child labour, but as child labour adapted to the conditions of an advanced capitalist society" (Olk and Wintersberger 2007: 63). In this understanding, labour is understood as something more than work for wages. And in this extended perspective, the historical shift from classical child labour (manual work) to school work (mental activities) is a logical shift. The implementation of universal schooling is interpreted as a demand of the new industrial or capitalist society; children take part in the kinds of activities that are dominant in the respective mode of production.

It is also argued that the implementation of universal schooling was contested (Qvortrup 1987; Smelser 1990; Telhaug and Mediås 2003).<sup>19</sup> This struggle over child labour versus schooling demonstrates that children's activities are valuable. Thus, exactly as children were useful when their main activity was manual labour, children's

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<sup>18</sup> A simplified version of children and their participation in economically valued employment throughout history might be divided in three phases (Phádraig 2007). In phase 1, pre-capitalism and early capitalism, children, as other household members, were included in economic activity. In phase 2, mature capitalism, children were excluded from gainful employment. Compulsory schooling provides a response to the demands for a more educated workforce. In phase 3, late capitalism (late 20<sup>th</sup> century and onwards), there is great expansion of jobs in the less skilled services and production, and many young people combine part-time work with second level schooling.

<sup>19</sup> To Aries, "scholarisation" is the main process that brought about the modern concept of childhood. The struggle over universal schooling is presented in this way by Qvortrup (1987: 14): "The critical period of transition to developed capitalist societies was marked by a lively debate on the economic value of children, child labour and formal education for children. There was a struggle of interests over child labour power. The motives may have varied, but the fronts were quite clearly drawn: on the one hand, there were poor workers, small businessmen, and farmers, who claimed the right to make use of children productively; on the other side were progressive capital, the organized trade union movement, and the state, which perceived the need to provide children with elementary-school knowledge".

mental activities are useful in the sense that they contribute to human capital formation. One important difference is found, though. In the pre-modern society, the payoffs of children's manual efforts took place when children were children. The returns of children's schoolwork efforts take place after they have completed their education. This is to say, when children are adults and can engage in income-earning activities.

To structural theorists, the division of labour is important to understand generational relations and the position of childhood vis-à-vis adulthood and old age. Wintersberger (2001; 2005) and Phádraig (2007) use the term "generational division of labour", and in the modern society this points to the sequence of education, paid work and pension. If one finds that the term "labour" is unsuitable due to its connection to "work for wages", one could refer to a "generational division in main activity". The point is to characterize childhood as the time of education, adulthood as the time of paid work, and old age as the time of pensions.

In search for substantive definitions of the three structural groups, childhood, adulthood and old age, I propose the following: An understanding of *childhood as a generation group* is to define "children" as all those who have not left the obligatory educational regime; an understanding of *adulthood as a generation group* is to define "adults" as all those constituting the workforce (working or non-working, e.g. students, unemployed, disabled etc.); and an understanding of *old age as a generation group* is to define "the elderly" as all those who have retired.

I will end this section with a short examination of generation compared to the traditional explanatory variables of social and material inequalities dimensions - class, gender and ethnicity. The reason to do this is to present the argument that the structural understanding of generation might be understood as a complementary perspective to class, gender and ethnicity.

To begin with, one must admit that there are a number of differences between dimensions such as class, ethnicity, gender and generation. In particular, all children will eventually become adults, whilst there is no trans-gender or ethnic mobility, and to a lesser extent class-mobility. This, however, is not in contradiction to the structural nature of the generational dimension: Even if children are becoming adults individually, childhood remains a permanent structural category (Olk and Wintersberger 2007).

But there are also similarities. One point is the assumption of a certain degree of commonness among members of the same group, and this might refer to uniqueness in terms of rights, power, law, access to welfare, and position in society at large. Another shared feature of all these dimensions is the division between a dominant group and a subordinate group. Social class refers to the division between the “ruling class” and the “working class”, which under capitalism corresponds to the divide between the bourgeoisie and the proletariat. With regard to gender, one finds the proposition that men dominate women not only as individuals, but also as a group of individuals. Ethnic origin is based on possible discrimination of ethnic minority groups. In generation studies one assumes that children constitute the subordinate group and that the dominant group is adults. The stronghold of paternalism is the family, where it is embedded in the special relationship between parents and children. At the societal level, one finds that children are not granted full citizenship.

The generation approach provides a tool for an analysis of children as a group, rather than investigating what separates one child’s welfare from that of another child. In arguing that generation or age might be used as an explanatory variable of social and material inequalities, I do not try to lessen the value of the other dimensions. All I say is that a generation perspective might provide new insight in understanding inequalities.

I am aware that the structure-oriented approach to childhood is criticised on various accounts. For one thing, it is fully acceptable to claim that children living within the same society cannot be regarded as a social group, since their lives are so different. Children belong to different families, and these families can be divided in social classes and according to ethnic origin, and one could also look into distinctions between girls and boys. I still contend that that it is worth considering children as a distinct population group. And if this perspective is chosen, it involves downsizing within-group differences and emphasizing features that are common for all members of the group.

For another thing, it might be claimed that “generation” is not the best term to be used. My presentation of other models, like life course, life stage, lifespan and cohort, showed that such terms are future-oriented. Thus, scholars within the structure oriented approach to childhood, focusing on cross-sectional analysis, find generation to be a better term. I do, however, find it more appropriate to discuss “age groups” in empirical investigations, since groups must be defined according to age.

## 2.3 Children and distributive justice

An investigation of the theorists presented in Section 2.1 makes clear that these theorists find that arguments on distributive justice apply strictly to adults. The final section asks about children's rights to and need for distributive justice.

The Greek philosophers, Plato and Aristotle, argued that children were *non-citizens*. To Aristotle, children (as well as women, foreigners, and slaves) were also a *private matter*, and each male citizen was obliged to take care of his "property" (wife, children, and slaves) (Miller 2002). To Plato, children had not developed sufficiently to be just people. But he still maintained that children played a crucial role in society, and to him children were a *public matter*. In Plato's just state the family is replaced by other arrangements and children's preparation for adulthood is a state responsibility. The reason for this choice is that taking on the responsibility of upbringing is the best way for the state to preserve its own interests.

The utilitarians John Stuart Mill and John Locke focus on the developmental aspect in their strict division between childhood and adulthood. Locke argued that children need the protection, care, and jurisdiction of parents rather than the status of citizenship (Cockburn 1999). Mill saw children and youth as pre-moral beings, liable to blindly follow bad ideas or custom. With regard to citizenship, Mill stated this:

"We are not speaking of children, or of young persons below the age, which the law may fix as that of manhood or womanhood. Those who are still in a state to require being taken care of by others must be protected against their own actions as well as against external injury" (Mill in Cockburn 1999: 70).

Also in modern theories, children are excluded from arguments on justice. To Robert Nozick it seems to be self-evident that children should be excluded, as he writes about animal rights but nothing about children's rights (Bojer 2000).

Also John Rawls seems to exclude children from the social contract. He devotes an entire chapter of his book to the question of justice between generations, but his generational approach not designed with children's rights and claims in mind. Rawls states that his theory of justice should not "encroach on what he considers private life", and his discussions are limited to "the rights and duties of normal adults as free citizens" (ibid.: 6). According to Rawls (1999), the acquisition of an effective sense of

justice depends on a three-stage progression of moral development – and this development takes considerable time (see chapter VIII: *The Sense of Justice*.)

Despite the exclusion of children in theories of distributive justice, a diversity of allocation principles are used as criteria when academics analyse child welfare. Most often, researchers do not discuss the theoretical framework of justice in their discussions of intergenerational equality or need. They seem to just take it for granted that child welfare also deserves to be measured along the lines with principles of justice. But there are some examples of researchers discussing children's claims to distributive justice:

- Hilde Bojer (1993; 2000) applies Rawls's theory of justice as fairness to the case of children.
- Olli Kangas (2000) adapts Rawls's ideas to age-related empirical comparisons of social policy systems in different countries.
- Researchers within the structural approach to childhood also discuss important elements in the discourse on children and their claims to society (see e.g. Olk, Qvortrup and Wintersberger).

Bojer (1993) has suggested that a theory of distributive justice might be applied broader than the theorist intended. Following this suggestion, I intend to present four small arguments on the inclusion of children in theories of distributive justice. The first part is inspired by Kangas (2000), and it involves a closer examination of Rawls' book to find evidence of children's right to public support. The second part discusses children's needs, and I present Bojer's argument in favour of a policy geared towards securing every child the necessary resources to develop his or her capabilities. The third part explores children's "co-citizenship" from the point of view of the Convention on the Rights of the Child (CRC). As all countries, except for the US and Somalia, are parties, the CRC is a source of normative premises for child welfare. The fourth part points to children's duties, as argued by theorists of the structural approach to childhood (Qvortrup 1987; Wintersberger 2005; Olk and Winterberger 2007).

After the presentation of these arguments on children's rights to and needs for distributive justice, I will assess which allocation principles are relevant to cross-sectional comparisons of children, adults and the elderly. This issue is addressed in the final part of this section.



### **2.3.1 Children's position in Rawls's theory**

Kangas (2000) develops Rawls's idea of decision-making behind a veil of ignorance in the dominion of income transfer systems. The purpose of his article is to present some considerations on how Rawls's ideas might be adapted to empirical comparisons of social policy systems in different countries. One of these empirical adaptations is based on Rawls's proposal that the parties to his social contract are unaware of their age. As participants do not know whether they are children, adults or elderly, Kangas suggests that rational decision-makers would choose to live in a society where differences in the material welfare between these age groups are small.

Kangas does not discuss Rawls's ideas thoroughly, as his objective is to present some ideas on how to "test" Rawls's allocation principles empirically. To me, this text was inspiring. It made me search for arguments from Rawls book that might support the idea of a comparison of the material welfare of children, adults and the elderly. For one thing, I found that Rawls refers to the case of children in arguing that the parties to the social contract would want to insure themselves against situations where their powers are less developed. Closely related to this, is the discussion of children's right to justice.

The first point is that Rawls assures justice to children (Rawls 1999: 442-46). In his discussion of who should be guaranteed justice, Rawls's answer is moral people. A moral person is capable of having a conception of his or her own good (or a rational plan of life) and capable of having a (minimum) sense of justice. Children have not realized a moral personality, but Rawls says that the minimal requirements defining a moral personality refer to "a capacity". In other words, children are to receive the full protection of the principles of justice

The second point is the principle of paternalism. The principle of paternalism is that others may act on our own behalf, and do what we would do for ourselves if we were rational (ibid: 218). The yardstick is that we must be able to argue that the individual will accept our decision on his behalf and agree that we did the best thing for him. Since children's inclusion among moral people is based on capacity, the rights of children are to be exercised on their behalf by parents and guardians (ibid.: 446). The settled preferences and interests of children are to guide paternalistic decisions.

From points 1 and 2, one finds that children should be assured justice, and that parents are to look after their interests. But "the family" may be a barrier to equal

chances between individuals. Rawls points out that if primary goods, such as rights, opportunities and income, are unequally distributed in a way that do not serve the best interests of the least advantaged, then the basic societal institutions should deal with these facts. In so, it seems that Rawls opens up for state intervention in situations where parents are not able or willing to serve their children's best interests. To take income and wealth as an example: If parents are not able to protect their children from economic hardships, children have a lawful claim on society for guaranteeing them justice.

Rawls does not argue on reducing differences in material welfare between children, adults and old people. That is Kangas' application. But Rawls goes some way with regard to children's rights, in assuring children justice and in arguing that the parties of the social contract would be concerned to insure themselves as if their powers were undeveloped. It might also be argued that the application of the difference principle to serve the needs of the least advantaged would bring about a natural tendency towards equality (Rawls 1999).

### **2.3.2 Children's needs**

I have already emphasized *need* as a central principle in theories of distributive justice. *Need* refers to basic necessities or requirements. Need is also of particular importance in arguments about children and distributive justice, as children might be forgotten when it comes to the principle of need (Qvortrup 1994).

Child development is a field of study that seeks to account for the gradual evolution of the child's cognitive, social, and other capacities, by describing, and uncovering processes of importance, for children's observed behaviour. Scholars within the academic field on child development present some irreducible needs to ensure that children's behaviour, attitudes, skills and emotions develop properly. A child needs nurturing relationships, correct nutrition, physical protection, developmentally appropriate experiences, supervision and consumption goods provided by parents, a child needs to play and interact with peers and friends, and health care and high-quality education and day-care provided by the welfare state. With regard to day-care, there is a much literature on the positive effects of high-quality day-care centres to children's later school attainment (Currie 2001; Waldevogel 2002). Obviously there are differences

between the needs of children, e.g. according to age. The list of needs could also be much longer. My main point is to show that children's needs are supposed to be met by their parents (family), the earliest and the most sustained source of social contact for the child. But some needs are supposed to be met by the welfare state.

Bojer presents interesting ideas on children's missing roles in theories of distributive justice (1993; 2000). She gives vital arguments in favour of a) to account for children's interests when formulating public policy, b) to compensate parents by way of public policies for some of their economic costs of having children, and c) a policy geared towards securing every child the necessary resources to develop his or her capabilities.

First, one cannot strictly separate the welfare of children from that of their parents. This point is addressed in Chapters 4 and 5 of this thesis. Even if the targets of social benefits are the household heads, it is important to note that formulations of family and child policies diverge on the target group; sometimes children are described as the target group, other times parents (in particular the mother), and yet other times again, it is the whole family that is said to be the unit (Bojer 1993). As children, parents (and society) might have contradicting interests in terms of how care for children should be organized, it is important to take account of children's interests when formulating public policy. This is in accordance to the United Nations Convention on the Rights of the Child (1989).

Second, taking care of children is one of the fundamental tasks in any society that wishes to survive, and most societies also have laws obliging parents to care for their children. Even though parents find it emotionally valuable to have children; their children also represent a budget restraint in terms of both a time- and financial costs (Folbre 1994; Bojer 2000; Jensen 2003). It is an economic advantage for the family that both parents work, but then parents have less time for caretaking. Thus, with the arrival of the child, parents must either spend less time on paid work, pay for childcare, reduce time spent in leisure, or a combination of the three (Bojer 2002). Time spent caring for children at home can be argued to be unpaid work.<sup>20</sup> As such, parents should be compensated by public policies for some of their costs of having children.

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<sup>20</sup> Caring for children is similar to being at work in that both activities entail duties that cannot be put off, and that have to be carried out regardless of personal preferences at the moment. Both activities are sometimes enjoyable and sometimes not (Bojer 2002).

The third important point is Bojer's argument for a policy geared towards securing every child the necessary resources to develop his or her capabilities. In an examination of theories of justice, Bojer (1993) finds that desert-based principles, entitlement principles and utilitarianism are not compatible for a discussion of children's needs. But Rawls theory of justice as fairness is well suited.

Rawls introduces the term primary social goods. Such primary goods (e.g. income and wealth) secures that "beings entitled to justice" have equal opportunities. Life prospects are of relevance to Rawls, and it is well known that childhood experiences might restrict opportunities as adults. Bojer argues in favour of life-cycle distribution, and she finds that some resources should be secured for all children, since they are important to opportunities as adults (1993; 2000). She uses the distinction between basic capabilities (hearing and seeing), internal (free speech) and combined (internal capabilities combined with suitable external conditions), and argues that combined capabilities are suitable for a discussion of children's needs. Combined capabilities depend on both the endowments of the individual and the way society is organized. The important point is to secure every child the necessary resources to develop his or her capabilities, and children's present and future capabilities are suitable targets of public policies.

The beginning of this section introduced needs to children's socialization. Some of these needs (love, security and material comfort) were to be provided by the family (parents) and some needs (education and health care) by the welfare state. These needs correspond to necessary resources to develop capabilities. In this thesis, needs related to material welfare are of most interest, particularly income and wealth. To Rawls, income and wealth are primary goods. Income and wealth are important to child development (e.g. need of material comfort), but some parents are unable to provide well enough for their children. This might affect children's present and future capabilities. Furthermore, children are "innocent" with regard to their position in the distribution of income and wealth. They only adopt the position of the household head(s). In so, there is no principle of justice that argues for economic and social inequalities between children.

With regard to needs, it seems that it is in the child's best interest that there is a balance of the economic responsibility of children between parents and public. As such, one may argue that children have a claim on public resources, and that children are both

a private and public matter. From the point of view of life-cycle distribution, it is particularly important that public authorities have a right and duty to intervene in those instances when parents themselves are unable to secure their child with the necessary resources to develop his/her capabilities. In a system securing the necessary resources for present and future capabilities, one would expect lesser inequalities between children than between adults, and also that the residual inequalities do not damage the future prospects of the least advantaged children. In the other position, this is not to say that there would be equality between children. Equality would mean cutting the bond between parents and children, and as far as I know, Plato is the only one suggesting that.

### **2.3.3 Children's co-citizenship**

The term “co-citizen” (Kjørholt 2004) tells that children's citizenship differs from adult citizenship, but also that children and adults share some rights (and responsibilities) essential to citizenship. The Convention on the Rights of the Child (CRC) from 1989 gives children “the role of legal subjects” and it expresses universally accepted rights (Olk and Wintersberger 2007). The CRC includes rights and responsibilities of parents, the rights of children, and the responsibilities of states vis-à-vis parents and children.

Citizenship describes an individual and his or her relationship to the state. Citizenship is not a static concept. In Ancient Greece a citizen was perceived as a freeman who could actively participate in the public and political life of a community, in the 17<sup>th</sup> century Hobbes and Locke defined the citizen as a male property owner, and in a modern sense, the word citizen refers to “all persons born in the country and those naturalized persons born out of the same, who have not lost their right as such” (The Free Dictionary 2005). Whilst the historic definitions of citizen exclude children (and women for that sake), the extended definition includes men, women, and children alike.

The contemporary understanding of citizenship is influenced by Marshall's idea about the interaction between the civil, the political, and the social elements (1950). The civil element is composed of the rights necessary for individual freedom, such as freedom of speech, thought and faith, the right to own property, and the right to justice. The political element includes the right to participate in the exercise of political power, including the right to vote and to stand as a candidate. Social rights cover areas as the right to education, access to housing and health services, and income security. The

social element of citizenship is necessary to the exercise of civil and political rights by those who are socially marginal and disadvantaged in terms of power and resources.

Marshall excludes children from his definition of citizenship, but his division of three elements is applicable to the idea of children's co-citizenship. While adult citizens enjoy all civil, political and social rights, children as a group only have the benefit of some. The issue at stake, then, is whether or not the partial citizenship of children includes the right to be considered when decisions about distributive justice are made.

On the issue of the civil and political element it is certainly true that adults have a bundle of rights that children do not have.<sup>21</sup> The best and most important examples are probably the civil rights to decide on personal and economic matters, and the range of political rights, such as the right to vote or stand as candidate in an election. The CRC expresses a range of rights that all children should have, including civil, political and social rights. I am most interested in those rights that refer to Marshall's social element. Here are some examples (United Nations 1989):

Article 3: The best interests of the child shall be a primary consideration in all actions concerning children, whether undertaken by public or private social welfare institutions, courts of law, administrative authorities or legislative bodies,

Article 18: Parents and Governments share the responsibility of taking care of children, and Governments should help parents by providing services to support them.

Article 19: Governments should ensure that children are properly cared for, and protect them from violence, abuse and neglect by their parents or other caregivers.

Article 24: Children have the right to good quality health care.

Article 26: Governments should provide extra money for children of families in need.

Article 27: Children have the right to a standard of living that is good enough to meet their physical and mental needs, and that the government should help families who cannot afford to provide this.

Article 28: Children have the right to an education (and free primary education).

It is a paradox that children have a separate convention. As the Universal Declaration of Human Rights (DHR) from 1948 applies to all of humanity, it should cover children along with adults. On the other hand, the CRC may also be seen as a necessary supplement to the DHR, because children traditionally have had less chances of

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<sup>21</sup> It must be noted that there is not a single state of being a child, and this also includes rights. Many rights are determined by age. In Norway, children at the age of 13 can take up part-time work, at 15 they can be convicted of crimes, at 16 they can consent to have sexual intercourse, and at 18 they have the right to vote. The right to vote is central to the issue of public allocation of resources, since it illustrates that adult citizens, unlike children, have some say over the distribution of resources: Once voted into power, governments are expected to deliver the goods, and if voters think those in government are not doing their job sufficiently well, they have the right to protest by voting against the Government in the next election.

asserting distributive justice through the political and legal systems. As is seen from the list of articles, the CRC rights express that governments are responsible for supporting parents with the cost of children through benefits in cash and kind. It is also the best interest of the child (and not the parents or the family) that should be the primary consideration: The child has the right to proper health care and education, as well as proper care, and a level of comfort that meets physical and mental needs.

A review of literature on children and citizenship shows that this matter is quite complex. Some, like the theorists of justice, ignore children, on the basis that children lack important civil and political rights. Others simply assert that children are citizens (Lister 2005), or present arguments on partial citizenship. The CRC is ratified by all countries, except two, and it represents children rights. It also presents the view that children should be dealt with seriously in matters of public allocation of resource, as it regards that securing children's upbringing, education, and social and material welfare, is both a state and parental responsibility. It might be noted that this responsibility is widely acknowledged by states, as expressed through various child benefit packages intended to assist parents with the costs of raising children.

#### **2.3.4 Children's contributions**

The former discussions on children and distributive have pointed out children's needs and rights. One should also comment upon responsibilities or contributions when discussing distributive justice. This is, however, complicated with regard to children.

It might be argue that children represent more of a public good than a private good (Coleman 1990; Folbre 1994). This refers to a perception of children as productive workers of the future, and the fact that the payoffs from children's future work are transferred to the national economy (and not their parents). Recognizing that children are collective assets and that parents disproportionately carry the costs of children, it is argued to invest in families and children (Preston 1984; Esping-Andersen et al. 2002; Esping-Andersen and Sarasa 2002). Social investments in children are supposed to be important to eliminate constraints on having children and to ensure children optimal opportunities, and the positive secondary effect will be economic prosperity that helps to maintain welfare guarantees for the elderly in the future.

The European problem is two-faced. First, Europe needs more children to bridge the coming demographic age imbalance. Esping-Andersen and Sarasa (2002) point out that the removal of economic restrictions associated with having children could give a boost to fertility rates (I return to this in Chapter 4). Second, Europe's future societies need strong, resourceful and productive adults who contribute to economic vitality. The fear of some economists and politicians is that an increased number of children with deprived life chances right from the beginning will prove unable to contribute sufficiently to the well being of the increasingly childless elderly as adults. In particular, there is a growing sense of acknowledgement that high quality education systems should be accompanied with low levels of child poverty, since child poverty seems to be a serious obstacle to adult opportunities. Thus, with regard to the quality of future workers, it is not a particularly good strategy to let large numbers of children grow up in families living in poverty (Hinrichs 2000; Esping-Andersen and Sarasa 2002).

From a child-oriented perspective, the investment strategy is problematic as it makes the potential claims of children to public benefits dependent upon the criterion of future contributions (and returns). One could, for instance, ask if children contribute also when they are children. Education is an individual "right" for qualification (United Nations 1989), but in addition to be a right it might also be seen as an "individual necessity". Following Hinrichs (2000) and Esping-Andersen and Sarasa (2002), it is also a definite point that prosperity society of the future depend on well-educated workers. As such, children perform a societal task with their schoolwork and completing their education, even if it is phrased as a right and not a responsibility. The structural approach to childhood argues that children's main activities, although they differ in time and space, are essential and indispensable to the society they live in. In that context, education might be understood as the first point in the "generational division of labour" – followed by paid work and pension (Wintersberger 2001; 2005).

With regard to children and distributive justice, I find the discussions of children's needs and rights most important. This final section serves as a brief reflection on the contribution of children vis-à-vis society, both with regard to future prospects and here and now.



### **2.3.5 Relevant allocation principles**

Sections 2.3.1 to 2.3.4 have provided some reflections on children and distributive justice. Following these points, it seems that parents and the state share responsibility with regard to children. In Rawls's text children are to be guaranteed justice, and the state should intervene when parents are unable or unwilling to serve children's best interests. Bojer focuses on the life-cycle perspective, and one of her arguments is that neglecting distributive justice for children may jeopardize their opportunities for rational choices as adults. The CRC presents children's rights, and this legal document states that children's upbringing, education, and social and material welfare, are both a parental and state responsibility. Finally, I reflected on children's contributions to society both with regard to future prospects and here and now.

This final section evaluates which principles are relevant for a discussion of distributive justice that includes children. This discussion focuses on social policy and income distribution. Principles worth considering are the difference principle (need), equality and equal opportunity. I shall begin with some short remarks on merit, desert, utility and entitlements.

Merit is advocated by the Greek philosophers Plato and Aristotle and refers to demonstrated ability or achievement. Desert-based justice is "backward-looking", and directs attention to qualities in an individual's past actions. In the case of children, neither principles of merit nor desert are of particular relevance. It seems to be a very difficult task to compare the performances of children, adults and old people. In the case of children there is an obvious time-gap between investments and payoffs, and financial rewards for children's main activity (schoolwork) are less relevant.

Utilitarian theorists find that the just distribution is the one that maximizes societal happiness/utility, and they do not recommend any distribution or economic structure. In Nozick's entitlement theory, burdens are assigned as they are accepted, and benefits as they are voluntarily given, created through paid work (2000). As Bojer (1993) points out, neither utilitarianism nor entitlement theories are of interest to children and distributive justice.

The difference principle, equality and equal opportunity are patterned notions, and discussed in Rawls's theory of justice as fairness. Equality is a basic principle of Rawls's theory. Equality is a much-debated notion, whilst the criterion "low level of

inequality” is more acceptable. Kangas (2000) proposes that since the participants in the original position are unaware of their age, they are to choose to live in a society with relatively small material differences between childhood, adulthood and old age. I agree with this point. I find that an inspection of the levels of inequality is of importance when discussing the material welfare of children, adults, and the elderly.

Rawls wants to create a principle of distributive justice ensuring that everyone’s basic and essential needs are met. This leads him to propose the difference principle, stating that departures from equality may be justified if they contribute towards improving the position of the least well off. According to Rawls, children are entitled to social primary goods including wealth and income (even though the use of income is to be exercised on their behalf by parents and guardians). I find the difference principle to be well suited for an empirical consideration of the material welfare of children, adults and the elderly. In exploring the shares of “least advantaged” or poor children, adults and people, I continue on a longer stream of former research (Preston 1984; Sgritta 1995; Kangas 2000; Jensen et al. 2004; Chen and Corak 2005).

Equal opportunity is closely linked to needs and equality. Rawls proposes that one’s place of birth, social status, and family influences are matters of luck not to unduly influence the amount of benefits received in life. In the case of children, it seems that equal opportunities fair prospects or a decent start in life. A very strict understanding of equal opportunity would be to rephrase it to “equal outcomes at birth”. But equal outcomes at birth are of course an illusion as long there are inequalities between parents. Bojer (2000) argues that what matters is securing children’s present and future capabilities.

Whilst low levels of inequality and the difference principle are well suited for comparisons between children, adults, and old people, the principle of equal opportunity deals with inequalities between children. Thus, the principle of equal opportunity should be applied to discussions about *intra-generational* differences, in the sense that children are seen as a group. However, I find it necessary to include this criterion in my discussions, since I put special emphasis on child welfare.

### 3. Method

Chapter 2 identified a synchronic generation approach and relevant allocation principles to studies of children's material welfare. The theoretical inquiry is the basis for the 2<sup>nd</sup> part of the thesis. Part II - *Empirical investigations* – explores age-related public transfers (Chapter 4) and distributions of disposable income (Chapter 5).

The intention of Chapter 3 is to present methods for analysing distributive justice between age groups or generations. Before making empirical assessments of distributions it is necessary to respond to these questions:

- A fair share to whom?
- A fair share of what?
- A fair share according to what basis?

Section 3.1 is about the question: *A fair share to whom?* This refers to the subjects of the distribution. In this thesis, the population is divided in three groups; children, adults and elderly people. In order to perform empirical investigations, these groups are split according to age brackets.

Section 3.2 is about the question: *A fair share of what?* This refers to the variety of goods that could be the subject to distribution. The first type of goods is social benefits in cash and kind. I present various approaches to assessments of public transfers, and choose to explore old-age benefits and family and child benefits.

Section 3.3 presents the other goods. This is *disposable income*. It is argued that disposable income is the best indicator of the material welfare of individuals and households (Eurostat 1998; Canberra Group 2001). I look into the income concept, and comment on some of the challenges associated with measuring income.

Section 3.4 is about the question: *A fair share according to what basis?* This refers to various allocation principles. This section presents indicators of equality (Gini, S80/20-ratio and median income), the difference principle (relative poverty), and equal opportunity (a focus on identifying groups of children living in relative poverty).

Section 3.5 presents the univariate, bivariate and multivariate techniques used to describe data and explain findings. In particular I present regression analysis, and this section includes a presentation of explanatory variables used in Chapters 4 and 5.

In Section 3.6 I account for the variety of primary and secondary sources used in the thesis. In Section 3.7 I summarize the most important concerns with respect to empirical analysis of distributive justice between age groups or generations.

### 3.1 Age groups

Aries (1962) stated that childhood as an idea did not exist when children lived in the sociability of the local society. At those times children contributed (to community) and enjoyed benefits similar to adults. Part of the process of industrialization was a shift in the “intergenerational wealth flow” (Caldwell 1982), and this shift marginalized children and elderly people and turned these groups into “financial burdens”. The modern “generational division of labour” is portrayed by the sequence of education, paid work and pension (Wintersberger 2001), and it is regular to distinguish between people of employable age and children and the elderly who are seen as “economically useless” (Folbre 1994). Another understanding is presented in Chapter 2. This understanding is that children’s unpaid school activities are a qualification for their later work activities as adults, and children seen as future producers may be considered a public good (ibid.; Coleman 1990; Bojer 2000; Levison 2000; Esping-Andersen and Sarasa 2002; Jensen 2003).

The term generation is difficult and it has many loose meanings (Mannheim 1952; Ryder 1965; Abrams 1970; Thomson 1996; Eyerman and Turner 1998). Generation is used to describe contemporaries (all people alive at the same time), broad groups of coevals (young and old), birth cohorts (all people born at about the same time), specific “generation-units”, or to family structures “parent and child”. Chapter 2 presented a range of different approaches to the study of generational relations. A diachronic approach follows one or more age groups or cohorts over time as they pass through various age stages, but childhood experiences are first and foremost interesting when employed to understand adult outcomes. A synchronic generation approach

compares contemporary age groups or generations. This perspective is central to *social studies of childhood* and its aim of comparing children's life conditions with other groups such as adults and the elderly, it is employed in analyses of income data divided by age, and it is applied in many studies of age-related public spending.

This study is a synchronic analysis. Its focus is on the macro-level, and as such it deals with questions concerning the whole society. The structural approach to studies of childhood advocates that economic, social, political and cultural parameters are largely determining children's welfare, as well as the welfare of adults and elderly people. In accordance with the structure-oriented approach to childhood, I suggest that "the generational division of labour" is particularly important. The generational division of labour refers to the sequence of education, paid work and pension, and this sequence might be employed to recognize childhood, adulthood and old age as generation groups. Chapter 2 defined "children" as all those who have not left the obligatory educational regime (future workers), adults were defined as those constituting the workforce (working or non-working, e.g. students, unemployed, disabled etc.), and the elderly were defined as those who have retired (former workers).

Empirical studies of "generations" necessarily involve some randomness in identifications of "generation groups".<sup>22</sup> In my case, I find that the best way to identify children, adults and the old is to set age brackets. Furthermore, it seems to me that the term *age group* is suited for empirical synchronic structural studies.

18 or 19 years of age marks the end of obligatory education in most Western countries. 18 years of age is also in compliance with the age of minority (CRC 1989). The choice of age bracket must also correspond with available statistics. At the time of writing the empirical part of this thesis, the closest age group in the Eurostat database was 0 to 15 years of age.<sup>23</sup>

The category of old people is defined as those who have retired. Empirically this could correspond to effective retirement ages, but effective retirement ages vary considerably in the countries that are examined. The effective retirement age of men is

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<sup>22</sup> The positivist approach to generation studies acknowledged the problem of identifying generations. Some scholars attempted to try and find a "general law to express the rhythm of historical development, based on the biological law of the limited life-span of man and the overlap of new and old generations" (Mannheim 1952: 278). Using statistical methods they tried to calculate the "precise" generation-period. As pointed out before, a typical result was about 30 years.

<sup>23</sup> At the time of delivery of this thesis, Eurostat has begun to divide income statistics for the age group 0 to 17 years of age. This change came too late to be dealt with in this thesis.

highest in Ireland with 70 years and the lowest retirement age of women is 57 years in Belgium (OECD 2005b). Official retirement ages vary less. In the 16 countries examined, 65 years of age is the most common official point of retirement for both men and women (OECD 2005d). 65 years or older is also an available statistical category in the Eurostat database.

The category of adults is defined as those of employable age. Based on the available statistics, the onset of adulthood is 16 and the end point is 64. This choice means that some of those included in the empirical age group of adults, theoretically are defined as children and elderly.

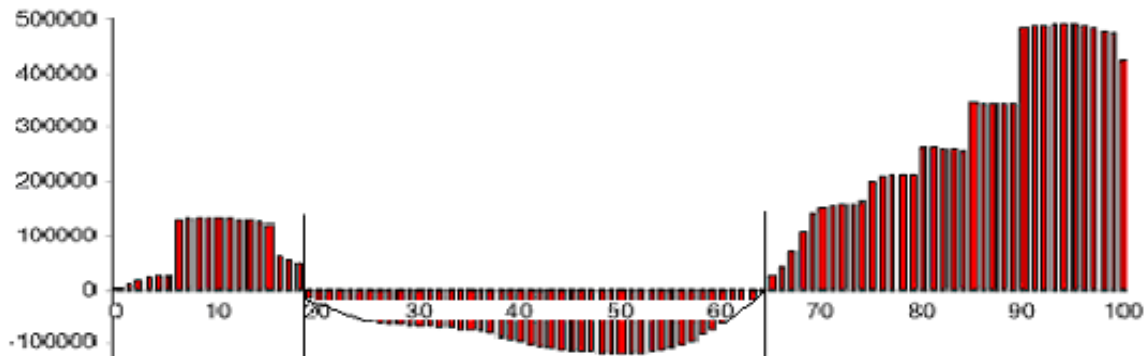
### 3.2 Public spending

The market and the state are the most important establishments considering the economic distribution. Theorists of justice diverge on the role of the state with regard to its impact on reducing economic inequalities. Bentham, Mill, Nozick and desert theorists are minimal state adherents. Rawls and egalitarian thinkers are proponents of the welfare state. Most empirical studies show broad public acceptance of the majority of the existing welfare programmes (Boeri et al. 2001; Kuhnle 2001b; Fourage 2003; Bosco 2004). Empirical analyses of welfare state redistribution are common. There is also growing empirical literature on age-related public spending. Some of these studies employ the synchronic approach and other studies employ the diachronic approach. I have chosen the synchronic approach.

This section presents various ways to analyse how redistribution policies affect children and their families, adults and elderly persons. My choice of indicator is social benefits. Before I turn to the strengths and weaknesses of this indicator, I am to present three other approaches to the study of redistribution across age groups.

The first approach is to separate the population by age and then calculate *net transfers* from taxes and expenditures (total transfers minus taxes and duties). This is the story of transfers from one age group (adults) to dependent groups (children and the elderly). It shows that over the life cycle, an individual will be supported (child), must carry the burden (adult), and be supported (old age). According to the Ministry of

Finance, approximately 50 per cent of all incomes and 60 per cent of all expenses in Norway are more or less easily assigned to an age bracket (Pension Commission Norway 2004). The result for Norway is illustrated in Figure 2.



**Figure 2:** Net transfers according to age (2003)  
Source: Pension Commission Norway 2004

Figure 2 shows that those aged 0-19 and those aged 64-100 are net receivers of transfers (they pay less in taxes than they receive in benefits), whilst those in the age group 20-63 are net taxpayers (they pay more taxes than what they receive in benefits). It also tells about the relative size of net transfers. In general, the elderly receive most (and in particular those more than 80 and 90 years of age), children aged 6-15 receive more than the younger and elder children (expenses to primary and secondary school), and those aged 40-60 pay most (and they also earn most).

This approach to redistribution between age groups is important. It enables calculations of total net transfers to different age groups, and further calculations considering the size of age groups, e.g. mean or median net transfer per member of each age group. Longitudinal data have many applications. They could be used to compare changes in net transfer patterns to different age groups over time. This is analogous to Preston (1984) and his study of expenditures: How much did children and the elderly receive in the 1960s, 1970s and the 1980s? One could also follow a group of born within a set period of time (birth cohort) and examine their net transfers over time. This is analogous to Thomson (1996): How is the birth cohort/generation born in the late 1920s, 1930s and early 1940s favoured? It is also possible to compare different generations/birth cohorts and examine their net transfers over time. Also analogous to

Thomson (1996): How is the generation born from the 1970s doing compared to the generation born in the late 1920s, 1930s and early 1940s?

The second approach is to deconstruct public spending to different age groups. This approach does not consider how expenditures are paid for (taxes and duties), and is quite similar to those data Preston (1984) presents for the US. On behalf of *Cost A19*, Jøran Toresen (2006) divided public spending in Norway, in 1980 and 2002, according to which age groups the expenses were meant for and the actual consumption of the different services. In order to divide public spending, Toresen asks what age group the expenses are meant to support, and what age group makes use of the services and transfers. Some of the main results from 2002 are illustrated in Table 1 below.

**Table 1:** Share of population and public spending by age groups (2002)

	0-15	16-66	67+	All
Total expenses (Per cent)	20	46	34	100
Services (Per cent)	31	39	30	100
Transfers (Per cent)	8	54	39	100
Expenses per inhabitant (Shares)	95	70	253	100
Share of the population	21	65	14	100

Source: Toresen 2006 (M = Million, B = Billion).

The share of children (0-15) in the population was 21 per cent and their share of public spending was 20 per cent. The outlay on children mostly took the shape of services: Children accounted for 31 per cent of total services and only 8 per cent of cash transfers. The share of adults (16-66) in the population was 65 per cent, and their share of age-divided expenditures was 46 per cent. They accounted for 39 per cent of total services and 54 per cent of total cash transfers. The share of old people (67 years or older) in the population was 14 per cent, and they accounted for 34 per cent of total expenditures. The division was 30 per cent of services and 39 per cent of cash transfers.

The third approach is to separate the population by age and calculate “net transfers” by use of the income concept. In order to examine the roles of the market and the welfare state, the Canberra Group (2001) recommends comparisons of “gross income” and “disposable income”. The difference between disposable income and gross income shows the effect of taxes, social security contributions, and voluntary payments. Statistics Norway (2003) has calculated the composition of mean *individual incomes*



pre- and post tax, of people in different age groups. These figures are derived from splitting the household income to individual income by use of the EU-scale.<sup>24</sup>

**Table 2:** Composition of income post-tax divided by age groups (2000)

	0-16	17-49	50-66	67+
Income earned and capital income	87	90	83	24
+ Transfers	13	10	17	76
= Total Income	100	100	100	100
- Taxes and negative transfers	25	24	27	19
= Income post-tax	75	74	73	81

Source: Statistics Norway 2003.

Table 2 shows that for those younger than 67 years of age, incomes from the market (income earned and capital income) are the most important components of the *Total income*: Transfers account for 13 per cent of children's income, 10 per cent of younger adults' income, and 17 per cent of older adults' income. At the other end of the scale, the share of transfers among old people is 76 per cent of total income, while income earned and capital income only account for 24 per cent.

*Income post-tax* is defined as total income minus taxes and negative transfers. I find that after taxes and negative transfers, 81 per cent of the total income is still at the elderly's disposal, while the corresponding figure for the younger age groups is 73 to 75 per cent. In other words, by calculating transfers and taxes from the household income pre- and post tax, and then separating between age groups, I find that old people are "net receivers" of transfers, whilst the younger age groups are "net taxpayers".

Even if there are many difficulties concerned with deconstructions of public spending to different age groups (see Thoresen 2006), as well as calculations of net transfers from taxes and expenditures (see by Pension Commission 2004) or from the income indicator (see Statistics Norway 2003), I believe such analyses to evaluate redistribution between age groups or generations are important. But these techniques will not be dealt with. The reason for this choice is lack of sufficient comparative data.

<sup>24</sup> Disposable income is calculated as the sum of income from activity, income from property, and received income transfers, minus compulsory payable transfers and voluntary transfers. Gross income is the total of all sources of income, after deducting business expenses and other professional outlays, and omitting any capital gains. Children's income (0-16 years of age) does not refer to money from paid work and it does not refer to the money children receive for their own consumption (pocket money). Data on income distributions are gathered at the household level. When one compares disposable income using individuals as units of analyses, the household income is divided by use of an equivalence scale to give each person an "income". Then the mean or median income of each age group is calculated. See Section 3.3 for an examination of the income concept.

My approach is to investigate the system of social benefits. This is a common and acknowledged practice in studies of *age-related transfers* and their effects. One reason is the availability of data on social protection benefits for all 16 countries investigated. Comparable data on social benefits are available on-line both at OECD and Eurostat, and their databases are developed to serve the need for indicators of social policy. Second, both ESSPROS statistics (Eurostat) and SOCX statistics (OECDs Social Expenditure Database) are drawn up according to legitimate and acknowledged methods. They are regarded to provide concise overviews on social expenditure at programme level. The third reason is that data are published in a wide range of relative and absolute standards. This enables sensitivity analyses, for instance by use of measures such as PPP (Purchasing Power Standards) per inhabitant, constant prices, percentage of GDP and percentage of total social benefits.

In the examination of public spending in Chapter 4, the chosen indicators are *family and child benefits* and *old-age benefits* in the time period 1980 to 2002/3. These indicators include transfers in cash and kind, and I have run sensitivity analyses using different measures.

The decision to focus solely on social benefits also has its weaknesses, and this choice influences what is to be discussed. One concern is that I do not account for how or by whom public expenses are financed. Another, and more important concern, is that the available data makes an inquiry of public spending divided by age unattainable. In social policies, the household head(s) are targets of social transfers, and the relevant unit is the family. The consequence is that children cannot be separated as a distinct group.

Even though I am not able to compare public spending on children, adults and old people, the discussion of *family and child benefits* and *old-age benefits* has a purpose. The study of social benefits will inform on the position and importance of families with children and the elderly in social transfer systems, it will tell about changes over the past decades, and by multivariate analysis I will try to explain reasons for differences between welfare states.

### 3.3 The income concept

Theorists of distributive justice refer to a broad category of goods, including opportunities, services and resources, when they comment on the question of “what” is to be distributed. As seen in Section 3.2, *social benefits* are the first type of goods to be examined. As stated, I intend to study material inequalities between children and other age- or generational groups. Based on current practices, the validity of results, and availability of data, I choose income as an indicator of material welfare. The second type of goods to be examined is *disposable income* (net income after direct taxes).

The concept “welfare” is connected to terms like “quality of life” and “needs” (Halvorsen 2002). Like quality of life, welfare is about satisfaction of physiological needs, social needs and the need for self-realization. In the arena of policy, welfare is often used when some action is considered in order to enhance individual or group welfare, and primarily understood as meeting individual or group needs. This includes a minimum level of income for food and clothing, but also adequate housing, education, health care and opportunities for employment (Robertson 1993). Except from fundamental (physiological) needs, it might be claimed that needs are relative, e.g. needs are more sophisticated in a society with high material wealth.

To measure welfare, however, is quite complicated. It is possible (and quite common) to measure quality of life and satisfaction of needs, but such measures are subjective. In his search for more robust indicators, Halvorsen (2002) finds that the best approach is to look at the resources or “welfare areas” that are important for people’s ability to create a good life. Such areas/dimensions are health, labour market, leisure, social relations, housing and income (ibid.; Schiefloe 2003).

The term *material welfare* points to a state or condition of doing or being well with reference to resources or possessions, and income is the far most applied indicator of material welfare. According to the Canberra Group (2001), income distribution influence “well-being and people’s ability to acquire the goods and services they need to satisfy their needs”. This expert group argues that the concept of *disposable income* is the best indicator for describing the opportunities of households and individuals (ibid.).

The reliability of the income indicator is sought at the component level. In the recent past, economic experts have come together in an effort to harmonize the income concept (Eurostat 1998; Canberra Group 2001). The Task Force on Social Exclusion

and Poverty statistics, established in 1998, is of relevance. This group's objective was to make concrete recommendations on the production, analysis, and presentation of comparative statistics on income distribution, social exclusion, and poverty (Eurostat 1998). The group recommended *disposable income* for international comparisons of household groups and individuals, and they decided that eleven components should be identified when estimating disposable income. This is shown in Table 3.

**Table 3:** The components of disposable income

+ Income from Activity	+ Property income	+ Transfer Income received	- Compulsory Payment Transfers:	- Voluntary Transfer Payments:
1. Compensation 2. Income from self-employment 3. Operating surplus of owner occupied dwellings 4. Income from activity not elsewhere covered	5. Income from property	6. Social security benefits and Social welfare assistance 7. Other money income	8. Taxes on Income and wealth 9. Social security contributions 10. Other disbursements	11. Inter-household transfers received

Source: Eurostat 1998

As can be observed, disposable income is calculated as the sum of income from activity, income from property, and received income transfers, minus compulsory payable transfers and voluntary transfers. The Task Force Group has also provided practical recommendations for measurement at the most specific level of income components. Such practical recommendations are used by Eurostat in their Survey on Income and Living Conditions (EU-SILC) and its antecedent the European Community Household Panel (EHCP). These studies are the main sources of the data used in this thesis.

Even if recommendations of income measurements are followed<sup>25</sup> and one has good coverage of the population, there are still shortcomings with the income indicator. The most important issue is that data may be inaccurate as there are important components excluded from disposable income.

The first example is exclusion of the informal economy. A common definition of the informal economy is: "All currently unregistered economic activities which contribute to the officially calculated (or observed) Gross National Product" (Schneider

<sup>25</sup> Examples of challenging categories are: Country-specific differences in the treatment of income from self employment; disbursements; irregular payments and lump sum payments, such as inheritance; and privately funded and occupational pensions (Eurostat 1998).

2002: 1). As such, the informal economy includes all economic activities that would generally be taxable if they were reported to the state authorities, both legal and illegal activities. Gathering statistics on the informal economy is very problematic, as such income is not registered and individuals engaged in these activities seldom wish to be identified. But the informal economy is estimated to matter a great deal (Schiefloe 2003). According to Schneider (2002), the average size of the informal economy, in 1999/2000 in 15 of the countries I examine, was 18 per cent of the Gross National Product, ranging from 29 per cent in Greece and down to 10 per cent in Austria.

The second example is exclusions of components like savings and assets. These components are of particular importance to studies of age groups, as old people more often possess wealth and apartments compared to younger age groups. The inclusion of imputed rent – the operating surplus from the owner occupied dwelling – changes the percentage of poor people in different age groups. In particular, old age poverty fall (Eurostat 1998). I might add a similar example using data from Norway (Statistics Norway 2003): The inclusion of interest expenses and housing benefits increases the relative mean income of old people by 5 percentage points and reduces children's mean income by 4 points.

The third example is exclusions of benefits in kind. Services in cash are a substantial subcomponent of the disposable income, but it is also well-known that the relative size of benefits in kind varies between countries. In many countries the share of poor people changes somewhat when income in kind is included (Eurostat 1998). The relative importance of benefits in kind also differs between household types.

The fourth example is the value of unpaid work taking place in the home, such as looking after children (Galloway 2002; Kirkeberg et al. 2003). The fifth example is that some people choose to have more free time instead of paid work, and this can be seen as an extended form of income (Kirkeberg et al. 2003).

Commenting on excluded categories of disposable income is important since it points to the limits of the empirical results explored in Part II (Chapters 4 and 5). Another relevant issue is the calculation of the "income of different age groups". Of obvious reasons, one cannot compare incomes of children, adults and the elderly directly. But one can gather incomes in the households with whom they reside, and these "household" data can be applied to calculate "individual income".

Data on income distributions are gathered at the household level, and income might be used to compare different types of households. Other times scholars want to compare disposable income using individuals or age groups as their units of analysis. Equivalence scales have been invented to solve the problem of comparing individuals living in households with different patterns in terms of size and composition. Such scales specify how a household's needs increase as a function of its size and composition; they divide the total household income to give each person an income per consumption unit.

There is an extensive literature on the subject of equivalence scales (Phipps 1993; Atkinson et al. 1995; Aaberge and Melby 1998; Bradbury and Jantti 1999; Canberra Group 2001). Equivalence scales typically assume some degree of economies of scale. One point is that the needs of a household with  $N$  members are not just  $N$  times the needs of one person living alone, because economies of scale arise from the pooling of goods. Another point is that characteristics of household members matter; a child adds less to a household's needs than would an additional adult. In addition to these general points, other features sometimes included are location (urban/rural, region, city), type of accommodation (owner occupied or rented), and type of employment.

Several techniques are used to estimate scales (Buhmann et al. 1998), but pragmatic scales constitute the most widely applied category. In Table 4 three known and frequent used pragmatic equivalence scales are compared: The OECD equivalence scale, the EU-scale, and the Square root scale.<sup>26</sup> The table gives the dividend and the relative difference in per cent. Based on the availability of data, the EU-scale is applied in this thesis. The EU-scale is therefore chosen as the starting point.

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<sup>26</sup> The OECD scale is also labelled "Oxford scale", "OECD82 scale", or "Old OECD scale" (OECD 2006). The EU-scale is also labelled "Eurostat scale" or "OECD-modified scale" (ibid.).

**Table 4:** Comparison of the EU-scale, OECD scale, and Square root scale

Household type	EU-scale*		OECD scale**		Square root scale***	
	Dividend	Start	Dividend	Change EU	Dividend	Change EU
1 adult	1	100 %	1	100 %	1	100 %
2 adults	1.5	100 %	1.7	113 %	1.41	94 %
1 adult, 1 child	1.3	100 %	1.5	115 %	1.41	109 %
1 adult, 2 children	1.6	100 %	2	125 %	1.73	108 %
2 adults, 1 child	1.8	100 %	2.2	122 %	1.73	96 %
2 adults, 2 children	2.1	100 %	2.7	129 %	2	95 %
2 adults, 3 children	2.4	100 %	3.2	133 %	2.24	93 %

\* The EU-scale assigns a value of 1 to the household head, 0.5 to any other household member aged 14 and over, and of 0.3 to each child under 14. This accords with the formula:  $\text{Dividend} = 1 + 0.5(A-1) + 0.3C$ , where “A” is the number of adults, and “C” is the number of children.

\*\* The OECD scale assigns a value of 1 to the first household member, 0.7 to each additional adult, and 0.5 to each child less than 16 years of age. This accords with the formula:  $\text{Dividend} = 1 + 0.7(A-1) + 0.5C$ , where “A” is the number of adults, and “C” is the number of children.

\*\*\* The square root scale divides household income by the square root of the household size (Lund and Aaberge 1999). This accords with the formula:  $\text{Dividend} = \sqrt{A + C}$ , where “A” is the number of adults, and “C” is the number of children.

For all types of households, except for households with one adult, there are differences in weights between the scales. The important thing is the impacts of these differences in weights with regard to the distribution of income divided by household types and divided by age. This can be illustrated by reference to poverty rates.

The Square root scale is sometimes more sensitive to new household members than the EU-scale, and sometimes less sensitive: Square root weights are higher for single parent households, and lower for couples (with and without children). Compared to the EU-scale, the Square root scale increases the likelihood of single parent households being classified as poor, whilst it decreases the likelihood of poverty in households with 2 adults (with and without children).

Compared to the EU-scale, the parameters of the OECD scale (economies of scale and the child-adult ratio) are more sensitive to new household members. In so, the differences in weights increase with the number of children in the household. Compared to the EU-scale, the OECD scale increases the likelihood of a family with children being classified as poor, since their income needs would be judged as higher. The other part is that the OECD scale decreases the likelihood of small households (1 adult in particular) being classified as poor.

Some years ago there was a shift from the use of the OECD scale to the EU-scale. The OECD scale was criticized for being too generous in relation to the

weighting of extra members in a household, and therefore Eurostat decided to modify the old OECD scale by lowering the weighting of extra members, and especially of children (Bradshaw 2002). This shift did not change total poverty rates that much, but it had considerable impact on poverty rates divided by age.

The choice of equivalence scales is complicated by three aspects. First, the equivalence scales disregard internal inequalities within households, by assuming that all household members share the same level of affluence. Second, sophisticated scales are more difficult to implement than pragmatic scales. This leads to assume that small children are just as costly as teenagers, that the relative needs of different household types are the same for those on low incomes as for those on high incomes, and that old people have the same needs in terms of income as younger people. One should therefore reflect upon the fact that different age groups have different consumption patterns and social needs. Third, it is hard to prove that one scale is better than another and hence there is no demonstrably correct set of scale values. Even if evidence from studies of equivalence scales is sufficient to rule out some sets of scale values as implausible, there remains a wide range of values which cannot be regarded as beyond the bounds of plausibility (Canberra Group 2000).

Recent OECD publications comparing income inequality and poverty across countries use the Square root scale (OECD 2006), as does Luxembourg Income Study data. My main source of information on the disposable income of different age groups is Eurostat, and this bureau chooses to focus exclusively on the EU-scale. Consequently, based on the availability of data, the scale applied in this thesis is the EU-scale.

### 3.4 Applications of allocation principles

In this section I investigate the question: *A fair share according to what basis?* There are various allocation principles, but not all of them are relevant to a study of children's material welfare. In Chapter 2 I found that equality, the difference principle and equal opportunity were worth exploring.



The chosen indicators of equality, the difference principle and equal opportunity have their short-comings, but they are all common in the academic literature and in comparative statistics at the national level. I have chosen Eurostat as the main source of data on income. First, the ECHP (European Community Household Panel) and EU-SILC (Statistics on Income and Living Conditions) are recommended as appropriate sources for statistics on social exclusion and poverty in Europe. Their statistics are based on the income concept formerly examined. Second, it has been important to use one main source of data, since other bureaus might provide somewhat differing figures. Still, in some tables I had to supplement figures from other sources. This is discussed when appropriate in Chapter 5, and also considered in the conclusions drawn.

In the following I discuss the choice and the strengths and weaknesses of each indicator. I begin with low levels of inequality, then the difference principle, and finally equal opportunity.

### **3.4.1 Low levels of inequality**

Economic inequality is defined as ‘the fundamental disparity that permits one individual certain material choices, while denying another individual those very same choices’ (Ray in McKay 2002: 1). Equality is the opposite of inequality. In its strictest form, the principle of equality says that every person should have the same bundle of resources. Arguments for “complete” equality are seldom heard, but more often it is argued to remove gross social and economic inequalities. A low level of inequality is a core scheme in socialism, social democratic thinking, feminism, and environmentalism, as well as an ideal for many welfare states (Kuhnle 2001b; Halvorsen 2002; Schiefloe 2003). In the recent decades, both the European Union and OECD have emphasized the importance of reducing income inequalities (European Commission 2004; OECD 2004b), and most Europeans seem to agree to the desirability of reducing economic inequality (Fourage 2003; Bosco 2004).

Based on theoretical, public, political and ideological support, I have decided to modify the principle of equality to “low levels of inequality”. I will study cross-country variations of inequality across the whole population and between three age groups.

In my discussion of national populations I have chosen two indicators. The first measure is *the quintile share ratio*, which looks at the relative position of the bottom

income quintile group in comparison to the top group. This ratio compares disposable incomes received by the top quintile (the 20 per cent of the population with highest income) to that received by the bottom quintile (the 20 per cent with lowest income). The second and more important indicator is the *Gini Coefficient*. Gini coefficients are based on rankings of individuals according to their disposable income, and they tell to what degree a given distribution is characterized by equality or inequality. In the case that all people receive the same income, the Gini coefficient is 0 per cent, whereas if all incomes are in the hands of only one person, the Gini coefficient is 100 per cent.

Gini coefficients are often used to compare income distributions across different population sectors, between countries, as well as in studies of distributions of income over time. It is claimed that the Gini coefficient is more sensitive to the income of the middle classes than to that of the extremes (at either end of the scale). The quintile share ratio is only responsive to the situation in the top and bottom quintiles, and the choice to include the quintile share ratio can be seen as a test of sensitivity.<sup>27</sup>

In my discussion of differences in material welfare for children, adults, and old people, I present an indicator of median position - *relative median disposable income*. The median is a measure of central tendency and points to the middle of the distribution of income. Median income divides the income distribution range in half, one with those having incomes above the median, and the other with residents having incomes below the median. Since the mean becomes higher in skewed distributions with extreme values, I find that median income is the best indicator of the central tendency. The median disposable income of each age group is calculated as a percentage of the median disposable income of the total population. An important disadvantage with median income is that it tells nothing about the distribution of incomes within each age group. But, data on distributions of incomes within age groups in all 16 countries are not available. Another point in relation to comparisons of age groups is the impacts from choice of equivalence scale and the components of the income concept. This is discussed in Section 3.3.

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<sup>27</sup> The Gini index has its advantages and disadvantages (Förster 2000; Wikipedia 2006). In addition to be useful in different settings, the Gini coefficient satisfies important principles such as anonymity, scale interdependence, population interdependence, and the transfer principle. The disadvantages are that systems of benefits vary between countries, a straight-line distribution is a desirable outcome, and that economies with similar Gini coefficients may have different distributions.

### 3.4.2 The difference principle

The difference principle has attracted much attention. It says that social and economic inequalities are to be arranged so that they are to the greatest benefit of the least advantaged (and consistent with the just savings principle) (Rawls 1999). The difference principle accepts certain, but not all inequalities. In so, it represents an outcome of a trade-off between absolute equality and efficiency.

One of the criticisms directed at the difference principle is the challenge to identify the least advantaged. In an empirical analysis, it is impossible to avoid some randomness in discovering the least favoured group, and according to Rawls there are two possibilities (1999: 84). One solution in identifying the least advantaged is to choose a particular social position (unskilled worker), and then count all those with more or less the same, or less, income and wealth of those in this position. His second and preferred solution is to concentrate on relative income without referring to social positions. Rawls proposes that all people with less than X per cent of the median income constitute the least advantaged segment.

Even if Rawls does not use the term poverty, his proposal on how to identify the least advantaged is taken from discussions of poverty in affluent societies. Relative poverty is the most common indicator of well being in modern societies (Preston 1984). For this reason, my pointer of the difference principle is relative poverty.

Some poverty measures are absolute and others are relative. Poverty defined in absolute terms refers to a state in which individual lacks the resources necessary to cover basic needs (Lødemel and Halvorsen 2002).<sup>28</sup> In the 1960s, Brian Abel-Smith and Peter Townsend argued that absolute measures were arbitrary, and they contended to understand poverty in relative terms. Townsend defines poverty in this manner:

“Individuals, families and groups in the population can be said to be in poverty when they lack the resources to obtain the types of diet, participate in the activities and have the living conditions and amenities which are customary, or at least widely encouraged or approved, in the societies to which they belong. Their resources are so ... (small) ... that they are, in effect, excluded from ordinary living patterns, customs and activities” (Townsend 1979: 31).

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<sup>28</sup> The classic studies of poverty, for instance those conducted by the British researchers Charles Booth and Seebohm Rowntree, used absolute definitions (Marshall 1997). Booth introduced the poverty line: a level below which families were unable to meet the necessities for subsistence. Rowntree tried to determine the basic diets necessary for subsistence and calculated the income needed to provide these diets, with an allowance for clothing and housing (Marshall 1997).

According to Townsend, poverty should be studied in a historical and socio-cultural context relating to the general standard of living in the society. In this way poverty is bound to both time and space, and the researcher should limit himself or herself to comparing an equal historical period and the same type of countries.

It is important to be aware of the existence of supplementary measures of relative poverty. The EU member states have agreed on 18 indicators to conceptualize poverty and social exclusion (European Commission 2003), and relative poverty is also measured by the subjective responses of individuals asked how they perceive their material welfare in relation to a given norm. The most common and acknowledged indicator, however, is to consider someone poor when they have less than X per cent of the median disposable income.

One of the perils of measuring poverty is over- or underestimating the number of poor people. Statistical bureaus use a variety of cut-off lines, a variety of time spans, and various measures of poverty gaps. It is difficult to assess any certain cut-off point between poor and non-poor, and I have decided to run sensitivity tests when I measure poverty at the national level and between age groups.

The first indicator, *At-risk-of poverty*, sets the level of poverty below 60 per cent of the median income in one year. In many European countries, particularly at the level of the European Union, there is an evolution towards this being an accepted definition of “low income” (European Commission 2003; Corak 2005).

It could be argued that the situation of those further down the poverty line matter more than the situation of those just below the line. The second indicator, *Poverty*, sets the level at 50 per cent of the median income in one year. This indicator has been the main threshold of the EU (Corak 2005), and also OECD and Unicef use this threshold.

It might also be argued that the magnitude of the problems and wounds of poverty depend on how long poverty lasts. When longer time spans are studied, income distributions show more equal tendencies and poverty rates are reduced. To account for time, I present the third indicator - *Persistently at risk of poverty*. This indicator sets the cut-off point at 50 per cent of the median income in the current and in at least two of the preceding three years.

It is also a question of what is worse; high poverty rates and low poverty gaps, or low poverty rates and large gaps (Bradshaw 2002). The final indicator - *At-risk-of*

*poverty gap* - gives an indication of how poor those living in poverty are. It is defined as the difference between the median income of the poor and the 60 per cent threshold.

Even if I include four indicators of relative poverty, there are still some problems that the sensitivity tests cannot rule out. One point is timeliness, and this refers to the fact that the data for use cannot monitor recent developments (Bradshaw 2002). The “newest” poverty data in this thesis are 5 years old, and the “oldest” are 8 years old. Another point is that income is an essential, but still indirect, indicator of relative poverty (Corak 2005). The third point is that poverty rates, in particular for different age groups, differ according to the choice of equivalence scales (see Section 3.3). A fourth point is that poverty rates are relative, and that the material welfare of the least advantaged is very different from one country to another. If I were to set the poverty line at 60 per cent of median income in the whole EU-15 region, the poverty rate would be almost 50 per cent in Portugal and only 2 per cent in Luxembourg (Eurostat 2006). Hesselberg (1998) takes it one step further: He fears that relative poverty may direct attention away from more serious issues witnessed in developing countries. A final point is that the challenges of income poverty are affected by people’s access to “social safety nets”. The family, relatives and friends are one type of safety net. In a representative Norwegian study, 28 per cent of adults said that they would get help from family and friends if they had trouble paying regular expenses (Halvorsen, 2002).

### **3.4.3 Equal opportunity**

Equal opportunity refers to the removal of impediments or obstacles that stands in the way of an individual realizing her potential (Barry 2000). Sen, Dworkin, and Rawls discuss equal opportunities. Rawls (1999) introduces the concept primary goods, e.g. income and wealth, and such primary goods are to secure equal opportunities. Bojer (1993; 2000) extends Rawls theory with respect to children. She points out that the well being of children is important when they are children, and also important since the basis for opportunities as adults is laid in childhood. In the case of children, justice “requires a distributional policy that assures every single child a minimum access to primary goods such as nutrition, health care, education, and a caring environment”

(2000: 37-8), and that “social arrangements, including the distribution of material goods, should create favourable conditions for childhood” (ibid.: 36).

According to the principle of equal opportunity, all children should be provided with equal chances. This is a next to impossible ideal since it would require securing the same level of material welfare for all children and their parents. Due to this, I have decided to focus on those children who do not have access to the resources enjoyed by most children. In my discussion about equal opportunity, I am to investigate what characterizes children living in income poverty.

It should not be a controversial idea that children’s experiences while growing up are important for their lives, and the consequences of child poverty to adult outcomes has been the subject of many studies. It is, however, not necessary to justify discussions of child poverty to adult experiences. Child poverty affects a wide range of aspects on children’s lives, such as housing, health, education, family and peer relationships (Esping-Andersen and Sarasa 2002).

The benefit of this analysis is to find out what causes economic differences between children. Some of the main groups at risk of poverty are children living in single parent households, in large households, in teenage families, in ethnic minority households, and in households with adults who have little formal education (Hoelscher 2004; Ytrehus 2004; Chen and Corak 2005; Bradbury et. al. 2001). The other aspect is that this study divides the child population analytically into subgroups. Thus, the principle of equal opportunity deals with *intra-generational* issues and not intergenerational issues.

### 3.5 Methods of analysis

Three forms of analysis are carried out to answer my research questions. Univariate analysis is used to describe spending on social benefits in the period 1980 to 2002, as well cross-country variations with regard to inequality and poverty rates. Bivariate analysis is used for the study of variations on median income and poverty in different age groups, as well as differences between groups of children with regard to child poverty. In addition to these simple descriptive analyses, I perform seven multivariate

analyses. The latter are intended to explain cross-country variations in spending on family and child benefits and old-age benefits, fertility rates, and the median position (in the income distribution) and poverty rates of children and the elderly. The multivariate technique used is Ordinary Least Squares (OLS) regression analysis. Since I have a very small ( $N=16$  countries), I compare results with Robust regression as a test of sensitivity.

The following section presents regression analysis (3.5.1). The second part presents the three essential explanatory variables used in “all” regression models (Section 3.5.2). In some of the regression models, additional explanatory variables are used. These variables are presented when found suitable in Chapters 4 and 5.

### **3.5.1. Regression analysis**

Regression analysis is an attempt to understand how a set of independent variables (explanatory variables) affect a particular dependent variable. This method of analysis estimates the strength of a modelled relationship between the dependent variable ( $Y$ ) and the independent variables ( $X$ ), and it enables tests for the statistical significance of estimated parameters and measures the goodness of fit of the model. In a multivariate model, the effect of each variable is controlled for by other variables, and this also reduces the errors (Hamilton 1992; Ringdal 2001).

The advantages of OLS regression to other methods follow from a set of theoretical assumptions that OLS is based upon. These assumptions are: “All” relevant variables are included and irrelevant variables are excluded; the model is linear in parameters; normally distributed errors; homoscedasticity (residuals have constant variance); absence of multicollinearity (independent variables are not too collinear); and absence of influential units. Hamilton (1992) points out that if the assumptions do not hold, the theoretical advantages of OLS are eroded. Whether or not the assumptions to the linear model are realized is a matter of degree. In actual research, as Hamilton (*ibid.*: 111) points out, “they are seldom, if ever, literally true”. In the appendices each model is tested according to assumptions of linearity, distribution of errors, homoscedasticity, multicollinearity and influence.

One important issue with all regression models presented, is the fact that I only include 16 cases. With 16 cases one could, in theory, estimate coefficients on as many

as 15 predictors (Hamilton 1992). Such models would then be just as complex as the original data and fit those data perfectly ( $R^2 = 1$ ). It is, on the other hand, advised to include a smaller number of explanatory variables because of the small N (ibid.; Ringdal 2001). This has imperative consequences for the conclusions to be drawn, since it is “certain” that I have omitted relevant variables. Such variables could (in fact they would) change results considerably.

The restriction to include a small number of explanatory variables is one fundamental problem to regression designs with few cases. To solve this I have spent much time selecting explanatory variables and all variables are based on former theoretical and empirical studies. Quantitative macro-analyses at the country level can, however, only explain parts of the story. My statistical analyses do not shed light on the social processes creating the nexus of cause and effect.

On a general note, Ringdal (2001) comments on either the use of non-parametric techniques or the use of modified parametric techniques when the sample size is less than 30. Such techniques are an important source of knowledge in addition to the “simple” OLS regression, since outliers can have much influence on OLS models with small N. Ringdal and Hamilton (1992) advice employing Robust regression to critique OLS models. In Robust regression outliers get lower weights and this lessens their influence. In the appendices I present results from Robust regression. When results from Robust regression and OLS are similar, this enhances the confidence in OLS results. In cases where results from Robust regression and OLS are different, this lessens the confidence in OLS results.

I have a problem with influential units in all models. Influence results from a particular combination of values on all variables in the regression, and not necessarily from unusual values on one or two of these variables. In order to cope with this problem, I compare results both with and without influential cases. In the appendices I present results without the “most” influential case(s). This approach is advised by Hamilton (ibid.), and he comments that this is an honest approach that enables readers to draw their own conclusions.



### 3.5.2 Explanatory dimensions

The countries up for examination are similar in many respects. They are “neighbours”, all are members of the European Union (except Norway), they are wealthy, and they share many internal and external challenges. But there are also differences between the countries. Perhaps the most striking example is variation in size. Germany has more than 80 million inhabitants, and France, the United Kingdom and Italy are just below 60 million inhabitants. At the other end of the scale, Denmark, Finland, Ireland and Norway have less than 6 million inhabitants, as well as the mini-state Luxembourg with a populace of 450 000.

In Chapters 4 and 5 I intend to explain cross-country variations in spending on family and child benefits, old-age benefits, as well as variations in the median position and poverty rates of children and the elderly. In order to explain such variations, I emphasize three possible explanatory dimensions. These dimensions are the age structure, economic performance and welfare regimes.<sup>29</sup>

**Table 5:** Age structure (2003), GDP per capita (2004), and regime types

	Age structure			Economic performance (GDP per capita)	Welfare regimes (Modified version)
	0-15	16-64	65+		
Denmark	19	66	15	28600	Social Democratic
Finland	18	67	15	25900	Social Democratic
Netherlands	19	67	14	29500	Social Democratic
Norway	20	65	15	40400	Social Democratic
Sweden	18	65	17	26900	Social Democratic
Ireland	21	68	11	32600	Liberal
UK	19	65	16	27600	Liberal
Austria	17	67	16	28900	Conservative
Belgium	17	66	17	27700	Conservative
France	19	65	16	25400	Conservative
Germany	15	67	18	25800	Conservative
Luxembourg	19	67	14	58900	Conservative
Greece	15	68	17	19700	Southern European
Italy	14	67	19	23600	Southern European
Portugal	16	67	17	16800	Southern European
Spain	15	68	17	23000	Southern European

Sources: Esping-Andersen 1990; Ferrera 1996; Eurostat 2006; 2007

<sup>29</sup> In one model I supplement the three main explanatory dimensions with one variable. In the model on fertility rates I use a different set of variables. These variables will be presented in Chapters 4 and 5.

### **Age structure**

The first explanatory variable is the age structure. The obvious is that the age structure matters regarding demands on public resources in terms of age-related expenditures. Many scholars also discuss elderly people's increasing political power in connection to population ageing (Preston 1984; Thomson 1996; Campbell and Lynch 2002.)

Over the past few decades, the median age has increased in all countries up for examination. It "now" ranges from 33 years in Ireland at the lower end, up to 41 years in Germany and Italy (United Nations 1998). This development is reflected by the shares of people in different age groups: Only in Ireland and Norway do children under 16 years of age account for more than 20 per cent of the population, whereas the shares in Italy, Spain, Greece and Germany are a mere 14 to 15 per cent. The proportion of old people varies from 19 per cent in Italy at the top end, down to a low 11 per cent in Ireland, while in most countries the shares vary between 15 and 17 per cent. The Anglophone and Nordic countries, with the exception of Sweden, have smaller shares of old people and higher shares of children compared to the EU-15 average. At the other end of the scale, all southern European countries have lower shares of children and higher shares of old people than the EU-15 average. Over the past decades, the shares of old people have increased most in the southern European countries.

My indicators of the age structure are the relative shares of children and people in old age. The share of children is calculated as those 15 years or younger, whilst the share of old people is calculated as those 65 years or older.

### **Economic performance**

The second explanatory dimension is economic performance. Economic performance is a common indicator in comparisons of welfare states and countries (Lynch 2004). The chosen indicator of economic performance is *GDP per capita*. Even if GDP per capita is criticized for various reasons, it is still a cornerstone indicator of the economic performance of countries (Schreyer and Koechlin 2002).

GDP per capita shows GDP on a purchasing power parity (PPP) basis divided by population. PPP is an artificial currency which reflects differences in national price levels that are not taken into account by exchange rates, and allows meaningful volume comparisons of economic indicators across countries (Magnien 2002). It can be noted

that the gap between high-income and low-income countries is narrower when PPPs are used instead of exchange rates.

The countries examined are among the top 48 countries in the world in terms of GDP per capita. Nonetheless, their gross domestic product per capita varies by a factor of 3 from the top ranking country, Luxembourg (59000 PPP), down to Portugal (17000 PPP). Norway is ranked second, with a GDP per capita of 40000 PPP, followed by Denmark, Austria, Ireland, Belgium, the Netherlands, the United Kingdom, France, Germany, Finland, Sweden, Italy, and Spain, countries with their GDP per capita ranging from 23000 PPP to 30000 PPP. Greece and Portugal constitute the bottom group of countries in the sample, with less than 20000 PPP.

It might be noted that Luxembourg remains a somewhat special case in our data. Due to the fact that Luxembourg has a large share of transfrontier workers, their GDP per capita is comparatively very high. Transfrontier workers contribute to the GDP, but they are not a part of the resident population.

### **Welfare regimes**

The most important explanatory dimension is *welfare regimes*. Typologies of welfare regimes are often used to understand how unlike welfare states influence social and economic behaviour. The argument for such studies is that welfare regimes are based on unlike “traditions of welfare” and pursue different goals in their social policy. In addition to economic performance and the age structure, I investigate whether or not welfare regimes are applicable in understanding cross-country differences regarding social benefits and the material welfare of children, adults and the old.

The welfare regime model used is a modified version of standard welfare regime theories offered by Esping-Andersen (1990) and Ferrera (1996). I propose to separate between a Liberal, a Conservative, a Social Democratic and a Southern European model. The Social Democratic model pursues equality and takes direct responsibility for the care of children and the elderly. The Conservative model is known for average or high public spending, but the redistributive impact is smaller than in the Social Democratic model (Esping-Andersen 1990). In the Liberal model social policy is based on means testing and modest universal transfers. Social policy in the Southern European

model is less developed than in the other models (Esping-Andersen 2003). In the remainder of this section I comment on this taxonomy of welfare states.

The term welfare state became common during World War II, largely due to the influential Beveridge report of 1942 (Robertson 1993). There is no universally accepted definition of the welfare state (Neyer 2003). Giddens (1989: 753) presents the circular idea that welfare states are political systems providing “a wide range of welfare benefits for its citizens”, and he pinpoints “material benefits for those who are unable to support themselves adequately through paid employment”, e.g. the unemployed, the sick, the disabled and the elderly. This understanding is in accordance with traditional social policies, as they were particularly aimed at protecting citizens against risks associated with old age, illness and unemployment (Dolezalova, 1999). In contrast to Giddens, Marshall (1997) does not identify specific target groups. He claims that welfare states are responsible for welfare provisions via social security systems, and via offering services and benefits to meet people’s basic needs for housing, health, education and income. Esping-Andersen (1990) takes the meaning of welfare states a step further. On the background of the general tendency of more and more social programmes after World War II, he argues that welfare states are institutions mainly preoccupied with the production and distribution of social well being.

Welfare states differ in size and organization, but they share the role of securing some basic modicum of welfare for their citizens. Many scientists have tried to compare and classify welfare states according to different sets of criteria (Bergh 2003), and Gösta Esping-Andersen presents a widely recognized scheme. In the path-breaking book – *The Three Worlds of Welfare Capitalism* – Esping-Andersen (1990) seeks to understand differences between welfare states with regard to the state’s role in the management and organization of the economy. His starting point is Marshall’s (1950) proposal, that social citizenship constitutes the core idea of the welfare state. Esping-Andersen contends, however, that the term social citizenship needs to be fleshed out:

“If social rights are given the legal and practical status of property rights, if they are inviolable, and if they are granted on the basis of citizenship rather than performance, they will entail a de-commodification of social citizenship of the status of individuals’ vis-à-vis the market. But the concept of social citizenship also involves social stratification: one’s status as a citizen will compete with, or even replace, one’s class position. The welfare state cannot be understood just in terms of the rights it grants. We

must also take into account how state activities are interlocked with the market's and the family's role in social provision" (1990: 21).

In this citation Esping-Andersen's introduces the two central concepts in his regime-model: De-commodification occurs when a service is rendered as a matter of right, and when a person can maintain a livelihood without reliance on the market; whilst social stratification refers to alternative systems embedded in different types of welfare states. The welfare state is not only a mechanism which intervenes and corrects inequalities. Welfare states are systems of stratification since they are based on unlike models, like the poor-relief tradition, the social insurance model of conservative/corporatist reformers, and the universalistic system which promotes equality of status.

In his comparative empirical research, Esping-Andersen discovers some fundamental properties dividing modern welfare states. At the same time, he also finds that welfare state variations unite around three types of regime. The development of such clusters is explained by factors such as the nature of class mobilization, class-political coalition structures, and the historical legacy of regime institutionalization.

*Liberal welfare states* constitute the first cluster. Means-tested assistance, modest universal transfers, and state encouragement of the market characterize these regimes. As a consequence of the measures applied, this type of regime "minimizes de-commodification effects, effectively contains the realm of social rights, and erects an order of stratification that is a blend of a relative equality of poverty among state-welfare recipients, market-differentiated welfare among the majorities, and a class-political dualism between the two" (1990: 27).

*Conservative welfare states* constitute the second cluster. In this corporatist type of regime, rights are attached to class and status. Even though the level of benefits might be high, the redistributive impact is small. The Church plays a central part, and the countries in this cluster are strongly committed to the preservation of traditional familyhood. This is seen, as social insurance policy excludes non-working wives and family benefits encourage motherhood.

*Social Democratic welfare states* constitute the final cluster. The countries in this regime extended principles of universalism and de-commodification of social rights to the new middle classes, and pursued a welfare state which promoted equality of the highest standards. The model combines liberalism and socialism when it addresses the

market and the traditional family: The welfare state grants transfers directly to children; takes direct responsibility for caring for children, the elderly and the helpless; and is committed to servicing family needs in order “to allow women to choose work rather than the household” (1990: 28).

In his division of the *three worlds*, Esping-Andersen evaluates 18 countries on such issues as de-commodification in social policy, the welfare state as a system of stratification, the state and market in pension regimes, and distribution regimes in the power structure. For my purpose, the most important part is his ranking of countries on de-commodification, with scores according to the conservative, liberal, or socialist regime attributes of the countries on social stratification. This systematic evaluation assigns most of the countries in my study to one of the three groups. The Social Democratic group includes Norway, Denmark, Sweden, and the Netherlands. They have the highest scores on de-commodification and score high on socialism. The Conservative cluster includes France, Germany and Italy. They achieve an average score on de-commodification and a high score on conservatism. In the Liberal cluster, the United Kingdom attains a low score on de-commodification and an average score on Liberalism. The results for Finland are close to the Nordic countries, Austria and Belgium are close to the Conservative countries, whilst Ireland is quite close to the Liberal cluster. Luxembourg, Portugal, Spain and Greece are left out of the comparison.

Esping-Andersen’s proposition that advanced capitalist democracies cluster naturally into three distinct regimes has not been spared from criticism. Arts and Gelissen (2002) provide a critical discussion of the three worlds in the light of more recent research, asking if there are in fact more than three worlds. The three worlds’ typology is extended in a later work by Esping-Andersen (1999).<sup>30</sup> Lynch (2004) comments that the welfare regime typology does not take account of the age-orientation of welfare states since it only asks to what degree welfare states de-commodify without asking to whom. Still, the most important critique is from feminist researchers. They argue that Esping-Andersen’s classification of stratification largely ignores gender relations and “the family”, and they contend that it would be to women’s advantage to be commodified and to enter the labour market, and thereby be liberated from their male

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<sup>30</sup> In his re-examination article on the regimes, Esping-Andersen identifies three cases that call for an additional fourth “world”. These cases are The Antipodean Fourth World, The Mediterranean Fourth World, and The East Asian Fourth World (Japan possibly with Korea and Taiwan).

supporters (Misra and Moller 2004). Alternative ways in which to classify welfare states have been proposed by Millar (1996) and Sainsbury (1991). Millar presents the idea that countries can be categorized by their patterns of employment for single and married mothers. Sainsbury (1991) groups welfare models on the basis of gender roles in the “breadwinner” model and the “individual” model. Esping-Andersen (1999; 2003) has responded to feminist critiques in his later discussion on de-familiarization. One characteristic shared by Southern European countries is their sustained adherence to traditional familial welfare responsibilities. Nordic countries, on the other hand, have actively “de-familiarized” welfare responsibilities with two aims in mind; to strengthen families (by unburdening them of obligations), and to strive for greater individual independence.

A complementary suggestion to the *three worlds* comes from Ferrera (1996). The chief contribution from Ferrera is that he introduces a new set of political and sociological parameters that differentiate the Southern European countries. He argues that there exists a *Southern European welfare state* model in addition to the other three regime clusters. This model comprises Greece, Italy, Portugal and Spain. This proposal is an interesting one. Ferrera presents some distinct differences which encourage a separate categorization from the conservative regime, and he accounts for three of the countries left out by Esping-Andersen’s model.

One of the central areas for my discussion is social policy. In studies of European social policy, it is common to refer to four models. These models are the Nordic, the Anglo-Saxon, the Continental European, and the Mediterranean (Boeri and Baldi 2005). These models are characterized like this (Delsen et al. 2000). The Nordics (Norway, Denmark, Sweden, Finland, and the Netherlands) aim at full employment as well as economic growth, the primary responsibility for welfare rests on the state, solidarity is based on society, and the levels of benefits are average or high, aimed at all residents, and funded by taxes. The Anglo-Saxon cluster (Ireland and the United Kingdom) aims at economic growth, solidarity is based on the individual, the level of benefits is average or low, and many benefits are means tested and funded by taxes. The Continental European cluster (Austria, Belgium, France, Germany and Luxembourg) aims at economic growth, the primary responsibility for welfare rests with the labour market, solidarity is based on the economic sector, and the levels of benefits are average

or high. The Mediterranean group (Greece, Italy, Spain and Portugal) aims to catch up with the “older” welfare states, the primary responsibility of welfare rests with the family and the church, solidarity is based on the family, and the levels of benefits are average or low.

With reference to Esping-Andersens work, I find that the only difference between regime classification and the social policy models is the placement of Italy. In the social policy model, Italy stands together with Portugal, Spain and Greece, and these countries are left out by Esping-Andersen. Ferrera, on the other hand, agrees to distinguish between four different social Europes, and his Southern European welfare state model comprises the same countries as the Mediterranean social policy model.

I have decided to distinguish between four contemporary welfare regimes. The Liberal, the Conservative, and the Social Democratic models are taken from Esping-Andersen, and from Ferrera I include the Southern European variant. The grouping of the 16 European countries is the same as the one explained by the social policy models.

### 3.6 Data and sources

It is necessary to have a rich variety of primary and secondary sources in order to provide a good understanding of distributive justice between generations in a European context. Primary sources are metadata on income distributions and social benefits. Statistics on social protection transfers are gathered from the online databases of OECD and Eurostat. Statistics on income distributions are mainly gathered from Eurostat. Some of the national data on Norway is gathered from Statistics Norway.

Most of the international data on income are derived from Eurostat. The data cover the European Union and neighbouring countries, and the length of time series varies between indicators. Eurostat generally comprises surveys of private households and/or administrative registers, and I use data from the ECHP (European Community Household Panel) and EU-SILC (Statistics on Income and Living Conditions). Indicators based on ECHP survey data cover the period 1994-2001, whilst data under EU-SILC Regulation are available for 2002 and forward (Eurostat 2004). I have also



included some data on social protection transfers. These are drawn up according to the ESSPROS methodology (European System of integrated Social Protection Statistics).

In addition to Eurostat, the Organization of Economic Cooperation and Development has also served as a major source of data for our investigations. OECD gathers statistical information from more than 60 countries and several international organizations. I have used sections on “Demography and Population”, “Education and Training”, “Labour”, “Prices and Purchasing Power Parities”, “Public management”, and “Social and Welfare Statistics”. The Social Expenditure Database (SOCX) must be mentioned particularly. It includes comparable statistics “on social expenditure at programme level from the years 1980 to 2002 for 30 OECD countries” (OECD 2005a).

Some national data on Norway derive from Statistics Norway. These statistics are either available online or acquired for *COST A19: Children’s Welfare*. I have also explored data from the Luxembourg Income Study (LIS) database and the United Nations Human Development reports.<sup>31</sup>

The secondary literature consists first and foremost of a number of academic studies. Many studies employ data from LIS, OECD, and Eurostat. The literature also includes public documents such as national and international declarations and reports.

Finally, I would like to mention the project *COST A19: Children’s Welfare*. This project has been seeking to understand the interplay of material, social and institutional forces through emphasizing theoretical and methodological approaches to children’s welfare. Taking part in this project has given several advantages to my work:

- The opportunity to test ideas and discuss them with prominent researchers within the social studies of childhood.
- The opportunity to be part of a project whose main objective was to enhance the knowledge of children’s welfare in both private and public realms.
- The opportunity to use results from the two country reports in this thesis.<sup>32</sup>

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<sup>31</sup> LIS is widely used to “examine relative economic well-being, poverty, and inequality across a large number of nations” (Smeeding and Sullivan 1998: 2). The Human Development reports are commissioned by the United Nations Development Program (United Nations 2006).

<sup>32</sup> Most of the participating members to COST A19 have collected information on secondary data on child welfare from their own country, and in 2004 two books containing 13 country reports were published (See Jensen et al. 2004, *Children’s Welfare in Ageing Europe*, Volumes I and II). For more information on Cost A19, see <http://www.svt.ntnu.no/noseb/costa19/>.

### 3.7 Overview of empirical concerns

The intention of Chapter 3 has been to prepare for Part II; the empirical analysis of differences in the material welfare of children, adults and the elderly. During the course of this chapter I have presented a range of issues to be concerned about when taking the discussion to an empirical level. I have selected some of the main concerns to my empirical analysis, and I will end this chapter with this overview.

First, it was not an easy task to separate children, adults and old people according to age. Based on available data, children are identified as those between 0 and 15 years of age, those in old age are categorized as those 65 years or older, and adults are those between 16 and 64 years of age.

Second, the theoretical aim of placing children in the larger generational structure is unattainable when social policy is discussed. Children are not separated as a distinct group, and the family is the relevant unit. In discussions of the distribution of income (poverty and inequality), I am able to compare the position of children, adults and those in old age. By the use of equivalence scales, Eurostat has separated the distribution of *individual incomes* to people in different age groups. These age groups are 0-15, 16-64 and 65 years or older. On the one hand, the empirical analysis will show some of the benefits to the approach of comparing children, adults and elderly people. On the other hand, it is also of relevance to focus on what characterizes those children living at risk of poverty.

Third, there are a number of concerns when dealing with the income concept, and one of them is equivalence scales. Equivalence scales are a widely used and a legitimate approach, but it is difficult to prove that one pragmatic scale is more correct than another. Equivalence scales are relatively robust with regard to cross-country comparisons, but the choice of equivalence scale is likely to have vital consequences when comparing relative poverty rates (low income) and relative median position (median income) of various age groups. Since children are more concentrated in larger households than adults and the elderly, the higher assumed weight, the lower child poverty will be. In this thesis, data are weighed according to the EU-scale. Compared to the OECD scale, the EU-scale judges the income needs of families with children as lower, and this decreases their likelihood of being classified as poor. The other aspect

is that the EU-scale increases the chances of elderly people to be classified as poor, compared to the OECD scale.

Fourth, when equivalence scales are used, this leads to a position in which “agency” is irrelevant for any age group: Neither the individual child, the individual adult nor the individual pensioner can be said to be the contributor or the one disposing the “income” calculated for him/her, as long as he/she lives in a household with two or more people. As mentioned in the Introduction and in Chapter 2 it does not make sense for me to use the agency approach.

Next, the concept of disposable income has some limits due to the exclusion of key components. One example is wealth (savings and assets). The actual consumption of a household may be smaller or larger than the disposable income because of variations in wealth. Old people often have positive wealth, whilst families with children usually have debts to pay off (loans on apartments and student loans). The consequence of leaving out wealth is that the “old” are doing less well in the distribution of income, whilst the “young” are doing statistically better. The inclusion of the value or cost of owning an apartment to the definition of disposable income diminishes the percentage of old age poverty (Eurostat 1998).

In addition, indicators like the Gini coefficient (inequality across countries), median position (inequalities between age groups) and the share living in relative poverty (disposable income less than X per cent of the median disposable income) are common but they can also be questioned. The problems with such indicators have been identified in the previous discussion, like the challenge of establishing a good criterion for choosing the poverty cut-off line (X per cent).

Finally, regression analysis with few countries (16) is problematic (Hamilton 1992; Ringdal 2001). With few cases it is difficult to hold the theoretical assumptions of OLS regression; non-normal residual distributions pose a threat, a single case might have substantial impact on the parameters, and it is likely that relevant variables are omitted since the small number of cases sets restrictions on the number of explanatory variables that can be included in the analysis. In my models, transformations of variables help with regard to assumptions, OLS-results are compared to results from Robust regression and models without influential cases, and the selection of explanatory variables are based theoretical and empirical considerations.



## Part II.

# Empirical investigations



## 4. The Role of the Welfare state

The idea that the state has some economic responsibility towards its citizens goes back to the English “Poor Laws” in the 17<sup>th</sup> century. However, it took a few hundred years before broader social insurance programmes were implemented. Early examples of social insurance programmes are the American Civil War Pension programme (1862), the German Chancellor Otto von Bismarck’s old-age insurance (1889), the Danish old age pension law (1891), the Norwegian system of sickness benefits (1909), the Swedish disability and old-age benefits (1913), as well as systems of social security after World War I that were justified by the Great Depression (Dolezalova 1999; Kuhnle 2001b; DeWitt 2003). Seip (1984) uses the term “Social benefit state” (Sosialhjelpstaten) to characterize systems developed from 1870 to 1940.

Kuhnle (2001b) presents alternative explanations for the development of social programmes: The top-down model focus on the aim of preserving the social order; the bottom-up model focuses on the aim of bettering the position of the working class; the harmony-model point out that different social classes had mutual interests, and then there is the great-men-of-history model. Bismarck is already mentioned. Another important actor is Sir William Beveridge. In his report from 1942, Beveridge suggested a renewal of the British National Insurance to connect work and welfare, and he presented the idea that all citizens should be guaranteed social security. This report and the idea of a universal welfare state influenced social policy debates in many European countries, in particular in Scandinavia.

The welfare state is a European invention, and the term welfare state is generally reserved for systems developed after World War II. From 1945 and onwards, the general tendency has been increased public spending due to the establishment of new social programmes and developments of existing programmes. But social policies have always been contested. On the one hand, it is seen as societal improvement to help people in distress, but at the other hand it is a problem if beneficiaries have little to gain

by moving from welfare to work. It is also argued that high levels of social benefits are a hindrance to economic activity and production. This criticism was levelled against Bismarck's old-age insurance at the end of the 19<sup>th</sup> century. At that time social security expenses accounted for 1.4 per cent of GDP (Kuhnle 2001b). At present, the average of social security expenses in EU-15 account for 26-27 per cent of GDP (Eurostat 2007).

Many scholars find social policies to be stabilizing and productive factors, able to make economies more responsive to new opportunities of economic growth and social changes (Kuhnle 2001a; Fourage 2003). It is argued that the type and format of the Swedish and Finnish welfare states may have helped them to overcome the dramatic economic challenges of the early 1990s more rapidly than a welfare state of a less comprehensive type might have managed, and with less social damage.

Whilst the traditional social programmes were about helping people in distress, a new approach to social policy has emerged over the past decades. This approach is "the active social policy agenda". It is still important to help people in distress, but also crucial to prevent distress from happening. Important means to prevent distress from occurring is to focus on investments in families with children and active unemployment policies, and this might also give a boost to economic growth (OECD 2004b).<sup>33</sup>

My main focus in this chapter is social benefits. It is common to distinguish between old age and survivor benefits, family and child benefits, unemployment benefits, sickness and care, disability benefits, and expenditures relating to housing and social exclusion (OECD 2004c; Eurostat 2006). The first section discusses public support for redistribution, the impact of taxes and social transfers, and social policy developments in the past decades. In the prolongation of this general overview, I centre on family and child benefits and old-age benefits. Section 4.2 explores the development in benefits provided for families with children and those in old age, and presents explanations to cross-country differences. Section 4.3 looks into the link between age-related public spending and the challenge of ageing societies. In Section 4.4 results are summarized and discussed.

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<sup>33</sup> The OECD (2004b) has identified three key elements of the active social policy agenda: a) Invest in families to give children the best possible start in life; b) an active policy to get people off benefits and into work instead of perpetuating a state of dependency; and c) mobilizing individuals, employers and community groups to maximize the impact of the policies. They say: "The new approach has two goals, with two different time frames. Societies have to spend now, for those who are currently disadvantaged, but they also need to invest now, to avoid social disadvantage in the future. These twin objectives must be pursued simultaneously" (OECD 2004b: 1-2).



## 4.1 Redistribution policies

The focus in this section is redistribution. Redistribution means taking resources from those judged by society to have enough and reallocating these resources to the underprivileged. In the first part I look into public acceptance for welfare programmes established to distribute income and other resources in a fairer way. In the second part I discuss the equalizing effect of progressive taxation and social transfers. The final part is about the development in social protection benefits in the past decades.

### 4.1.1 Public support for equality, equal opportunity and need

All welfare states aim at reducing poverty and economic inequalities, and guaranteeing equal opportunities for all. Such goals are expressed at the national level, but also at the transnational level. The European Union (EU) states that improvement of living conditions and combating poverty and social exclusion are political goals with the same status as economic growth and rising productivity. The EU also calls for all Member states to plan national actions against poverty, social exclusion and unemployment (European Council 2000; European Commission 2000; 2003).

Over time, many national and comparative surveys have been carried out to assess public attitudes towards welfare institutions. The main goal of such studies is to find out whether or not welfare programmes and societal institutions have public support. Tying in with surveys on public attitudes, I am to explore if there is public support for Government redistribution relating to allocation principles like equality, equal opportunity and need. These three principles of distributive justice are the ones I decided to investigate in Chapter 2. Table 6 shows results from two European surveys conducted in 1999 and 2000.

**Table 6:** Attitudes on Government redistribution: Percentages agreeing "totally or quite" with the following statements (1999-2000).

	It is a state responsibility to guarantee equal opportunities for all	It is a state responsibility to reduce income differences between the rich and the poor	People with high income should pay a larger share of income tax than those with lower incomes	Government should spend more on social protection	Government does not do enough to support the poor and the socially excluded
Social Democratic					
Denmark	91	54	-	66	59
Finland	96	80	-	68	63
Netherlands	95	73	-	79	59
Norway	-	62	76	-	-
Sweden	94	69	76	80	80
Liberal					
Ireland	96	89	-	81	79
UK	94	71	79	79	76
Conservative					
Austria	84	72	78	66	63
Belgium	93	76	-	79	78
France	97	77	73	81	79
Germany	86	58	79	56	52
Luxembourg	90	67	-	79	62
Southern European					
Greece	98	91	-	97	90
Italy	85	80	-	90	85
Portugal	98	91	88	93	91
Spain	97	86	85	95	87

Sources: Fourage 2003; Bosco 2004

The first statement is: "It is a state responsibility to guarantee equal opportunities for all". In the 15 countries considered, 92 per cent of the respondents agree that it is the responsibility of the state to guarantee equal opportunities for all. The statement enjoys high acceptance in all countries.

Respondents are also clearly in favour of the idea that low levels of inequality are something the welfare state is responsible for producing. On average, 75 per cent of the respondents agree that it is "a state responsibility to reduce income differences between the rich and the poor". Approximately 80 per cent agrees that those with "high incomes should pay a larger share of income tax than those with lower incomes".

Respondents find that an important responsibility of the state is to support the poor and the socially excluded. There is massive support among the inhabitants for more spending on social benefits. On average, 80 per cent agree that their government should spend more on social protection. In accordance with this, I also find that an

average of almost 75 per cent do not think that their government is doing enough to support the poor and socially excluded.

Results from surveys on attitudes should be interpreted cautiously. One reason is that results refer to stated preferences, and such preferences need not be consistent over time. Another point is the possibility that results may overestimate the respondents' true preferences. A third reason is that results might be influenced by the formulation of statements or questions. Even if these concerns are accounted for, and even if there are cross-country variations, I find that the results from Table 6 show conclusive support for redistribution, more spending on social protection, and policies to improve the position of those worst off. Other studies confirm broad public acceptance of existing welfare programmes (Boeri et al. 2001; Kuhnle 2001b; Berger and Ullrich 2003).

It might be claimed that these figures are too old (8-9 years), and it might be that that the preferences of the public have changed considerably. This makes it difficult to conclude on the present situation. The best interpretation is this: In the late 1990s, results from empirical studies indicated support for redistribution consistent with the principles of equality, equal opportunity and need.

In order to equalize the distribution of income and wealth in the markets, welfare states have two tools at their disposal; taxes and transfers. In the next section I look into the redistributive impact of taxes and transfers.

#### **4.1.2 The redistributive impact of taxes and transfers**

Developments over the past 40 years, with the exception of some state reduction in the 1980s and 1990s, have favoured the supporters of large welfare states. Taxes are an important component of government revenues, and central in covering the considerable costs of running welfare states. It is common to distinguish between Consumption tax, Labour tax and Capital tax.<sup>34</sup> In discussing the equalizing effect of taxes, I am to

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<sup>34</sup> For the whole EU-15 region, total tax revenues have increased by approximately 10 per cent in the last 30-35 years (European Commission 2005). Taxes on consumption account for 35 per cent of total taxes in the EU-15 and consist of VAT and Excises (taxes on tobacco, alcohol, petrol, motor vehicles and other specific goods and services). Labour tax includes income tax (taxes on labour income imputed to the self-employed and payroll taxes) and social security contributions, and stand for about half of total taxes in the EU-15. Finally, Capital tax is corporation tax, income tax and property taxes and answer to approximately 15 per cent of total taxes in the EU-15 (Cnossen 2004).

explore the tax load and the progressivism of the system. The latter describes a situation where those with higher incomes pay more than those with lower incomes.

Compared to tax systems, social transfers are more equally distributed among the rich and poorer. Redistribution through social transfers refers to a system in which those with higher incomes receive less transfers than those with lower incomes.

Table 7 explores the tax load, and the proportion of taxes and transfers received by different deciles of the population. “Bottom” refers to the three bottom deciles in the income distribution; “Middle” refers to the four middle deciles; while “Top” refers to the three top deciles of the income distribution.

**Table 7:** Tax load as percentage of GDP (2003), and share of government transfers and taxes accruing to different deciles of the working age population (2000)

	Tax load % of GDP	Taxes			Transfers		
		Bottom	Middle	Top	Bottom	Middle	Top
Social Democratic							
Denmark	49	12	35	53	36	55	9
Finland	45	9	33	58	31	60	9
Netherlands	39	12	36	53	30	61	9
Norway	43	11	35	54	44	37	19
Sweden	51	12	35	53	30	56	15
Liberal							
Ireland	30	6	32	62	31	58	11
UK	35	6	31	63	35	59	6
Conservative							
Austria	43	-	-	-	-	-	-
Belgium	46	-	-	-	-	-	-
France	44	10	23	66	28	51	21
Germany	40	8	34	58	22	60	18
Luxembourg	41	-	-	-	-	-	-
Southern European							
Greece	36	-	-	-	-	-	-
Italy	43	8	31	61	14	51	35
Portugal	37	9	25	67	17	48	35
Spain	35	-	-	-	-	-	-

Sources: European Commission 2005; Förster and D'Ercole 2005

In all 16 countries, the mean tax load is 41 per cent of GDP. There are divergences between the countries, and the tax load varies from Sweden’s 51 per cent at the top of the scale to Ireland’s 30 per cent at the bottom. A comparison of welfare regimes shows that the highest tax loads are in the Social Democratic (45 per cent of GDP) and the Conservative regimes (42 per cent), whereas the lowest tax loads are found in the Southern European (38 per cent) and Liberal regimes (33 per cent).

Taxes are highly progressive.<sup>35</sup> On average, taxes levied on the bottom account for 9 per cent, taxes on the middle group account for 32 per cent, and taxes levied on the top group account for 59 per cent. The share of taxes levied on the bottom group varies from 6 per cent in Ireland and the United Kingdom to 12 per cent in Denmark, Sweden and the Netherlands. The share of taxes paid by the middle group varies from 23 (Germany) to 36 per cent (the Netherlands). The share of taxes levied on those with highest incomes varies from 67 per cent in Portugal at the top, down to 53 per cent in the Netherlands, Sweden and Denmark. The Liberal countries have the most progressive tax systems, and Social Democratic countries have the least progressive systems.

Social transfers also have a redistributive effect. On average, transfers to the bottom group account for 29 per cent, transfers to the middle group account for 54 per cent, and transfers to the top group account for 17 per cent. Transfers going to the 30 per cent with the lowest incomes are high in Norway at 44 per cent, and especially low in Italy at 14 per cent. Transfers to the middle group vary from 61 per cent in the Netherlands to 48 per cent in Portugal. Transfers to the top 30 per cent are high in Italy and Portugal at 35 per cent, and very low in the United Kingdom at 6 per cent. Transfer systems in the Social Democratic and Liberal countries favour the middle and bottom groups, whereas the system in Southern Europe favours the middle and top groups.

The task of categorizing different systems is quite complicated. Six of eleven countries selected for this exercise pair up.<sup>36</sup> Denmark and Sweden have a high tax load, most taxes are paid by the top two groups, and social transfers benefit the middle group. In Ireland and the United Kingdom the tax load is low, the top group of earners pays for the majority of taxes, and social transfers benefit the middle group. In Finland and the Netherlands the tax load is medium high, and social transfers benefit the middle group.

All states redistribute from the rich to the less well-off, but there are variations. Tax loads and the systems progressivity vary, and the transfer systems benefit different groups in different countries.

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<sup>35</sup> I lack data for Austria, Belgium, Greece, Luxembourg and Spain. Noord and Heady (2001) conclude that the Belgian tax system is highly progressive, that Austria and Luxembourg have progressive systems, whilst Spain has a low degree of tax progressivity. According to Verbist (2004), the systems in Belgium and Luxembourg are highly progressive, while Austria and Spain have medium tax progressivity.

<sup>36</sup> The five remaining countries are difficult to place. Norway, France, Germany and Italy have medium high tax loads, and Portugal has low taxes. The middle group pays less than ¼ of the taxes in France, and in Norway, Germany and Italy the middle group pays over 30 per cent. The middle and top groups benefit most from social transfers in Germany, Italy and Portugal, and in Norway the bottom group benefits most.

### 4.1.3 Developments in social policy

The next issue is to explore the development in “Social protection benefits”. In the first part of Table 8, the sizes of social benefits are calculated from Social protection expenditure without administration costs in the period 1980 to 2002. The second part shows the level of spending on social protection benefits in cash and kind.

**Table 8:** Social benefits in per cent of GDP (1980-2002) and division in cash/kind (2002)

	Social protection benefits					Cash	Kind
	1980	1986	1992	1998	2002	2002	2002
Social Democratic							
Denmark	29	27	31	30	29	61	39
Finland	19	24	34	27	25	65	35
Netherlands	27	27	28	23	22	67	33
Norway	18	21	27	26	24	60	40
Sweden	29	30	35	30	29	58	42
Liberal							
Ireland	17	22	20	16	14	53	47
United Kingdom	18	21	23	22	22	64	36
Conservative							
Austria	23	24	25	26	26	70	30
Belgium	24	27	28	28	27	73	27
France	21	26	28	29	29	65	35
Germany	23	24	26	27	27	70	30
Luxembourg	24	22	22	22	21	71	29
Southern European							
Greece	12	18	20	23	24	64	36
Italy	18	21	24	24	24	74	26
Portugal	11	12	16	19	21	63	37
Spain	16	18	21	20	20	70	30

Sources: OECD 2004c; Eurostat 2006.

The most common indicator of social support for cross-country comparisons is social protection expenditure as a percentage of GDP.<sup>37</sup> Part one of the table explores this indicator. The broad picture is that all 16 countries increased their spending in the 1980s and then reduced spending somewhat in the 1990s. The Southern European countries increased their spending during the whole period (15 to 22 per cent), the Conservative countries increased their spending from 1980 to 1998 (23 to 26 per cent), the Social

<sup>37</sup> There seems to be consensus among scholars that social expenditure as a share of GDP is the best indicator for countries' main characteristics in terms of social expenditure. But this measure does not give a full picture of collective social effort across countries. There are two main reasons for this (Adema and Ladaïque 2005: 6): “First, gross spending data on budgets and in national accounts do not account for the impact of tax systems on the value of social expenditures. Second, information on public budgets does not capture private social arrangements to which (parts of) the population is obliged to subscribe, or which social policy objectives encourages by means of financial support, often through the tax system.”

Democratic countries increased their spending from 1980 to 1992 (24 to 31 per cent) and then decreased their spending in the last decade (26 per cent in 2002), whilst the Liberal countries decreased their spending from 1986 to 2002 (22 to 18 per cent). A focus on the 2002 results presents three groups: Denmark, Sweden and France spent most; Ireland, the United Kingdom, Spain, Portugal, Luxembourg and the Netherlands spent least; whereas the other countries differ by 3 percentage points (middle group).

From an examination of both the development and size of total social expenditure, there are five clusters. Denmark and Sweden spent most on social benefits throughout the period. Greece and Portugal almost doubled their expenditures over the period, starting out from a position of very low expenditures in 1980. Finland, Norway, the United Kingdom and Spain spent most in 1992, followed by reductions or stabilization. Austria, France, Belgium, Germany and Italy displayed a clear increase in spending from 1980 to 1992, followed by a stable period. The Netherlands, Luxembourg and Ireland reached their top in the mid-1980s, and their social expenditures are now at a lower level than in 1980.

The last part of the table shows the division between spending on social protection benefits in cash and kind in 2002. All countries spent more in cash than in kind, but there are variations: Austria, Belgium, Germany, Luxembourg, Italy and Spain spent more than 70 per cent in cash benefits, while Ireland and Sweden spent less than 60 per cent. An analysis gives that the Conservative and Southern European countries typically spend more in cash (close to 70 per cent on average) compared to the Social Democratic and Liberal countries (close to 60 per cent on average).

Statistics on taxation and social transfers in general are important to provide an overview of the ways welfare states differ, but they say nothing about differences with regard to spending on various functions of social benefits.<sup>38</sup> The forthcoming section examines statistics on benefits for families and children and the elderly in the time period 1980 to 2003. This empirical examination will inform on the position and importance of the elderly compared to families with children in social transfers.

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<sup>38</sup> In 2002 the average share of the different social benefits in all countries examined was: 52 per cent for the old age and survivors function; 19 per cent for the sickness/care function; 9 per cent for the family/child function; 9 per cent for disability benefits; 7 per cent for unemployment benefits; and 4 per cent for expenditures on housing and social exclusion (Eurostat 2006).

## 4.2 Family and child benefits and old age benefits

This section deals with two of the research questions raised in the Introduction. In Section 4.2.1 I address the following question: *Has there been a pattern of growth in old-age benefits in combination with a decline in spending on family and child benefits?* Preston (1984), Thomson (1991; 1996) and Sgritta (1995; 1996) are some of the scholars that have suggested that the elderly have been favoured compared to younger age groups. My analysis is parallel to the work of these scholars, but the time period is different. In answering the first research question, I look into public spending on family and child benefits and old-age benefits from the 1980s and onwards. Since different indicators of social transfers can yield somewhat divergent results, I have decided to present results using two acknowledged indicators.

With regard to public spending on families with children and the old, all examined countries share some qualities. One common trait is that the amount spent on old-age benefits is higher than the amount spent on family and child benefits. Another feature is that benefits for old people are almost exclusively given in cash, whilst there is more division in cash and kind with regard to benefits for families with children. But there are also diversities. I have decided to explore cross-country differences with regard to the size of family and child benefits and old-age benefits.

Section 4.2.2 deals with this question: *Why do welfare states differ with regard to the sizes spent on old-age benefits and family and child benefits?* Whilst many scholars have described age-related public spending, fewer scholars have tried to explain cross-country variations. According to Lynch (2004), there is almost no knowledge about why countries vary in the extent of family allowances, public pensions or unemployment benefits. In answering the second research question, I perform multivariate regression analysis with family and child benefits and old-age benefits in PPP per inhabitant as my dependent variables. The main explanatory variable is a modification of the welfare regime typologies invented by Esping-Andersen (1990) and Ferrera (1996). In addition to the regime typology, I also take into account predictors such as economic performance, the population structure and family structures.



#### **4.2.1 Spending on families and the elderly over the past decades**

A variety of former studies have discussed the “age-orientation” of welfare states or age-related public spending. Hudson (in Wisensale 1997) looks at the older generation, and issue warnings about the tremendous increase in old age spending in the US. Van Parijs (1998) is also concerned with the pensioners, and he comments on the “fear” that the elderly may use their electoral power “in an excessive manner” to benefit their “short-term self-interest”. O’Neill (1994) presents the view that welfare states are the principal source of the well-being of the contemporary elderly while extending far fewer benefits to contemporary youth. I will examine the perspectives provided by the following authors; Preston (1984), Thomson (1991; 1996) and Sgritta (1995; 1996).

Preston (1984) presents a comparative analysis of public spending and the material welfare of children and the elderly in the US in the 1960s, 1970s and beginning of the 1980s. His conclusion is that conditions of well being have deteriorated for children and improved dramatically for the elderly, and that demographic change has been intimately involved in these developments. With regard to public spending, he finds that the ratio between spending on old people and children increased from 1960 to the early 1980s. Many programmes benefitting children were unrolled in the late 1970s and early 1980s, while programmes targeted to the elderly were maintained or expanded in this period. He also explores poverty. He finds that the incidence of old age poverty in the 1980s was the double of the national incidence in 1970, and by 1982 the proportion of poor elderly had fallen below the national average. The incidence of child poverty, on the other hand, had increased in the same period.

Thomson (1991; 1996) discusses political ageing or welfare ageing, i.e. the shift in public and private priorities from the interests of children and young adults towards the interests of the middle-aged and the elderly. He argues that from the 1960s to the 1990s, a reshaping of priorities has swept across most western welfare states, and he concludes that the welfare state for youth has become a welfare state for the ageing. This redesign includes social, political, economic, fiscal and legal policies. It is in particular those born in the late 1920s, 1930s and early 1940s that have been uniquely favoured through life by political ageing, since policy priorities have been revised in time with their own personal ageing. This has in turn affected material welfare, and over

the past decades real purchasing powers of young adults and children have been falling, whilst those of the middle-aged and elderly have been rising.

Sgritta (1995; 1996) also compares social transfers benefitting the old and the young. Sgritta comments that post-war period in Europe was characterized by increasing public spending on family benefits, family health services, and education, but since the late 1960s to the mid-1980s European countries follow a pattern of reduced spending on families and the young. He then connects the development of public spending to families with children with fertility rates, and finds an interesting pattern: The period 1945-1960s was characterized with an increase in programmes addressed to families with children and high fertility rates; whilst the period 1960s to the present, was characterized by a progressive decrease of births as well as by a parallel decrease of socio-political programmes addressed to families with children.

My investigation of public spending begins in the 1980s (where Preston left off), and continues to the 21<sup>st</sup> century (10 years after Sgritta and Thomson). Table 9 presents three indicators of social benefits to families with children and elderly people: Old age and family and child benefits as a share of total social benefits; as a share of GDP; and in Purchasing Power Parities (PPP) per inhabitant. The table also provides information on changes in the share of total social protection benefits transferred to those in old age and families and children in the period 1980 to 2001.

**Table 9:** Family and child benefits and old-age benefits as a; percentage of total social benefits (1980-2001), percentage of GDP (2003) and PPP per head (2003)

	Old-age benefits			Family and child benefits			In per cent of GDP		In PPP per head	
	1980	1991	2001	1980	1991	2001	OA	F/C	OA	F/C
Social Democratic										
Denmark	28	36	38	10	12	13	11	4	2931	1043
Finland	28	29	33	10	13	12	9	3	2109	728
Netherlands	26	32	36	9	5	4	9	1	2489	350
Norway	28	29	29	10	11	13	7	3	2434	1004
Sweden	27	34	38	14	12	10	12	3	3015	755
Liberal										
Ireland	26	23	19	7	11	14	3	3	834	738
UK	31	40	42	13	9	7	11	2	2739	454
Conservative										
Austria	38	37	41	14	10	10	13	3	3498	805
Belgium	25	30	34	13	9	9	10	2	2439	555
France	36	36	38	12	10	10	11	3	2550	630
Germany	43	41	41	10	8	10	12	3	2829	719
Luxembourg	29	43	27	9	11	16	6	4	2806	1889
Southern European										
Greece	44	50	48	5	8	7	12	2	2098	324
Italy	40	48	52	6	4	4	13	1	2987	237
Portugal	31	33	39	7	6	6	9	2	1488	248
Spain	30	37	42	4	2	3	8	>1	1672	123

Sources: OECD 2004c; Eurostat 2006.

OA = Old-age benefits

FC = Benefits for families and children

I begin with the indicator PPP per inhabitant, and this corresponds to the last part of the table. There are clearly differences between the countries. Luxembourg, Denmark and Austria spend liberally on both family and child benefits and old-age benefits. In contrast, Portugal, Spain, and Greece are careful spenders in terms of both functions. The United Kingdom, Belgium and France display medium spending figures for both functions, whilst the other countries are less easy to classify.<sup>39</sup> With regard to the proposed regime typology, I find that the Conservative (2820 PPP on OA and 920 PPP on FC) and the Social Democratic countries (2600 PPP and 780 PPP) are high spenders on both functions. The Liberal (1790 PPP and 600 PPP) and Southern European countries (2060 PPP and 230 PPP) spend less on both functions.

<sup>39</sup> Norway has a pattern of high spending on the family and child function and medium spending on the old age function. The situation in Germany and Sweden is the reverse. The Netherlands spend average amounts on those in old age and low amounts on the family and child function. This pattern is reversed in Finland and Ireland. Italy spends liberally on old age, but has low outlays on family and child benefits.

The next indicator is old-age benefits and family and child benefits measured as a share of GDP. This corresponds to the middle part of the table. According to this indicator, the countries spending liberally in terms of both functions are Sweden, Austria and Germany. Medium spenders in terms of both functions are the United Kingdom and Belgium. Low spenders are the Netherlands, Spain and Portugal.<sup>40</sup> On average, the Conservative and the Social Democratic countries are high spenders on both functions, whilst the Liberal countries come out low on old-age benefits and the Southern European countries come out low on family and child benefits.

This short investigation of a given year (2003) shows somewhat diverging results with regard to the two indicators. The lesson to be taught is that one should be careful when interpreting cross-country statistics, since the results to some degree relies on the choice of indicator. When I turn to the important question – *Has there been a pattern of growth in old-age benefits in combination with a decline in spending on family and child benefits?* – I have decided to explore two indicators. The first one is given in Table 9 (share of total social benefits), and the second indicator is explored in Figure 3 (constant prices in millions) (see page 104).

The first indicator is spending on family and child benefits and old-age benefits as a share of total social benefits. In all countries, the mean of family and child benefits was stable in the period (9.6 per cent of total social benefits in 1980, 8.8 per cent in 1991, and 9.3 per cent in 2001), whilst the mean of old age benefits increased (32 per cent of total social benefits in 1980, 36 per cent in 1991 and 37 per cent in 2001).

On the subject of old-age benefits, I observe that the majority (11 of 16 countries) increased their spending by 3 or more percentage points in the time-period 1980 to 2001, one country decreased its spending, whilst four countries remained at approximately the same level in 1980 and 2001.<sup>41</sup> Turning to family and child benefits, six countries increased their spending by 2 or more percentage points in the period

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<sup>40</sup> The remaining countries are less easy to classify. Norway, Finland, Ireland and Luxembourg are low spenders on old-age benefits and high spenders on family and child benefits. Denmark and France are medium spenders on the old age function and comparatively high spenders on the family and child function. Italy and Greece are high spenders on old age and careful in terms of family and child benefits.

<sup>41</sup> In Denmark, Sweden, the Netherlands, the United Kingdom, Belgium, Italy, Portugal and Spain, spending on old-age benefits increased in the whole period. In Finland and Austria the 1980s were a stable period, followed by increased spending in the 90s. Greece experienced an increase in the 80s, followed by stability. Ireland experienced a decline in old-age benefits over the whole period.

1980-2001, seven countries decreased their spending by 2 or more percentage points, and the level was approximately the same in three countries.<sup>42</sup>

Based on a comparison of the development on old age and family and child benefits, I am able to group countries into three categories.

The first cluster includes nine countries with an “ageing-pattern” from 1980 to 2001. There seems to be trade-off between spending on the old and families with children in Sweden, the Netherlands, the United Kingdom, Austria, Belgium and Italy. In these countries the share of welfare outlays spent on old-age benefits increased, while the share spent on family and child benefits decreased. In the other countries in this cluster, I find that: Portugal and Spain increased spending on old-age benefits, whilst spending on family and child benefits was stable; and in France spending on old-age benefits was stable and the share spent on family and child benefits reduced.

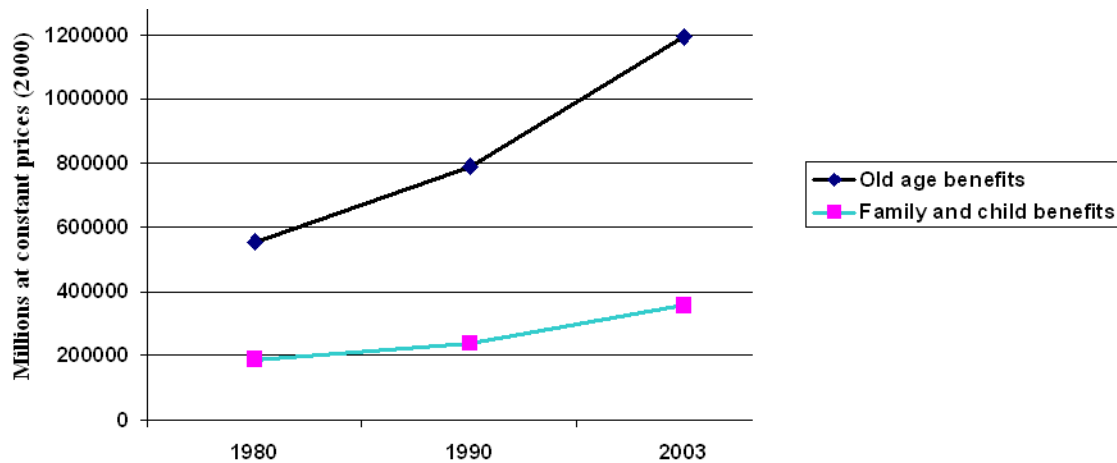
The second cluster contains three countries which have become more “youth-centred” from 1980 to 2001. In Ireland the share of welfare outlays spent on old-age benefits decreased, while the share spent on family and child benefits increased. In Norway and Luxembourg, spending on family and child benefits increased, while the share spent on old-age benefits was stable.

The third cluster contains the remaining countries. Denmark, Finland and Greece increased their spending on both functions in the period, whilst Germany retained the same level of spending on both old age and family and child benefits.

The second indicator of the development from 1980 and onwards, is constant prices using 2000 as a base year. In the figure below I have summarized spending on old-age benefits and family and child benefits for all 16 countries with constant prices in millions of Euro as the unit.

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<sup>42</sup> Ireland and Luxembourg increased their spending in the whole period. Denmark, Finland and Greece increased their spending in the 1980s followed by a steady period in the 90s. In Norway, the steady period of the 80s was followed by increases in the 90s. Portugal kept spending on family and child at the same level in the period, whereas Spain and Germany experienced a decline in the 1980s followed by an increase in the 90s. Sweden and the United Kingdom experienced declines throughout the period. In the Netherlands, Austria, Belgium, France and Italy, spending decreased in the 80s and was stable in the 90s.



**Figure 3:** The sum of spending on family and child benefits and old-age benefits in EU-15 and Norway, millions of Euro at constant prices with 2000 as base year (1980-2003)  
Source: OECD 2005a

The two lines show that there certainly has been an increase in spending on both family and child benefits and old-age benefits over the period. The increase in old-age benefits is steeper compared to that of family and child benefits, and for both functions most of the increase took place in the 1990s. The sizes of both types of benefits have almost doubled from 1980 to 2003. The ratio between spending on old-age benefits and family and child benefits is important. The ratio was slightly below 3 in 1980, well above 3 in 1990, and slightly above 3 in 2003. All in all, the general feature is that spending on old-age benefits is approximately 3 times higher than spending on family and child benefits, in the period.

I set myself to answer this research question: *Has there been a pattern of growth in old-age benefits in combination with a decline in spending on family and child benefits?* Preston (1984), Thomson (1991; 1996) and Sgritta (1995; 1996) point to increased spending on the elderly from the 1960s. This development has continued in the 1980s and 1990s, with extensive increases in old-age benefits. In the same time-period it seems that family and child benefits have not increased to the same extent.

My two indicators tell somewhat different stories. Using “share of total social benefits”, I find that the overall picture is this: Most countries increased spending on the old during the period, whilst the development on family and child benefits is mixed. This resulted in a larger gap between family and child benefits and old-age benefits from 1980 to 2001. Using “Constant prices in millions of Euro”, I find that the gap is approximately the same in 1980 and 2003.

On basis of the figures I have presented, I am neither able to conclude on a certain “Yes” nor “No” to my question. With regard to all 16 countries, there is no clear evidence that the increased outlays on old-age benefits from 1980 to 2001 have been at the expense of spending on the family/child function. There are, however, cross-country differences, and this was examined by the indicator “share of total social benefits). The examination has shown that the majority of countries (9 of 16) have followed an “ageing” pattern with regard to public spending. In six countries the relative increase in spending on the elderly was combined with less spending on family and child benefits.

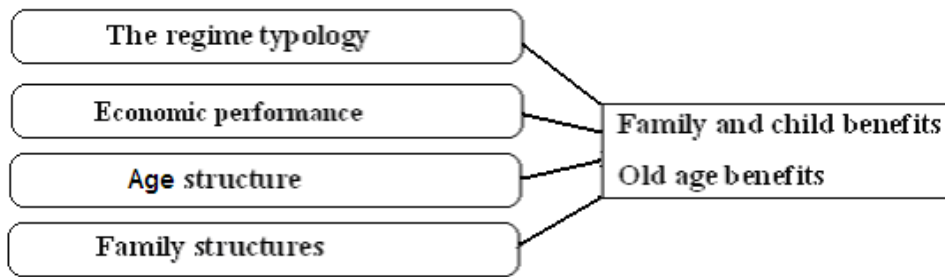
The next section turns an explanation of variations between countries with regard to public spending on children and their families and elderly people.

#### **4.2.2 Explaining variations of spending on families and the elderly**

Section 4.2.1 showed that the generosity and scope of “Benefits for families and children” and “Old-age benefits” vary significantly across countries. Even though there are a number of studies and articles on age-related public spending (Preston 1984; Thomson 1991; 1996; Sgritta 1995; 1996; Kangas 2000; Esping-Andersen and Sarasa 2002; Jensen et al. 2004), there is less knowledge on the reasons for cross-country variations (Lynch 2004). It is a paradox that few scholars have tried to explain cross-country differences with regard to old-age benefits and family and child benefits. One point is that similar types of figures as those presented in Section 4.2.1 are given annually by Eurostat and the OECD. A more important point is that age-related public spending is closely related to other significant issues like child poverty, old age poverty and ageing societies. Lynch puts it forward like this:

“...redistribution carried across age groups and generations is likely to be one of the most important determinants of how welfare states respond to the new challenges of population ageing, long-term unemployment, and rising divorce rates”(ibid.: 1).

I agree with Lynch - it is very important to study cross-country variations in family allowances and public pensions (and unemployment benefits for that matter). In this section I address this research question: *Why do welfare states differ with regard to the sizes spent on old-age benefits and family and child benefits?* My choice of method of analysis is multivariate linear regression. Figure 4 presents the explanatory model of variations in benefits for families with children and old-age benefits.



**Figure 4:** Explanations to family and child and old age benefits

### **Dependent variables**

The phenomena I try to explain (dependent variables) are “Benefits for families and children” and “Old-age benefits”. Statistical bureaus provide different measures of such types of social transfers; available currencies are Euro and Purchasing Power Parities (PPP), and available calculated percentages are of Gross Domestic Product, Social transfers and Social benefits. I find that PPPs are well suited for my purpose of comparing variances across countries. OECD and Eurostat calculate PPPs to obtain rates of currency conversion that eliminates the differences in price levels between countries and so permit volume comparisons. The 16 countries up for examination vary quite much with regard to population size, and for this reason it is important to present measures per inhabitant. My choices of dependent variables are family and child benefits and old-age benefits in PPP per inhabitant.

### **Welfare regimes**

The main explanatory dimension is welfare regimes. Unlike welfare regimes are based on unlike “traditions of welfare” and pursue different goals in their social policy. I expect them to act differently when it comes to public spending on child families and the old population. My indicator of welfare regimes is a modified version of typologies given by Esping-Andersen (1990) and Ferrera (1996). Esping-Andersen separates between Liberal, Conservative and Social Democratic welfare states. Ferrera (1996) presents a Southern European welfare regime. In the regression models, the regime variable is divided into three dummy variables: Social Democratic, Liberal and Conservative. The Southern European welfare regime is used as reference category.

I expect that the Social Democratic and Conservative welfare have higher spending on both family and child benefits and old-age benefits in comparison to more modest spending in the Liberal and the Southern European welfare states. The Social



Democratic welfare states are known for pursuing equality, for taking direct responsibility for caring for children and the elderly, and for trying to relieve families of obligations. The Conservative regime is known for average or high public spending, but with lesser redistributive impact compared to Social Democratic welfare states (Esping-Andersen 1990). Liberal welfare states are generally market-oriented and their social policy is based on means-testing and modest universal transfers (ibid.; Delsen et al. 2000). Social policy in the Southern European regime is less developed compared to the other regimes. According to Esping-Andersen (2003), one argument for expecting differences between the Social Democratic countries (Nordic) and the Southern European countries is that the former have “de-familiarized” welfare responsibilities to relieve families of obligations and “strive for greater individual independence”, while the latter have a sustained adherence to traditional familial welfare responsibilities.

My hypothesis – Social Democratic and Conservative regimes have higher spending on family and child benefits and old age benefits in comparison to the Liberal and the Southern European regimes – is also backed by bivariate results from Section 4.2.1 (Table 9). On family and child benefits, I found that all Southern European countries were low spenders, in the Liberal regime Ireland was a higher spender than the United Kingdom, the Social Democratic countries were high spenders (the Netherlands a low spender), and the Conservative countries were medium spenders (Luxembourg a high spender). On old-age benefits, I found that Italy stood out with very high spending compared to the other Southern European countries, Denmark and Sweden were high spenders compared to the other Social Democratic countries, Austria was a higher spender compared to the other Conservative countries; and Ireland was a low spender compared to the United Kingdom.

### **Economic performance**

Economic performance is the second explanatory dimension of differences in welfare state spending on families with children and those in old age. The level of economic performance is a common indicator to understand cross-country differences, and the chosen indicator of economic performance is GDP per capita. Chapter 3 told that GDP per capita shows GDP on a purchasing power parity (PPP) basis divided by population.

I expect that increasing GDP per capita (economic performance) is connected with increasing spending on both family and child benefits and old-age benefits. This can be argued on the basis, that it is likely to expect that states with satisfactory economic performance are better equipped to support all of their citizens, irrespective of age, compared to less wealthy countries.

My other suggestion is that economic performance matters more on the issue of family and child benefits. The argument is that countries with poorer economic performance must prioritize between spending on those in old age and family and child benefits.<sup>43</sup> I suspect that the less wealthy countries give priority to the elderly. Initial bivariate correlation tests back up this expectation; they show a very strong correlation between GDP per capita and spending on family and child benefits, whilst there is a weak correlation between GDP per capita and old-age benefits.

### **Age structure**

The third explanatory variable is the age structure. It is likely to expect that the size of different age groups matters for age-related spending. More precisely, I expect that countries with a larger share of old people will spend more on old-age benefits compared to countries with a smaller share of old people. To a lesser degree I expect that countries with a larger share of children will spend more on family and child benefits compared to countries with a smaller share of children. My indicators of the age structure are the relative shares of children and people in old age. The share of children is calculated as those 15 years or younger, whilst the share of old people is calculated as those 65 years or older.

Scholars addressing the age-orientation of welfare states have focused on the numerical and political dominance of senior citizens as an important feature in explaining why some countries spend more on the elderly than on other age groups

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<sup>43</sup> The development in Sweden and Finland in the 1990s exemplifies this. Economic difficulties were quite critical in Finland and Sweden in the early 1990s, and as a response both countries cut social protection expenditures. From 1992 to 2001 social protection expenditure, as a percentage of GDP, was reduced from 34 per cent to 25 per cent in Finland, and from 35 to 29 per cent in Sweden (see Table 8). Some age groups were more protected from these cuts than others: From 1991 to 2001, as a share of total social benefits, the family/child function was reduced from 13 to 12 per cent in Finland, and from 12 to 10 per cent in Sweden; while expenditures earmarked the elderly rose from 29 to 33 per cent in Finland, and from 34 to 38 per cent in Sweden. Interestingly, this development took place in two of the countries with high proportions of female employment; with a strong incorporation of women in politics, in political parties, parliaments and governments, and in the welfare state bureaucracy (Kuhnle 2001a).

(Preston 1984; Thomson 1996; van Parijs 1998). There are three sources of self-interested support for the elderly; the elderly themselves, the working age population (who vote on behalf of elderly people who might otherwise need family support); and the working age population who vote for themselves when they reach old age (Preston 1984). In addition, active elder lobby groups have emerged in many nations (Thomson 1996; Campbell and Lynch 2002).

The literature on welfare states and interest groups is unclear about the precise nature of that influence. But in any modern democracy there is no way of escaping the fact that public decisions are influenced by the power of special interest groups. The power of the elderly is a function of their size, their resources and their ability to mobilize for concerted action. In the countries in this study, the elderly constitute about 16 per cent of the electorate, they are politically knowledgeable, they do not see public issues in the same way as younger age groups, and existing political parties` are conscious about their interests (see Section 4.3.2 for more on this subject).

### **Family structure**

The final explanatory dimension is family structures, and this dimension is only discussed with regard to family and child benefits. There are different indicators of family structures that could have been looked upon, but according to Chambaz (2001) the share of single parent households is particularly important. Single parent households are generally regarded to be vulnerable for low household incomes, and Chambaz finds that single parent families benefit from social transfers more often than other families, and for higher amounts. It could also be mentioned that recognition of the growing economic vulnerability of single mothers played an important role in the development of public assistance programs in the early 20<sup>th</sup> century (Folbre 1994). My indicator of family structures is: Single parent households as a percentage of all households with dependent children. I expect that with higher shares of single parents, spending on family and child benefits increases.

Over the next pages I give the results from multivariate regression analyses; starting with family and child benefits and continuing with old-age benefits. After these presentations, I discuss the explanatory power of each dimension in order to answer the research question of explanations to cross-country differences.

## Family and child benefits

These x-variables were included in the original model on family and child benefits: *Social Democratic regime*, *Liberal regime*, *Conservative regime*, *GDP per capita*, *Share of children in the population* and *Share of single parents*. As pointed out in Chapter 3, the theoretical advantages of ordinary least squares regression analysis erodes if assumptions do not hold (Hamilton 1992). In order to fit the crucial assumptions of regression analysis, I have made justifications to the original model.

The first point is to seek models with no irrelevant variables, and (hopefully) not with omitting relevant variables. In the final model, I have removed the variable *Share of children in the population*. The reason for this elimination is that this particular variable made the model unnecessary complex and reduced the adjusted  $R^2$ .

The second point is that the variable *Share of single parents* broke with the assumption on linearity. The nonlinearity is caught by including an additional variable; the computed square of *Share of single parents* ( $\text{Single parents}^2$ ).

The third point is a variable transformation of the Y-variable *Benefits for families and children in PPP per inhabitant*. Transformations are a common solution to several sorts of problems encountered in regression analysis, including skewness, non-linearity, and heteroscedastisity (Hamilton 1992). In this case, a transformation to the power of 2.1 gave the best result. This transformation made a skewed distribution of errors more symmetrical.

Table 10 presents the regression analysis. Model 1 presents the most important explanatory variable, and model 2 includes the other important variables.

**Table 10:** Regression analysis of family and child benefits (2003)

	Model 1		Model 2	
	B	SE	B	SE
(Constant)	-3788406 ***	612735	-496660	1126083
GDP per capita	174 ***	20	146 ***	21
Social Democratic			2084463 **	889877
Conservative			2309147 **	890740
Liberal			1648301	977318
Single parents			-793662 **	261103
(Single parents) <sup>2</sup>			27800 **	9802
<b>Adjusted R<sup>2</sup></b>	<b>0.83</b>		<b>0.91</b>	

Reference category: Southern European regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

Explained variance,  $R^2$ , is a measure on how well defined our regression model is. It varies between 0 and 1. A value close to 1 tells us that the residuals, the observable estimate of the unobservable error, are small. The adjusted  $R^2$  incorporates the complexity in the regression model relatively to the complexity in the data, and is therefore preferred to  $R^2$  when explaining complex models (Hamilton 1992). In the final model I introduce no less than six explanatory variables, and this is quite many given the fact that I only have 16 cases.

The first point is that the adjusted  $R^2$  increases with each new added variable. This shows that the final regression model is not too complex, and also that all variables are relevant. The second point is that adjusted  $R^2$  is 0.91 in the final model. This is a very high result. The third point is that adjusted  $R^2$  is 0.83 in the first model. This tells that GDP per capita has a very strong correlation with benefits for families and children, and is without parallel the most important explanatory variable.

I will comment briefly on the constant and the standard of errors. The constant refers to the predicted value when all values on other variables are zero, and it shows where “the line of best fit” cuts the Y-axis. I find that the constant is non-significant, but this is a lesser concern. The standard of errors is an indication on how much one parameter can differ from the correct value of parameters. A small standard error indicates little sample-to-sample variation, and a larger standard error indicates the opposite. The standard error indicates the strength of the test.

The unstandardized Coefficient B shows the average increase in dependent variable with one measurement increase in X (independent variable) when other independent variables are held constant. In transformed models one has to reverse transformations in order to find the actual estimates (Hamilton 1992; Ringdal 2001).

An increase in GDP per capita result in higher spending on family and child benefits. The effect is stronger in model 1 compared to the final model. This is mainly because I introduce 5 new variables in the final model. The standard error is about the same in both models. The effect of GDP per capita on family and child benefits can be illustrated. I use the final model. Given the Social Democratic regime and 5 per cent single parents, the final model produces these estimates of family and child benefits at different levels of GDP per capita: Low GDP (20000 PPP) = 800 PPP; Medium GDP (30000 PPP) = 1150 PPP; and High GDP (40000 PPP) = 1400 PPP.

The next dimension is welfare regimes. The positive values of the Conservative, Social Democratic and Liberal regimes indicate that they spend more on family and child benefits compared to the Southern European welfare regime (reference category). Differences are quite substantial. Given a situation with 30000 GDP per capita and 5 per cent single parents, the final model produces these estimates of family and child benefits in different regimes: Conservative = 1200 PPP; Social Democratic = 1150 PPP; Liberal = 1060 PPP; and Southern European = 570 PPP.

The results for the regime typology are in accordance with my expectations. The estimate for the Liberal regime is closer to the Social Democratic and Conservative than supposed. There is, however, much sample-to-sample variation (high standard error) in the Liberal regime. This shows that Ireland (medium/high) and the United Kingdom (medium/low) differ with regard to family and child benefits.

The final and least important dimension in the model is single parenthood. I find a positive coefficient of Single parents<sup>2</sup> and a negative coefficient of Single parents. This implies that for low shares of single parents there is a negative correlation with family and child benefits, and for higher shares of single parents there is a positive correlation with family and child benefits. This is the opposite relation of that I found in bivariate tests, and the change is attributed to the control for other dimensions. Results for single parenthood should be cautiously interpreted.

A graphic test to the final model shows that when the share is about 15 per cent, the negative effect is close to over. The predicted turning point, i.e. when the share of single parent households increases spending, is about 28 per cent. Given the Social Democratic regime and 30000 GDP per capita, the final model produces these estimates of family and child benefits at different levels of single parenthood: Low (5 per cent) = 1150 PPP; Medium (10 per cent) = 650 PPP; and Highest (20 per cent) = 790 PPP.

In the social sciences it is agreed to follow a decision rule such as: reject  $H_0$  and believe  $H_1$  if  $p < 0.05$  (Hamilton 1992: 44). Any coefficient for which the obtained p-value is less than 0.05 is then said to be statistically significant. In theory it is a 5 per cent chance of being wrong; that is, about 5 per cent of the time this rule will lead us to reject  $H_0$  when in fact it is true. In a multivariate model the particular effect of each X-variable on the Y-variable is controlled for the other X-variables in the model. In the final model, I find statistical significant effects for the variables Social Democratic,

Conservative, GDP per capita, Single parents and (Single parents)<sup>2</sup>. The variable “Liberal” is non-significant due to a high standard error. In other words, the welfare regime typology, economic performance and child family structure (understood as the share of single parent households) all fare well in this test.

Tests of the premises of ordinary linear regression analysis can be found in Appendix A. It is still worth to commenting briefly on some of the tests of the final model of family and child benefits. When I consider tests of distribution of errors, homoscedasticity and multicollinearity, the final model works quite well.

With regard to influence, the regression model is tested with an exclusion of Luxembourg. Influence results from a particular combination of values on all variables in the regression, and Luxembourg has particular high spending on family and child benefits, an extreme GDP per capita, and at the same time a low share of single parent households. A regression model without Luxembourg changes the results: The adjusted  $R^2$  decreases to 0.69; the effect of the welfare regime typology increases as all three dummy variables become significant; whilst the effect of GDP per capita is less strong, but still significant. In a regression model without Luxembourg, the dummies of the welfare regime typology are the most important explanatory variables.

Robust regression can be employed to critique OLS results (Hamilton 1992). There are three reasons for computing Robust regression as a test of sensitivity: I have a small N; the unstandardized coefficients of single parents variables change quite much when I adjust for the welfare regime; and the test of influence pointed out that the deletion of Luxembourg had an important impact on the regression results. In Robust regression outliers get lower weights and this lessens their influence. In this case, results from Robust regression and OLS regression correspond (see Appendix A). The effects of the explanatory variables are either approximately the same or somewhat stronger. This is illustrated by a comparison of estimates from Robust regression and OLS regression. Given 30000 GDP per capita and 5 per cent single parents, the Robust model produces these estimates of family and child benefits in different regimes: Conservative = 1210 (OLS = 1200); Social Democratic = 1170 (OLS = 1150); Liberal = 1075 (OLS = 1160); and Southern European = 560 (OLS = 570). This test of sensitivity has enhanced confidence in the results already commented upon.

## Old-age benefits

I now turn to the model explaining benefits for those in old age. In this analysis, all X variables are presented in their original way: *Social Democratic regime*, *Liberal regime*, *Conservative regime*, *GDP per capita* and *Share of old people in the population*. The only adjustment made to the original model is a transformation of the dependent variable *Old-age benefits in PPP per inhabitant*. I find that the natural logarithm (base e), gives an acceptable result. The transformation was computed in order to meet the criteria of normally distributed errors and pull in outliers.

**Table 11:** Regression analysis of old-age benefits

	Model 1		Model 2		Model 3	
	B	SE	B	SE	B	SE
(Constant)	6.27 ***	0.69	5.18 ***	0.77	4.17 ***	0.89
Share old people	0.09 **	0.04	0.14 ***	0.04	0.18 ***	0.05
Social Democratic			0.58 ***	0.19	0.54 ***	0.17
Conservative			0.52 ***	0.17	0.40 **	0.17
Liberal			0.28	0.27	0.31	0.24
GDP per capita					0.000014 *	0.00
<b>Adjusted R<sup>2</sup></b>	<b>0.20</b>		<b>0.56</b>		<b>0.64</b>	

Reference category: Southern European regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

The adjusted  $R^2$  indicates the goodness of fit of a regression model. With each new variable, the adjusted  $R^2$  increases. In the final model (model 3) it is 0.64. I have clearly included some important explanation variables, but at the same time it could be argued that other important variables are omitted.

Following the rule that any obtained p-value less than 0.05 is statistically significant, I find that these variables are significant in the final model: Social Democratic, Conservative and Share of old people in the population. GDP per capita, on the other hand, is only statistical significant at the 0.1-level. The variable Liberal is non-significant, and this is due to a large standard error.

The unstandardized coefficients show the average increase in the dependent variable with one measurement increase in X (as other independent variables are held constant). The logarithmic transformation enables measurements of proportional effects.

The most important explanatory variable is Share of old people in the population. I suspected that spending on old-age benefits increases with larger shares of



old people and the result is in accordance to my hypothesis. In the final model, when the share of old people increases by one percentage point, this corresponds to an 18 per cent increase on family and child benefits. It must be noted that the importance of this variable “doubles” from model 1 to model.

I also find that the Social Democratic, Liberal and Conservative welfare regimes spend more compared to the Southern European regime. I calculate that the difference between the Social Democratic regime and the Southern European regime is as high as 72 per cent, the difference between the Conservative regime and the Southern European regime is 49 per cent, and the difference between the Liberal regime and the Southern European regime is 36 per cent. It must be noted that the importance of the Conservative regime, in particular, is lower with the inclusion of GDP per capita.

The final explanatory dimension is GDP per capita. An increase in GDP per capita result in higher spending on old-age benefits. More precisely, an increase of 10000 PPP is estimated to yield a 14 per cent increase on family and child benefits.

Tests of assumptions to the final model are found in Appendix B. They show that the final regression model has a non-normal error distribution, even after I transformed the dependent variable. The risk is that a single case can have an arbitrarily large impact on sample estimates, and this reduces the efficiency of the model.

This is looked upon with regard to influence, and the problematic country is the United Kingdom. The UK is a Liberal country, characterized by quite high spending on old-age benefits, a comparatively low share of old people in the population, and a GDP per capita around the median. Regression results change when I exclude the UK. The adjusted  $R^2$  increases to 0.73, the effects of GDP per capita and share of old people in the population is reduced, whilst the effects of the welfare regimes are significant.

In small samples it is of particular importance to pay attention to influential units and non-normal error distributions. These assumptions are not realized in the model, and my solution is to compute a sensitivity test by Robust regression (see Appendix B). Results from OLS regression and Robust regression are quite alike, both with regard to parameters and goodness of fit of the regression model. This enhances confidence in the results for the final model.

## Comparison of models

I set out to investigate this research question: *Why do welfare states differ with regard to the sizes spent on old-age benefits and family and child benefits?* The quick answer is as follows: The type of welfare regime matters both for spending on old-age benefits and family and child benefits; economic performance is of huge importance to family and child benefits and of less significance to old-age benefits; the share of the elderly matters much more for the size of old-age benefits compared to the importance of the share of children to family and child benefits; and my indicator of family structures - the share of single parents – is relevant to the size of family and child benefits. This quick answer summarizes the main features, and is a good starting point for an in-depth analysis of the two regression models.

The first observation is that I have explained more of the variation in the sizes of family and child benefits compared to old-age benefits. It could be argued that a more complex model on old-age benefits would be beneficial, but the adjusted  $R^2$  is also quite high in this model. Selecting variables in a regression analysis with a small N involves a trade-off; on the one hand omitting relevant variables makes regression results untrustworthy, and on the other hand models cannot be too complex. With reference to my purpose of investigating “some relevant predictors”, most importantly the welfare regime typology, the final models seems to work satisfactorily.

Another observation is that different explanatory variables are significant when examining the size of family and child benefits and the size of old-age benefits.

The first explanatory variable was the regime typology. The regime typology implies that cross-country differences should be sought with regard to the state's role in the management and organization of the economy. I suspected that different regimes would differ in their spending on family and child benefits and old-age benefits.

The multivariate regression analyses confirmed the importance of the welfare regime typology in understanding cross-country differences in family and child benefits and old-age benefits. Controlling for economic performance, the share of children, and the share of single parents, I found that the Conservative and the Social Democratic regimes spent significantly more on family and child benefits compared to the Southern European regime. Controlling for economic performance and share of the elderly

population, I found that the Conservative and the Social Democratic regimes spent significantly more on old-age benefits in comparison to the Southern European regime.

The results for the Social Democratic, Conservative and Southern regimes were expected, but I anticipated more modest spending from the Liberal countries. In spite of a market-oriented policy, it was shown that the Liberal regime spent more than the Southern European regime on family and child benefits and old-age benefits. These differences were not significant due to the extensive variation between the two countries in the Liberal regime. The relatively small differences between the Liberal regime and the Social Democratic and Conservative regimes on the size of old-age benefits could be attributed to the old age orientation of the United Kingdom. The relatively small differences with regard to family and child benefits had to do with the actuality that Ireland is more “youth-oriented” than the other country in the Liberal regime (the UK).

The second explanatory variable, of differences in spending on family and child benefits and old-age benefits, was the level of economic performance. The indicator was GDP per capita. My hypothesis was that less wealthy countries give priority to the elderly, and that wealth matters more when the issue at stake is expenditures on families with children. I found that GDP per capita, by far, was the predictor explaining most of the variation in size of family and child benefits. With reference to old-age benefits, the effect was smaller, but still worth noting. Thus, the hypothesis was strengthened.

The third explanatory variable was the age structure. I expected that countries with a larger share of old people would spend more on old-age benefits per inhabitant compared to countries with a smaller share of old people, while countries with a larger share of children would spend more on family and child benefits per inhabitant compared to countries with a smaller share of children. Controlled for other variables, I found that the share of old people was of much importance to the size of old-age benefits. The share of children did not matter at all with regard to the size of family and child benefits. Thus, one of my hypotheses was strengthened and the other was not.

It could be that the share of the elderly is a more important influence on public spending than the share of children, because large elderly populations create both a need for more welfare spending and a political constituency to fight for their share of resources (Preston 1984; Thomson 1996; van Parijs 1998). Few rational politicians would ignore the huge political potential residing among old people.

Children, on the other hand, are not a political constituency. Their self-interests are a concern for their parents, and their share of the electorate is getting smaller. While it is clear that the elderly have much contact with their children and grandchildren, it is also clear that they to a lesser degree assimilate their offspring's concerns (Preston 1984). Since the 1950s, studies have shown widespread and consistent differences between the attitudes and loyalties of people in different age groups (Abrams 1970). Such studies have also demonstrated political passivity among the young, and at the same time political activity and knowledge among the elderly (ibid.; Preston 1984; Harris 1999; Eurobarometer 2004; 2005).

In the model on family and child benefits, I also found that the shares of single parent households were of importance. This indicator was included since single parent families often benefit from social transfers and for higher amounts than other families (Chambaz 2001). It must be noted that national figures on single parenthood are up for discussion, and some have argued that they are too high and therefore unreliable. My results should be interpreted cautiously.

In the final model, the share of single parent households had a quite negative effect on spending on benefits for families and children until a share of 15 per cent. This is the opposite result compared to that I found in my initial bivariate test between the share of single parents and the size of family and child benefits. The technical explanation for this change is that I control for other variables in the final regression model (welfare regimes and GDP per capita). A review of statistics on social transfers may shed some more light on the finding. For one thing, single parent households` do not only benefit from family and child benefits but also other social policy functions (unemployment, disability, housing and social exclusion) as well as they enjoy tax credits. It might be the case that those "extra" benefits they receive, compared to other types of households, is part of other social transfers. Another point is that the share of means tested family and child benefits are low in many countries with higher shares of single parent households (Belgium, Finland, Norway, Sweden and the Netherlands; the UK is the exception), whilst means testing is quite common in the Southern European countries with lower shares of single parent households (Eurostat 2006).

### 4.3 Coping with ageing societies

In science fiction books and movies, it is quite common to present a dystopian rather than a utopian vision of the future. Researchers dealing with prospects for the future, also have a tendency to present “crisis-scenarios” rather than a dazzling future.

In spite of, or perhaps due to, the evident successes of welfare states, “the future challenges of welfare states” is one of the major fields of welfare research. Since the 1970s a variety of crisis-scenarios have been suggested. Scholars have anticipated that welfare states will be in serious trouble due to government overload, economic slowdown, globalization, cultural changes in the labour market, lacking public acceptance of government spending, political ageing and ageing societies (Preston 1984; European Centre Vienna 1993; Sgritta 1996; Thomson 1996; Castles 2001; Kuhnle 2001b; Hemerijck 2004).

In this section I focus on the scenario of ageing societies, but I will also comment on political ageing. Ageing societies involve population ageing and depopulation and can be expected due to the present age structures and trends in fertility, life expectancy and migration. As early as 1982, the United Nations adopted the International Plan of Action on Ageing (Wisensale 1997), and structural ageing is one of the most crucial tests for European welfare states in the 21<sup>st</sup> century. In the short term, the main challenge is higher demands on old age related spending (due to an increasing share of old people). In the longer term, the laws of population dynamics provide the following scenario:

“If reproduction in a given population remains below the so-called replacement level, the population in question is heading for significant ageing, followed by population decline, and ultimately by extinction” (Lutz 2000: 50).

This section will consider some links between the challenge of ageing societies and age-related public spending. I start with the causes of population ageing, and present an analysis of the potential link between family and child benefits and fertility rates. Section 4.3.2 presents the anticipated trends in the population structure and their probable effects on public spending. Section 4.3.3 presents some of the suggested policy responses to ageing societies and demonstrates their link to age-related public spending.

### 4.3.1 Family and child benefits and fertility rates

Population studies are the wider investigation of the causes and consequences of population structures and change. They have shown that future population sizes and age structures are determined by the present age structure as well as by future trends in migration (the more or less permanent movement of individuals or groups from one country to another), fertility (birth rate), and mortality (death rate). Table 12 summarizes the main trends in fertility, life expectancy, and migration in the latter half of the 20<sup>th</sup> century.

**Table 12:** Trends in fertility, life expectancy and migration in the last half of the 20<sup>th</sup> century

	Fertility				Life expectancy			Total net migration 1950-2000
	Completed FR		Total FR		1960	2003	1960-2003	
	1935	1960	1960	2004				
Social Democratic								
Denmark	-	1.88	2.57	1.78	72	77	+ 5	200.000
Finland	-	1.95	2.72	1.80	69	79	+ 10	-200.000
Netherlands	2.50	1.85	3.12	1.73	74	79	+ 5	800.000
Norway	2.42	2.09	2.91	1.81	74	80	+ 6	-
Sweden	-	2.01	2.20	1.75	73	80	+ 7	700.000
Liberal								
Ireland	3.89	2.47	3.76	1.99	70	78	+ 8	-
UK	2.42	1.92	2.72	1.74	71	79	+ 8	300.000
Conservative								
Austria	-	-	2.69	1.42	69	79	+ 10	500.000
Belgium	2.27	1.74	2.56	1.64	71	78	+ 7	500.000
France	2.58	2.04	2.73	1.90	70	79	+ 9	4.700000
Germany	2.18	1.52	2.37	1.37	70	78	+ 8	9.500000
Luxembourg	-	-	2.28	1.70	69	78	+ 9	-
Southern European								
Greece	-	-	2.28	1.29	70	78	+ 8	600.000
Italy	2.20	1.67	2.41	1.33	70	80	+ 10	-800.000
Portugal	2.83	1.84	3.10	1.42	64	77	+ 13	-1.800000
Spain	-	1.74	2.86	1.29	70	81	+ 11	100.000

Sources: United Nations 2004; Eurostat 2006; OECD 2007.

The first part of this table is about fertility. The replacement level is supposed to be 2.1 per woman. The completed fertility rate (CFR) tells about the number of children born per woman in a cohort of women by the end of their childbearing years. All countries in our study had a CFR above the replacement level in 1935, whilst only Ireland had a CFR above replacement level in 1960. In 9 countries I present comparable figures. These figures show that the mean CFR for women born in 1935 is 2.6 compared to 1.9 for women born in 1960, and for all countries the trend is downward.

The total fertility rate (TFR) is the average number of children that a woman gives birth to in her lifetime, assuming that the prevailing rates remain unchanged. The table shows that TFRs have been reduced in all in the period 1960 to 2004, and that all countries have rates below the replacement level in 2004. The figures are especially alarming in Spain, Greece, Italy, Germany, Austria and Portugal, with TFRs below 1.5.

The most sensitive issue concerning mortality is the longevity of older people. The second part of the table shows the development in life expectancy, i.e. the average length of time that people born in a given year are expected to live. Over the period 1960 to 2003, life expectancy rose in all 16 countries: The mean was 8 years added, and the variation was largest in Portugal with 13 years added and smallest in Denmark and the Netherlands with 5 years added. Explanations of longer life expectancy are typically linked to scientific modernity and economic development. Compared to previous time periods, healthcare has improved, material conditions are better, and people do less physical work.

Migration is the movement of people from one country or locality to another. The final part of the table tells about total net migration from 1950 to 2000. Total net migration varies from a surplus of 9.5 million in Germany to a deficit of 1.8 million in Portugal. Three countries have a negative net migration, and ten countries have a positive net migration in the period. Immigration now accounts for three quarters of the net growth in the population of EU-15 countries (European Commission 2004).

It is possible to look into connections between political action and fertility, life expectancy and migration. In the remainder of this section I have decided to focus on the possible link between the generosity of family policies and fertility rates.<sup>44</sup>

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<sup>44</sup> The decline in total fertility rates over the past century is primarily responsible for ageing in Europe. It is also likely to consider that political action to increase fertility rates, in order to cope with ageing societies, enjoys more public acceptance compared to increasing immigration or mortality policies. Thus, it might be argued that the only effective action is political strategies to increase fertility rates. There are those arguing that immigration is a good way to solve the problems of ageing, but my impression is that they have not studied facts too well and their mindset is somewhat imperialistic. It is true that a lot of people would like to move into Europe if the borders were opened, and employers would be happy to include more migrants in areas where skills are in short supply (Taskinen 2000). But it is easy to overestimate the possible impact of immigration (Whiteford 2005). According to OECD (2000), immigration in Europe must be doubled compared to the present situation to maintain the size of the workforce. In Italy, for instance, the number of immigrants must be tripled by 2050 to keep the population size constant. Public attitudes to such a strategy should also be accounted for. The majority in all European countries investigated in this study do not think that more immigration is a good way to solve the problems of ageing (Eurobarometer 2004; 2005). Finally, to solve Europe's problems with immigration might be considered an example of imperialistic thinking. Europe wants computer engineers

### **Investigating cross-country differences in fertility rates**

I will start by pointing out some of the aspects that might be relevant to the fertility decline in European countries in the 20<sup>th</sup> century, and then I perform a multivariate analysis to understand cross-country variations in fertility rates in 2004.

At the macro-level, there is evidence that a) women in poor countries give birth to more children than women in wealthy countries, and b) fertility rates in wealthy societies were higher before the industrialization. Such findings of differences in time and space, point towards the society that women live in having an impact on birth rates.

The Value of Children (VOC) project in the 1970s investigated perceptions of children and birth rates. Children's value might be understood as the total sum of economic, social and psychological benefits of having children (Espenshade 1977). There are also costs of having children, and the costs might be direct (food, clothes, housing) or indirect (time, freedom) (Jensen 2003). VOC explored parents' attitudes to the value of children and, and the picture was quite interesting: In the poor countries birth rates were high and children were perceived as an economic and social gain; whilst in rich countries birth rates were lower and children were perceived in terms of economic and social costs (Espenshade 1977). In rich countries children had an emotional value, but they were also seen as an obstacle to personal freedom.

To understand declining fertility rates over time, Caldwell (1982) introduced the term "wealth flow". In traditional societies with family-based production, the wealth flow is upward, from children to adults. Children were an economic and practical asset, helping their parents from an early age with manual work and a vital insurance to their parents' old age. In modern societies with the market economy, the wealth flow runs downward, from parents to children. Children's main activity is education, and they are no longer a vital insurance for old age.

The VOC project compared the value of children across poor and rich countries, while Caldwell compared pre-transitional to post-transitional societies. An important lesson from these studies seems to be that the economic structure is an important social institution when explaining fertility rates. Jensen (2003) points out that the economic structure forms the basis of which benefits parents gain by having few or many children. It seems clear that the question of who gains economically and who shoulders the costs

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from India and trained nurses from Indonesia, and the poorer countries are left with the costs of their education and the wealthier countries are reaping the benefits when they are educated (Jensen 2003).



of having children, are important in order to understand fertility rates. It seems that in the course of social development, children have become an economic cost to parents, whilst the benefits of children in the long run are reduced as old age provision no longer depend on own progeny.

In addition to discussions of the value of children, other dimensions have also been pointed out with regard to the fertility decline in Europe in the last half of the 20<sup>th</sup> century (Lutz 1999; 2000; Castles 2001; Jensen 2003; d'Addio and d'Ercole 2005). Some argue in favour of scientific and technological progress. It is obvious that the availability and more efficient use of contraceptives make it easier to hinder births, and it is also claimed that parents will opt for smaller families because of a reduced risk of children failing to survive to maturity. With regard to culture, it is argued that modern people are more reluctant to make decisions that have long-term consequences and limit their future freedom of choice. The result is later childbirths. Another assertion is that the high expectations assigned to parenthood scare people off having children as partnerships become increasingly fragile. With regard to female independence, it is stressed that fertility falls as women are freed from religious imperatives, as they get better educated, as work takes precedence over family, and as their economic independence results in a postponement of marriage.

A final factor is public spending. Sgritta (1995; 1996) compares fertility rates in the post-war period with social benefits aimed at families with children, and he finds a strong correlation between public spending and fertility rates. Esping-Andersen and Sarasa (2002) argues that welfare states should do more to support families with children to increase fertility rates (and to improve the quality of the future workforce). Finch and Bradshaw (2003) find a correspondence between the level of countries' child benefit packages and their fertility levels. d'Addio and d'Ercole (2005) comment on the way policies affect the cost of children, and conclude that "a package of policies relaxing some of the constraints to childbearing may significantly raise total fertility rates" (ibid.: 5). It must be noted though that other scholars argue that public policies seem to have little impact on fertility rates (Bagavos and Martin 2001; Caldwell et al. 2002; Neyer 2003).

The link between family policies and fertility rates will not be analysed in detail and over time. My solution is a multivariate analysis of cross-country variations in

fertility rates in 2004. This is of course a simple solution compared to time-series analysis, but it will still give an indication of the importance of public spending compared to some other prime factors.

The phenomenon I try to explain is fertility rates. My choice of dependent variable is the total fertility rate (TFR). TFR is the most widely used indicator of fertility because it describes how many children women are currently having.

The first explanatory dimension is public spending. Scholars are divided on the issue of the impact of public policy and fertility. There are those stating that there is no clear relationship between any countries' rate of fertility and the form or value of its child support package (Ditch in Bagavos and Martin 2001), and maintain that public spending aimed at raising fertility realizes little or nothing (Gauthier in Caldwell et al. 2002). There are also those that find correlations between family and child benefits and fertility rates (Sgritta 1995; 1996; Esping-Andersen and Sarasa 2002; Finch and Bradshaw 2003), stating that the loss of many child-friendly social services is a major cause for low fertility rates (Berman et al. 2005), and that high family and child benefits, particularly those aiming for allowing mothers of young children to stay in the workforce, could raise fertility levels (Caldwell et al. 2002). The indicator of public spending is *Family and child benefits in PPP per inhabitant*.

The second explanatory dimension is the ideal fertility rate. With reference to efficient contraceptives and a reduced risk of children failing to survive to maturity, it has been argued that women now have the number of children they want to. Empirical comparisons of ideal and realized fertility rates have shown that women would prefer to have more children than they actually end up having (van Peer 2000; Fahey and Spéder 2004; Aftenposten 2006).<sup>45</sup> Even though low fertility seems to be undesired to some extent, it is probable that cross-country differences in ideal fertility rates correlate with cross-country differences in realized fertility rates. The indicator of ideal fertility rates is *Desired fertility*, and this attitude-variable is taken from a Eurobarometer study (presented in Fahey and Spéder 2004). The question was this: "For you personally, what would be the ideal number of children you would like to have or you would have liked

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<sup>45</sup> Fahey and Spéder comment that "the general pattern in Europe both among younger and older women is that the number of children women would regard as ideal for themselves is on average higher than the number they actually give birth to" (2004: 4). A survey in 14 EU countries (30000 respondents) showed that many European couples want to have two children, but end up having only one (Aftenposten 2006).

to have had”. The mean desired rates vary from about 3 in Ireland and down to about 2 in Germany and Austria.

The third explanatory dimension is female employment. The increasing economic independence of women was discussed as an explanation of lower fertility rates from the mid-1970s. In the 1990s, there was a backlash against the idea of making employment and child-rearing opposite choices. Castles (2001) found that countries where policies permit women to combine labour force and family roles had higher levels of female employment and higher levels of fertility. The indicator of cross-country variances in female employment is *Share of women aged 25-54 in employment*.

The fourth explanatory dimension is later childbirth. Several studies have shown that women’s age at first childbirth matters for the number of children they end up having. This dimension is still a contested one. de Vaus (2002), for instance, comments that the fertility decline of Western countries is of too great a magnitude to be explained by fertility delays. The indicator of later childbirth is *Mean age of first childbirth*.

The fifth explanatory dimension looked upon is female education. Jensen (2003) provides an interesting discussion on the relation between education and fertility, and she comments on a great deal of studies centred on this theme. In some of these studies it is pointed out that women with high education have lower fertility rates compared to women without education. Such findings are also in accordance with results derived at by d’Addio and d’Ercole (2005). The chosen indicator of female education is *Share of women aged 25-64 with tertiary education*.

The original model of factors explaining cross-country variations in TFRs included five explanatory variables. Due to lack of explanatory power, I decided to exclude *Mean age of first childbirth* and *Share of women aged 25-64 with tertiary education*. The exclusion of the female education variable is consistent with Jensen’s (2003) verdict. In her longer discussion of studies conducted in Africa and Europe, she finds that they provide no evidence that the level of female education attainment at the country level correlates with fertility rates, i.e. countries with high female educational attainment does not have the lowest fertility rates and countries with low female educational attainment does not have the highest fertility rates.

The final model of factors explaining cross-country variations in TFRs includes three variables. The results are given in Table 13.

**Table 13:** Regression analysis of total fertility rates (2004)

	Model 1		Model 2		Model 3	
	B	SE	B	SE	B	SE
(Constant)	0.55	0.49	-0.88	0.66	-0.92	0.57
Female employment	0.015 **	0.007	0.019 ***	0.006	0.016 ***	0.005
Desired fertility			0.49 **	0.18	0.51 ***	0.16
Family and child benefits					0.00021 **	0.000
<b>Adjusted R<sup>2</sup></b>	<b>0.21</b>		<b>0.46</b>		<b>0.59</b>	

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

With only three explanatory variables, I now have an adjusted  $R^2$  of 0.59 in the final model. All explanatory variables obtain a p-value less than 0.05 and are statistically significant. Female employment and desired fertility rates are the most important variables to differences in TFRs, but I also find a significant positive relation between the size of family and child benefits in PPP and TFRs.

All models show a significant positive relation between the shares of women aged 25 to 54 participating in the workforce and total fertility rates. The results are quite stable when I introduce new variables (models 1, 2 and 3). The positive relation between female employment and TFRs is in accordance to Castles (2001) findings. Also Jensen (2003) points out that European fertility rates are highest in countries with high female participation in the workforce (as well as high education attainment, easy access to contraceptives, and marriage as an institution is weak). The model shows that an increase of 10 percentage point in female employment increases TFRs with 0.16 points. Given “mean” values on other variables (desired fertility of 2.5 and F/C of 600), the final model produces these estimates of TFRs at different levels of female employment: Low (70 per cent) = 1.61; Medium (80 per cent) = 1.77; High (90 per cent) = 1.93.

Desired fertility is another important variable. The final model shows that an increase of 1 point in desired fertility increases TFRs by 0.51. The results in model 2 to 3 are stable. The results are stable in model 2 and 3. Given female employment at 80 per cent and F/C of 600, the final model produces these estimates of TFRs at different levels of desired fertility: Low (2) = 1.51; Medium (2.5) = 1.77; High (3) = 2.02.

Family and child benefits in PPP per inhabitant, is the final variable. The result indicates a positive relation between the size of family and child benefits and fertility rates, in line with arguments given by Caldwell et al. (2002), Esping-Andersen and Sarasa (2002) and Berman et al. (2005). Jensen (2003) points out that extensive public

benefits in Norway and Scandinavia, enables women to combine work and children since they provide economic safety and safety with regard to care. An increase of 100 PPP increases TFRs with 0.02. Given female employment at 80 per cent and desired fertility at 2.5, the final model produces these estimates of TFRs at different levels of family and child benefits: Low (300 PPP) = 1.71; Medium (650 PPP) = 1.78; High (1000 PPP) = 1.85.

Tests of assumptions are given in Appendix C. In this model I have a problem with a somewhat non-normal error distribution. This could reduce the efficiency of the model. I have performed a sensitivity test with weighted variables (Robust regression). Results from OLS-regression and Robust regression are quite similar, but the variable desired level of fertility increases its impact to some extent.

Another point is that Greece is an influential country. Greece is characterized with low level of female employment, high levels of desired fertility, low spending on family and child benefits and low TFRs. The variables desired level of fertility (increasing impact) and female employment (decreasing impact) are affected by the exclusion of Greece from the analysis.

In modern societies, parenthood seems to promise moral and cultural rewards, but not economic rewards. A number of studies indicates that the cost of children have encouraged fertility decline (Espenshade 1977; Caldwell 1982; Jensen 2003). It is also argued that children represent a positive externality - they are a public benefit (Coleman 1990; Folbre 1994). As children become increasingly public goods, parenting becomes an increasingly public service. This “service” is to a lesser degree paid for, and the private costs of raising children put an economic pressure on parents, in particular mothers. As parents produce children for non-economic reasons and as Europe is struggling with low levels of fertility, it is argued that welfare states should do more to support and compensate parents of some of their economic burdens. Whether increases in benefits for families and children will have an effect on fertility rates, is, on the other hand, uncertain. My analysis shows a positive relation between the size of family and child benefits and fertility rates. It would be an overstatement to propose that this test has provided evidence of the link between public spending and fertility rates, but it still gives an indication that there might be a correlation.

### 4.3.2 Population ageing and higher spending on the elderly

Although the demographic future of any population is uncertain, the anticipated trends in population size and the old age dependency ratios in 2050 are alarming. Table 14 shows projections of population trends, and I have used data from the Constant Fertility Variant presented by the United Nations Population Division (2005a).<sup>46</sup>

**Table 14:** Population size and age dependency ratios, 2002 to 2050

	Population size (Millions)			Age dependency ratios				
	1950	2000	2050	Old-age dependency ratio			Young-dependency ratio	
				2002	2050	Change %	2002	2050
Social Democratic								
Denmark	4.2	5.3	5.7	22	42	186	27	26
Finland	4	5.2	5.2	23	46	204	27	27
Netherlands	10.1	15.9	16.1	20	42	207	27	27
Norway	3.3	4.5	5.3	23	44	187	31	26
Sweden	7	8.9	9.5	27	47	173	29	26
Liberal								
Ireland	3	3.8	5.8	17	41	241	32	28
UK	49.8	58.7	64.1	24	39	158	29	27
Conservative								
Austria	6.9	8.1	7.5	23	55	240	25	24
Belgium	8.6	10.3	9.8	25	47	182	27	27
France	41.8	59.3	63	25	46	187	29	28
Germany	68.4	82.3	72	26	49	205	23	27
Luxembourg	0.3	0.4	0.7	21	35	173	28	27
Southern European								
Greece	7.6	11	10	25	62	241	22	26
Italy	47.1	57.7	46.7	27	66	245	21	25
Portugal	8.4	10.2	10	24	53	232	25	26
Spain	28	40.7	38.5	25	68	276	21	26

Sources: United Nations; 2003; 2005a; OECD 2004a; 2005a; 2005b.

The first part of the table tells about population size from 1950, via 2000, to the projected size in 2050. The number of residents in all 16 countries increased from approximately 300 million in 1950 to 380 million in 2000, and according to the model it is expected to be 370 million in 2050. Thus, all countries experienced population increases from 1950 to 2000, whilst there are cross-country variations of expected

<sup>46</sup> To project population until 2050, the United Nations Population Division applies assumptions regarding future trends in fertility, mortality, and migration (2005a). The 2004 Revision includes six projection variants. The Constant Fertility Variant, a model often referred to by both the OECD and the United Nations, holds the following assumptions (ibid.): For each country fertility remains constant at the level estimated for 2000-2005; mortality is projected on the basis of recent trends in life expectancy by sex for each country; and migration is set on the basis of past international migration estimates and an assessment of the policy stance of countries with regard to future international migration flows.

changes in population size over the next 50 years. Seven countries are expected to have more residents, in three countries population sizes are expected to stay at approximately the present level, and six countries are expected to have smaller populations in 2050.<sup>47</sup>

On a global scale, the Constant fertility variant would mean a decline in the European share of the total population from 12 per cent in 2000 to less than 7 per cent in 2050 (United Nations 2003). If this occurs, it is likely to have significant effects on the military balance, Europe's ability to compete with other dynamic economies (the USA and China), and there is fear of a "brain-drain" from Europe (Castles 2001). According to Ringen (2003), depopulation could mean jeopardizing Europe's rich cultural heritage in architecture, art, literature, music, freedom and democracy.

The second part of the table shows age dependency ratios. The old-age dependency ratio is defined as the ratio of the number of elderly people (aged 65 and over) to the number of people of working age (from 15 to 64). In 2002 old-age dependency ratios varied from 17 per cent (Ireland) to 27 per cent (Italy). The projected dependency ratios of 2050 describe variations from 35 per cent (Luxembourg) to 68 per cent (Spain). The expected increase in old-age dependency ratios from 2002 to 2050 is less than 200 per cent in seven countries and more than 200 per cent in nine countries.

The young-dependency ratio is the ratio of the number of young people (under 15 years of age) to the number of people of working age (from 15 to 64). In 2002 the young-dependency ratio varied from 21 per cent (Italy) to 32 per cent (Ireland). Projections for 2050 vary from 24 per cent (Austria) to 28 per cent (Ireland).

Population ageing is one of humanity's greatest triumphs, but it also represents one of humanity's greatest challenges (WHO 2001). Although life expectancy has increased, healthy survival time has not been extended to the same degree. Hence, an ever-growing number of years, and an increasing proportion of people's old age, are spent in disability or restricted activity, and therefore in need of medical and social care (European Centre Vienna 1993). A literature review shows that many scholars point out that population ageing is expected to slow down economic growth, give lower national savings rates, and have serious consequences for the labour market.<sup>48</sup>

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<sup>47</sup> Other estimates are more pessimistic. Glass (2005) calculates that the persistence of the average TFR in 2000-2005 (1.4) means a reduction of the total population by one third roughly every 30 years.

<sup>48</sup> In assuming unchanged participation rates and preservation of the retirement age at present levels, Europe will have to get by with smaller labour forces: Recent estimates show a decrease of 8 per cent in the next 50 years for the EU-15 (Eurostat 2006). The age composition of the workforce is expected to

My interest in the consequences of demographic ageing is related to the probable impact of demographic ageing on age-related public spending. There are two sides to this relation; a) size and b) political power.

The first point is that the age structure matters for the demand placed on age-related public expenditures. As the share of elderly people increases, one would also expect increases in benefits for those in old age. The development in the European welfare states in the past four decades illustrates this; with increasing shares of old people there has been a steady rise of health and pension expenditures as a percentage of GDP. The findings of Section 4.2 also shed light on this: I found that the share of elderly people had a significant impact on the size of old-age benefits measured in PPP per inhabitant; and I found that most countries up for examination increased their relative shares of social benefits spent on old-age benefits in the period 1980 to 2002.

Given the scale of the ageing phenomenon, expenditures to the elderly are expected to continue to rise. Whiteford (2005) estimates spending on pensions in 2050, as a share of GDP. Assuming the same generosity as of today, he finds that: Spanish spending on pensions will double from the current level of 8 per cent to 16 per cent; Germany will experience an increase from 12 to 17 per cent; the Netherlands from 6 to 10 per cent; Finland from 8 to 12 per cent; France from 11 to 15 per cent; Belgium from 9 to 12 per cent; Sweden from 9 to 11; and the United Kingdom from 8 to 10 per cent. This also points to an increase in the discrepancy between resources allocated to the elderly and those allocated to families with children over the next decades.

It is also possible to expect the rapid change in age structure to have troubling consequences for the elderly and favourable consequences for children. The sharp rise in the number of elderly should put enormous pressure on public benefits directed at them, and public expenditures might not keep track with their increasing number. Since the 1990s most countries have reformed pension systems to ensure financial sustainability. Even though public expenditures to the elderly will rise, such reforms will reduce the potential increases in expenditures.

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change with a higher share of older workers and fewer younger workers (Castles 2001), and some sectors are anticipated to have an increase in short- and long-term labour shortages (Whiteford 2005). The additional burden in the form of increased taxes and social security contributions imposed on the working population would be likely to generate considerable disincentive effects in terms of labour supply and work effort (McMorrow and Roeger 2001).



Reductions in public spending “per elderly person” are problematic. It means that tomorrow’s elderly (probably) not will be guaranteed the same level of well being as that guaranteed to the elderly of today. It points to the two sides of the generational conflict; the unequal sharing of resources between generations or age groups in space; and the unequal sharing of resources between successive generations or cohorts in time. According to Thomson (1996), modern societies have acted as though certain “birth cohorts have unique and ongoing rights to advantage at the expense of others”, and according to Sgritta (1996), governments have pursued short-term objectives in serving the immediate interests of one generation and “leaving the future to divine providence”.

The idea of favourable consequences for tomorrow’s children is based on the expectation of their declining/stable share of the population. Fewer children should mean less competition for resources at home and greater availability of public benefits to families with children in kind and in cash. With reference to public benefits, this is less likely to occur. The point is that increases in spending on those in old age also will affect public spending to other groups, such as families with children. According to Preston (1984), the public resistance to very high levels of taxation suggests that gains for one group (the elderly) come partly at the expense of the other (children). Thomson (1996) extends this and comments that population ageing will make it more difficult to address child issues and child needs in the first part of the 21<sup>st</sup> century.

One cannot wish away the possibility that there is a “competition” between worthy population groups, e.g. between children (and their families) and the elderly. In this “competition”, population ageing favours those in old age. So far, I have commented on the issue of “size” of groups, and I will now turn to “political power”.

A number of scholars have discussed elderly people’s increasing political power in connection to population ageing (Preston 1984; Thomson 1996; van Parijs 1998). This increasing political power is the sum of size and resources. The idea is that as the relative proportion of old people in the electorate increases, the elderly may use their electoral strength to further their own interests. But it is more complex than that.

First of all, people in different age groups and family circumstances do not see public issues in the same way. Since the 1950s, the distribution of political perceptions, concerns and choices by age have become a standard item of election studies (Abrams 1970). A number of studies on political attitudes have also documented that people in

different age groups have different political concerns (Harris 1999; Daatland et al. 2003; Dagbladet 2003; Eurobarometer 2004; 2005). The stereotypes would be that old people find pensions and health care important, whilst young people are concerned with environmental issues and education.<sup>49</sup>

Second, I turn to size. The share of elderly in the population has increased and will continue to so. In addition to the elderly themselves, Preston (1984) explains that those with self-interests in public spending on pensions and health care are their offspring (who must support their parents if they cannot support themselves) and working age population (who votes for benefits they will get themselves when they reach old age). At the other stance, the share of parents is decreasing. This reduces the share of the electorate concerned about policy issues affecting families and the young.

Third, I turn to resources. It is widely documented that elderly have a high voting turnout, and in most countries of this study they constitute more than 20 per cent of the electorate. It is also documented that old people are politically knowledgeable, compared to more political passivity among the young (ibid.; Abrams 1970). In addition, over the past decades active elderly lobby groups have emerged in many nations (Campbell and Lynch 2002; Thomson 1996). These groups push for more entitlements for the elderly, and defend those benefits already gained. Population ageing is likely to extend these trends for the elderly to politically organize themselves in interest groups and parties. In terms of political representation, however, the elderly are a minority. It is the 30 to 60-year-olds who dominate.

In a modern democracy, public policy decisions are obviously influenced by “groups” with special interests. Political parties depend on votes to have their politicians elected and to be able execute their party policies. It would be a mistake to say that the

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<sup>49</sup> I will give five examples of surveys that show the effect of age on political attitudes. First, in a study from Eurobarometer (2005), respondents were presented with a list of issues and asked to indicate the two most important ones faced by their countries. A considerably higher share of old people put pensions and health care systems as the most important issues faced by their countries, compared to younger age groups. Secondly, in another Eurobarometer study (2004), old people were more inclined to agree that current pension levels should be maintained even if this means having to raise taxes or contributions. Third, in a 1996 MORI poll from the United Kingdom, older persons (55+) listed pensions and social security as the issues with the highest personal affect (Harris 1999). Fourth, in a MORI survey from 1999, voters above the age of 55 said that their major preoccupations were health care, law and order, and pensions, whilst they showed less concern about education and the managing of the economy (ibid.). Fifth, in Norway, surveys have shown that young voters are primarily concerned with education and environmental issues; parents are more interested in family policies; and the prime concerns of old people are health, pensions, and care for the elderly (Daatland et al. 2003; Dagbladet 2003).

aim of political parties is to maximize their support among voters, but every party has to make their policies attractive for voters. As the share of old people has increased, there has been a tendency in many countries to formulate or design policies to attract older voters. One example is the United States, where it has been alleged that politicians ignore young peoples' interests and "pander to the 'Grey Lobby' on whose vote they perceive themselves to be dependent" (Harris 1999: 10). Another example is Norway, in which political parties have competed fiercely for the position of appearing to be the most old-age-friendly party in the recent elections. Thomson (1991; 1996) sees this in more "universal" terms, and calls the shift in modern societies in public priorities from the young to the old, political ageing.

In evaluating the possible impact of demographic ageing on public spending, I have pointed out the obvious; population ageing matters for the demand on old-age benefits. The other part of this story is the continuing shift in political power. Some would state that the elderly constitute an important political "interest group" (Preston 1984). I do not know if this term is the best as it sounds too much like a political group standing together and fighting to better their own situation. My discussion has established some grounds to state that the elderly constitute an important part of the electorate, that age matters to political perceptions and concerns and also voting behaviour, and that existing political parties' attention is drawn to the interests of elderly. All voters have the right to vote from their self-interests, but the fear is that old people can disadvantage younger age groups through their electoral power.

In the next part, I will consider different suggestions concerning policy responses to population ageing. I focus on those of relevance to age-related public spending. Among these there are also suggestions for institutional changes in voting systems (van Parijs 1998; Hinrichs 2000), and these suggestions are made to reduce the political power of elderly people.

### **4.3.3 Policy responses to ageing and public spending**

The United Nations projections give an understanding of the significance of demographic ageing. Ageing causes a lot of anxiety, especially with regard to economic prosperity and public spending on the elderly, but the relatively small ranges of uncertainty over the ageing phenomenon provide a window of opportunity for political responses. According to the OECD (1998), the appropriate response covers education, fiscal, financial markets, labour market, health, and social policies.

Some of the proposed responses to the challenge of ageing societies are closely linked to age-related public spending. I group them in three categories of responses: The social investment strategy; reforms of pension systems; and changes to voting systems.

#### **The social investment strategy**

The social investment strategy is based on human capital and social capital theory, and it aims at improving education systems, eliminating child poverty and increasing fertility rates. The argument is that European countries must increase public spending on families with children and education in order to be competitive in the future knowledge-based society (Esping-Andersen and Sarasa 2002).

The social investment strategy rests on three fundamental pillars. The first is the relationship between investment in human capital and productivity growth. According to the European Commission (2004), an extra year of schooling can add about 6 per cent to total productivity, and improvements in education systems play a key role in fostering technological change. The second is that child poverty is a serious obstacle to a child's productive capacity as an adult. According to Esping-Andersen and Sarasa (2002), children growing up in poverty leave education two years earlier than their average peers, have thirty per cent lower lifetime earnings, and run twice the risk of unemployment. To them it is a policy paradox that the associated costs of child poverty are high for the individual and society, whilst the costs associated with eliminating the problem of child poverty are modest.<sup>50</sup> The third pillar is the link between fertility rates and spending on family and child benefits, and this is based on the idea of a relation between the decline in fertility and the costs of children (Sleeboos 2003). To increase

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<sup>50</sup> In Norway, Epland (2001b) has calculated that about 900 million NOK is enough to lift all children above the 50 per cent median income poverty line.

fertility rates is a long-term means to secure a better age dependency ratio. As seen in Section 4.3.1, I find that fertility rates are higher in countries spending more on family and child benefits. Uncertainties still surround the question of to what degree government policies can have an impact on low-fertility countries.

The social investment strategy is focused on the policy concern of worker shortages in Europe in the 21<sup>st</sup> century. To solve this dilemma, Esping-Andersen and Sarasa (2002) are concerned with the quality of workers (improve education systems and reduce poverty) and the number of workers (increase fertility rates). In addition, one could argue that the practice of this strategy would have positive consequences for female participation in the workforce. Women participate to a lesser extent than men in the workforce, and they have a greater tendency to work part-time. Swaim (2005) comments that there is a potential for mobilizing the female workforce in all of the countries I have covered, especially for women with children. The key issues for mobilizing the female workforce are family friendly policies such as part-time work; flexible working hours; teleworking or working at home; leave arrangements; allowances for caring for sick children; and childcare (Whiteford 2005).

The strategy illuminates that family and child policy has important “macroeconomic implications” (Folbre 1994). Preston (1984) asserts that most types of expenditure on children (and their families) are both consumption and investment. Public spending on education systems and families, to relieve children from relative poverty, affects the future productive capacity of the economy. Expenditure on the elderly, on the other hand, is almost exclusively consumption expenditure. In Preston’s view (*ibid.*), collective concerns should affect decisions about the mix of private and public childrearing responsibilities.

The strategy also embeds and points to the two interrelated challenges with generations. The first is the relative impoverishment of some children. Some parents are not able to keep the number of children within the boundaries of their economic possibilities to care for them. The second challenge is the looming problem of safeguarding old people’s pension schemes. Rather than the envisaging children and old people competing for the same resources, the strategy turns the connection between children’s and old people’s welfare into a positive one. First, it clarifies that lack of public support is an important cause of child poverty, and the authors argue that the

state has responsibilities to prevent child poverty. Second, it emphasizes future worker shortages and the possibility that social security systems are jeopardized. The strategy makes clear that the essence of the pay-as-you-go system is that elderly are dependent on succeeding generations for a living. People are no longer dependant on their own children, but they are dependent on the next generation.

Translating the social investment strategy into practice means increased spending on family and child benefits (reduce poverty and increase fertility rates) and increased spending on education systems. In order to adopt this child-friendly policy, governments either have to raise revenues by the way of taxes or reallocation of public resources from other areas. One problem with the social investment strategy is that it does not spell out where cuts in public expenditures ought to be made or, alternatively, how government revenues are to be raised. It may be imagined, though, that a likely consequence of a shift in spending benefiting children and their families would lead to cuts in public spending on adult households without children and/or elderly people.

### **Reforms of pension systems**

With regard to pensions there are, in general, two approaches: Improving government revenues, or lowering spending on each individual pensioner. The tactics of improving government revenues or lowering spending on each individual pensioner are clearly of relevance to age-related public spending: If implemented, one would either see a worsening of the economic position of the elderly or less disposable income in the hands of the younger age groups (since they would be affected by higher taxes).

One approach is to maintain (or improve) present standards. The costs of increasing pension expenses could be paid for through increasing the share of taxes or contributions paid for by employees and the self-employed which goes towards financing public pensions. In the field of taxation, many of the countries in this study are pursuing a combination strategy of lower statutory tax rates and a broadening of the tax base.

The second approach is to reform sophisticated pension systems. Although there are cross-national variations, the OECD (2005c) states that reforming pensions is of great importance to ensure financial sustainability. From the late 1990s, a wave of

pension reforms has swept across Europe (Pension Commission Norway 2004). The most important traits are reductions of net replacement rates and higher retirement ages.

Cross-country comparisons of pension systems are not easy. Life expectancies vary, and there are differences in retirement ages, required years of service, benefit calculation methods and adjustment of paid-out pensions. Using their *Pensions at Glance indicators*, OECD (2005c) makes an effort to compare across countries. The calculations show that net replacement rates are high in Luxembourg, Southern Europe, the Netherlands and Austria. Rates are medium in Norway, Finland, Sweden, Belgium, France and Germany. Rates are low in Denmark, the United Kingdom and Ireland.

Hewitt (2002) states that retirement has become a lengthy period of state-supported leisure. The point is that many old people could be working, due to increased life expectancy achieved through modern medicine and less physically strenuous jobs, but they do not. There are cross-country variations with regard to effective retirement ages; from 70 years for men and 68 years for women in Ireland to 59 years for men and 57 years for women in Belgium. In order to improve the job prospects of older people one must focus on removing financial disincentives to work, encourage employers to retain and hire older workers, and improve the employability of older workers.<sup>51</sup>

### **Reforms of voting systems**

The last category of propositions is institutional changes in voting systems. The aim of these proposals is to hinder old people from disadvantaging younger age groups through their electoral power. van Parijs (1998) and Hinrichs (2000) discuss some suggestions for institutional change.

The most extreme proposal is the disenfranchisement of the elderly (van Parijs 1998). The suggestion is that everybody loses the vote at retirement age, since they are not the ones who “pay the bills” for the politician/party they help to elect. The suggestion is problematic since it denies that old people have the right to vote from self-interest. More importantly, the proposal violates the core value of political equality since the legal right to vote is a formal expression of the idea of equal citizenship.

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<sup>51</sup> There are three important features (OECD 2005d): a) Men work longer than women; b) the effective retirement age is lower than the official age of retirement; c) there is a close relation between the effective retirement age of men and that of women, in the sense that when men retire later women retire later.

Another proposal is to reduce the minimum voting age to 14 or 16. The minimum voting age went down in most countries from 25 years at the end of World War II to 18 years now.<sup>52</sup> An argument for further reductions is that this could make political parties and policy-makers more responsive to young people's expectations and needs (Hinrichs 2000). On the other hand, the expected impact of lowering the age threshold of voting rights is strongly dampened by the low turnout of younger voters (Aalandslid 2001). There are also two challenges connected with new minimum ages of voting. The first is determining the voting age. The second is that it would be difficult to increase the age limit for voting once it is lowered (Harris 1999).

van Parijs (1998) also comments on other proposals. Give every member of the population the right to vote from the very first day of her life, and entrust parents with the responsibility of voting on behalf of their children. Make the weight of a person's vote age-sensitive. Require that each age group elect its own representatives.

### **Public attitudes**

I have explored some of responses to population ageing. Politicians must, to some extent, listen to the opinions of their voters. Eurobarometer-studies (2000; 2004; 2005) give some signals on public attitudes to some of the optional strategies.

The social investment strategy, and a strategy for improving female participation in the labour market, requires child and family friendly public spending. The majority of respondents in all EU-15 countries mention education as a key area for improving the performance of the European economy (Eurobarometer 2000); and the majority (80 per cent) in all EU-15 countries agrees that governments should make it easier for women to combine family and work (Eurobarometer 2004). It is, on the other hand, more difficult to reach consensus on the necessity of cuts in order to spend more on family and child benefits and education systems.

Since the 1980s, the OECD has criticized governments for postponing pension reforms. Eurobarometer studies (2004; 2005) show that pension reforms are unpopular ventures, both with regard to raising retirement ages and reducing pension levels.

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<sup>52</sup> Some countries have gone further: In Brazil and Nicaragua, voting starts at 16; in Iran at 15 (van Parijs 1998); and in some states in Germany and Austria the age limit for voting in municipal elections has been reduced to 16 (Hinrichs 2000). In Norway the socialist party (SV) has proposed to lower the minimum voting age to 16, but without gaining enough support (Stortinget 2001).



## 4.4 Insights from the chapter

The intention of Chapter 4 has been to explore age-related spending. I began the chapter with an examination of some general features of the welfare states. This study showed broad public support in all 16 countries for welfare state programmes aimed at reducing inequality, providing equal opportunities and helping citizens in need. Welfare states redistribute from the rich to the poorer in various ways. Some countries focus on redistribution through taxes; others focus on both taxes and transfers; some have high taxes and less progressivity; while others have lower taxes and more progressivity.

The main part of Chapter 4 dealt with a discussion of different functions of social benefits. To divide social benefits by age is not an easy task. For instance, it is often unclear whether the target groups of family and child benefits are children, parents or “the family” (Bojer 1993). In practice, however, the targets of family and child benefits are the head of the household. Given the available data, I was unable to compare public spending on children, adults and old people.

In order to provide information on the position and importance of old people and families with children in social policies, I decided to look into the development in size of family and child benefits and old-age benefits. This discussion is important as family transfers are meant to support and relieve parents of some of their economic costs of raising children. Such transfers are important for children’s material welfare.

Many scholars have studied developments in age-related spending after World War II. I decided to look into the period 1980 and onwards. This also included a discussion of future expectations with regard to age-related public spending.

### **Spending patterns 1980-2003**

My first research question was: *Has there been a pattern of growth in old-age benefits in combination with a decline in spending on family and child benefits?* I presented two indicators to cope with this question.

One indicator was spending on old age and family and child benefits in constant prices, with 2000 as the base year. I found increases in spending on both family and child benefits and old-age benefits from 1980 to 2003. The absolute expenditure on the elderly was about three times higher both in 1980 and 2003.

The other indicator was spending on the old and families with children as a share of total social benefits from 1980 to 2001. Whilst the mean for 16 countries on old-age benefits increased from 32 to 37 per cent of total social benefits, the mean of family and child benefits was approximately the same in both time periods (9 per cent). More precisely, the relative size of old-age benefits was 3.3 times the size of family and child benefits in 1980 and 4.0 times in 2001.

My indicators provided somewhat different descriptions. The general feature was an extensive growth in the funds spent on the elderly, whilst family and child benefits were either stable (relative indicator) or increased (absolute indicator). I could not conclude that there was a trade off. It could be argued that without the increasing generosity towards the elderly, there would be more funds available for spending on family and child benefits. That is a closely related discussion, as the relative gap between spending on the old and family and child benefits increased from the 1980s.

Any exact conclusion could not be drawn for another reason; there were huge cross-country variations. The analysis of the relative indicator showed that six countries increased spending on the old and reduced spending on families with children, and three countries increased spending on old-age benefits and spent the same on family and child benefits. In four countries both the old and the young benefited from increased spending. Finally, in three countries the share of welfare outlays spent on old-age benefits was the same, whilst the share spent on family and child benefits increased.

### **Cross-country variations**

The second research question was: *Why do welfare states differ with regard to the sizes spent on old-age benefits and family and child benefits?* In non-experimental research one tries to remove spurious effects by statistical adjustment of the effects of other variables. In order to answer this question, I accounted for these explanatory dimensions; the modified regime typology, economic performance, the age structure, and family structures. It should be noted that regression models with small number of countries (16) are particularly problematic (Ringdal 2001): Regression analysis with few cases can only include a small set of explanatory variables; and with few cases it is very important that the theoretical assumptions of OLS hold. To deal with these issues I have paid much attention to tests of assumptions, and I have compared my final OLS-

model with Robust regression and an OLS-model excluding influential cases. The choices of explanatory variables are based on former theoretical and empirical studies, but it is obvious that I might have omitted relevant variables. For such reasons my results should be viewed as indicative and be cautiously interpreted.

In the regression model on “Benefits for families and Children in PPP per inhabitant”, I managed to “explain” 91 per cent of the variation in the dependent variable. This told that many important explanation variables were included, and the model was reasonably parsimonious. Controlled for other variables, I found that:

- The Social Democratic and the Conservative regimes spent significantly more on family and child benefits compared to the Southern European regime, whilst the Liberal regime did not spend significantly more than Southern Europe.
- As GDP per capita increased, spending on family and child benefits increased. GDP per capita was the most important predictor and its effect was significant.
- As the share of single parents rose, spending on family and child benefits decreased until a certain point (about 15 per cent). The effect was significant.

In the regression analysis on “Old age-benefits in PPP per inhabitant”, I managed to “explain” 67 per cent of the variation in the test variable. I included five predictors and found the model to be reasonably economical. Also these results could be trusted; I had a problem with a non-normal error distribution, but a Robust regression showed similar results as OLS-regression. The model showed that:

- The Social Democratic and the Conservative regimes spent significantly more on old-age benefits compared to the Southern European regime, whilst the Liberal regime did not spend significantly more compared to Southern Europe.
- When the share of old people increased, spending on old-age benefits increased. This was the most important variable, and the effect was significant.
- When GDP per capita increased, spending on old-age benefits increased. This effect was not significant at the 0.05-level.

One important lesson was that the modified regime typology was an important predictor of both family and child benefits and old-age benefits. It was also of interest that different explanatory variables were relevant in the two models. The age structure (share of old people) mattered much to spending on old-age benefits, but the age structure (share of children) was irrelevant on family and child benefits. Economic performance (GDP per capita) was very important for family and child benefits, but this dimension had lesser influence on old-age benefits.

## **Population ageing and age-related spending**

European countries have a favourable age structure due to the baby-boomers of working age supporting relatively few retired people, but relatively soon the baby-boom generation will reach retirement and the working age share of the population will drop. This causes much anxiety. The third research question was: *How is age-related public spending linked to the challenge of ageing societies?* In order to answer this question I discussed some relations between age-related public spending and ageing societies.

My first point was the link between public spending and fertility rates. In fertility research it is presumed that fertility behaviour to some degree depends on how adults depict children (Espenshade 1977; Caldwell 1982; Jensen 2003). A common example is differences between developing and industrialized countries. In developing countries fertility rates are high and children are depicted as an economic and social gain. In the richer countries, fertility rates are lower and children are perceived as costly both in financial and social terms (feeling tied down).

Scholars are divided on the relation between differences in public spending on families with children and fertility rates. My approach was to explain fertility rates in 2002, using the size of family and child benefits as one of more predictors. I found that family and child benefits in PPP per inhabitant had a significant effect on fertility rates, but also that desired fertility rates and female employment mattered more. This multivariate analysis gave an indication of the link between family policies and fertility, but not more than that. Still, Gauthier (2000) may have a very good point when she comments that any discussion of the impact of public policy on fertility requires a redefinition of the traditional approach to family policies:

“I indeed strongly believe that a proper understanding of family policy trends requires the examination of the economic, social, and political context in which families and governments operate, as well as the examination of the opinion, values, and concerns of the different societal actors” (Gauthier 2000: 1).

The second point was the link between the age structure and public spending. The age structure makes a difference in terms of demand for schools for the young and retirement homes for the elderly; it affects the balance of the pension system in which those who are gainfully employed today pay for those who are now entitled to retirement benefits; it has implications for the labour market; and the age composition

might also influence on political power (Qvortrup 1994; Lutz 2000). Many studies have shown that the increasing share of old people over the past decades has been followed by a steady rise of health and pension expenditures as a percentage of GDP. The future expectations are on continued growth on old-age benefits.

According to the European Commission (2004), the next five years represent the final window of opportunity for political action before a rapid process of ageing begins. The third point was that some of the proposed responses to the challenges associated with ageing societies were closely linked to age-related public spending. These “solutions” were: The social investment strategy (more public spending on families with children and education systems might reduce child poverty and increase fertility rates, as well as increase female participation in the workforce); a redesign of pension systems (important features are reductions of net replacement rates and higher retirement ages); and institutional changes in voting systems (aimed at hindering old people of disadvantaging younger age groups through their voting power).

European governments must take into account that the majority of the public is highly sceptical towards some of these solutions, in particular pension reforms. They are more positive to expenses on education and strategies to increase female participation in the workforce, but it is less clear how such expenses should be paid. I have not been able to find any surveys on proposals for institutional changes to voting systems.



## 5. Comparisons of Income distributions

The term *material welfare* points to a state or condition of doing or being well with reference to resources or possessions. Based on current practices, the validity of results, and availability of data, I have chosen income as an indicator of material welfare. In the wider picture, income is just one of many “objective” indicators used to measure welfare. Examples of other “objective” areas of importance are health, labour market, leisure, social relations and housing, and then there are subjective measures such as quality of life and satisfaction of needs (Halvorsen 2002; Schiefloe 2003).

Income data is an indirect indicator of material welfare, as it describes people’s ability to acquire goods and services to satisfy their needs. The intention of Chapter 5 is to evaluate income distributions in 16 countries according to patterned principles of distributive justice. The evaluation of income differences between age groups follows Olli Kangas` (2000) and his discussion on empirical assessments of Rawls’ theory of justice as fairness. The suggestion is that rational decision-makers, who do not know their age, would choose to live in a society where monetary differences between childhood, adulthood and old age are minimal. Patterned principles of justice present criteria with which to guide discussions of actual income distributions. I choose to evaluate statistics on income distributions based on these patterned principles of distributive justice; equality (low levels of inequality), the difference principle (relative poverty), and equal opportunity (characteristics of children who do not have access to the resources enjoyed by most children.) I have formulated these research questions:

- Are there cross-country differences with regard to inequality and poverty rates for the population as a whole and between age groups (children, adults and old people)?
- What can explain cross-country differences with reference to inequality and poverty rates for children and the elderly?
- What household features characterize children living at risk of poverty?

The first section is about equality. I start from two propositions on how to evaluate the distribution of income: a) Low levels of inequality in the population as a whole

characterize *just societies*; and b) Low levels of inequality between children, adults and old people characterize *just societies*. A descriptive analysis is followed by a multivariate analysis on cross-country differences in children and old peoples' median position (median income). The main predictor to be examined is the regime typology.

Section 5.2 discusses the difference principle. The indicator used is relative poverty. The evaluation based on the difference principle starts with the following propositions: a) *Just societies* are characterized by low levels of poverty; and b) *Just societies* are characterized by low levels of poverty in different age groups. A descriptive analysis is followed by a multivariate analysis on cross-country differences in child and old age poverty. Yet again, the main predictor is the regime typology.

Section 5.3 explores the principle of equal opportunity, and by this I focus on income variances between groups of children. Equal opportunities, understood as equality between children, constitute a next to impossible goal. But equal opportunity understood as providing all children with a fair chance to develop their capabilities, is applicable to identify groups overrepresented among children living in poverty.

Section 5.4 summarizes the main results and presents lessons from the chapter.

I will now briefly comment on methods. Methods are more extensively dealt with in Chapter 3, but it is important to be reminded of the flaws and uncertainties surrounding this synchronic analysis of contemporaries.

First, children do not work, and they are not allowed to work before a certain age. Since children generally do not have an income of their own, the only way to measure their affluence or poverty is to identify them as members of a poor or affluent household. This means to disregard internal inequalities within households, by assuming that all household members share the same level of affluence.

Second, the statistics on income distribution divided by age groups are based on calculations of "individual disposable income". To calculate "individual incomes" one has to divide "household income" by some parameters (economies of scale and child-adult ratio). The choice of equivalence scale is complicated as it is hard to provide empirical evidence that one scale is better than others. At the same time, the choice of equivalence scales could have a strong impact on the statistical perceptions of the income distribution. This problem is of less relevance to cross-country comparisons of a



particular age group and its position in the distribution of income, but more important for intergenerational comparisons, e.g. comparisons of children, adults and the elderly.

The data I use are from Eurostat. This bureau divides household income by the pragmatic EU-scale. This scale assesses that children are less costly than adults and old people, and the economies of scale are low (0.5 per extra adult and 0.3 per extra child). Compared to the more generous OECD scale, the EU-scale overestimates the share of old age poverty and underestimates the share of child poverty.

Third, it is very complicated to measure income differences. Disposable income enjoys international acceptance and is generally regarded as the best indicator, but the concept still has many flaws. With regard to comparisons of age groups, there is a particular difficulty with the exclusion of variations in savings and assets. I am going to provide some examples of the impact of savings and assets, but unfortunately my data does not allow me analyse this matter in detail.

Fourth, I continue to use regression analysis in order to understand cross-country differences. Still the number of countries is only 16, and this has implications for the analysis and interpretation of results. I am going to continue to use the explanatory dimensions looked upon in Chapter 4; the welfare regime typology, economic performance and the age structure. In addition, I also look into the importance of social benefits (size of family and child benefits and old-age benefits).

These brief remarks on methods are important. They include several warnings concerning the sensitivity of the type of analysis performed in this chapter. It is important to be very cautious in comparisons of children, adults and elderly, in particular for three reasons; a) choice of equivalence scale matter, and b) the components of the income concept matter; and c) it is difficult to compare the condition of doing or being well of people whose consumption patterns and socially ascribed needs are different. It is also important to be cautious when explaining cross-country differences, in particular as I compute regression analysis with small N.

Different terms are used in studies of children and their position in the distribution of income. Such concepts are “child income”, “children’s family income”, “economic conditions of children”, “children’s material welfare”, “children’s standard of living” etc. In general I use the term “children’s material welfare”, but in analyses of specific results I use terms like “children’s median position” and “child poverty”.

## 5.1 Inequality between age groups

In Chapter 2 I modified the principle of equality to be *low levels of inequality*. This modification was argued for several reasons. First, redistribution of income and equalization of economic prosperity are central parts of the ideological basis of the modern welfare states (Schiefloe 2003). Second, egalitarian theorists diverge about the desirability of income equality, but they agree on the desirability of low levels of income inequality. Third, public opinion surveys show that people want welfare states to reduce economic inequalities (Eurobarometer 2000; 2005; Fourage 2003). Fourth, countries with fewer economic inequalities register greater degrees of social trust among citizens and institutions compared to more unequal countries (Rothstein and Uslaner 2005). Over the past decades the EU and the OECD have made it their priorities to reduce income inequalities, but statistics show that income inequalities have increased in most of the countries in this study (Eurostat 2006; 2007).

Section 5.1.1 is a descriptive analysis of inequality indicators in 16 countries. Section 5.1.2 discusses cross-country variations.

### 5.1.1 Observed inequalities in 16 countries

In Table 15 I apply two indicators of overall levels of inequality and one indicator of variations across age groups. First, the income quintile share ratio (S80/20) compares the total equivalized income received by the top income quintile (the 20 per cent of the population with the highest equivalized income) to that received by the bottom income quintile (the 20 per cent with the lowest equivalized income). The second measure is the Gini coefficient (G). If each person receives the same income, G would be 0 per cent. If the entire national income was in the hands of one person, G would be 100 per cent.

The final measure, the median position, distinguishes between age groups. Children are defined as those between 0 and 15 years of age, adults are those between 16 and 64 years of age, and the elderly are those over 65 years of age. The median position is calculated as such: (Disposable median income of the age group/National median disposable income)\*100. On a general note I would like to remark that it would have been beneficial to compare median equalized incomes in PPP, but such figures only include 12 countries.

**Table 15:** The income quintiles share ratio (S80/20) and Gini Coefficient for the entire population (2004), and relative median position by selected age groups (2000-01)<sup>53</sup>

	S80/20	GINI	Relative median position			
	Whole population		0-15	16-64	65+	Total
Mean	4,5	29	93	107	84	100
Social Democratic						
Denmark	3,4	24	99	105	76	100
Finland	3,5	25	98	106	78	100
Netherlands	4,0	27	89	106	97	100
Norway	3,6	25	99	108	73	100
Sweden	3,3	23	98	109	79	100
Liberal						
Ireland	5,0	32	91	109	66	100
UK	5,3	35	87	113	80	100
Continental Conservative						
Austria	3,8	26	87	107	85	100
Belgium	4,0	26	100	106	79	100
France	4,2	28	95	104	89	100
Germany	4,4	28	93	104	95	100
Luxembourg	3,7	26	89	104	97	100
Southern European						
Greece	6,0	33	100	106	78	100
Italy	5,6	33	90	104	95	100
Portugal	7,2	38	86	109	82	100
Spain	5,1	31	85	107	88	100

Sources: Förster and d'Ercole 2005; Eurostat 2006

I now comment on the results for the whole population. The average levels are 4.5 on the quintile share ratio and 29 per cent on the Gini coefficient. Even though all examined countries, with the exception of Germany, have experienced an increase in inequality since the late 1980s, these averages are quite low in a global perspective (Förster and d'Ercole 2005; Eurostat 2006). Striking cross-country differences emerge in the level of inequality from both indicators. The quintile share ratio varies from 3.3 (Denmark) to 7.2 (Portugal), and the Gini Coefficient varies from 23 (Sweden) to 38 (Portugal). League tables of the quintile share ratio and the Gini Coefficient are quite similar, and they are quite consistent with the regime typology. The lowest levels of inequality are found in the Social Democratic and the Conservative countries, and the highest levels of inequality are found in the Southern European and Liberal countries.

<sup>53</sup> In Table 16 I use various sources on median income. Norwegian, Danish and Swedish figures on median incomes are calculated by Förster and d'Ercole (2005: 68-71). The statistics cover the year 2000, and the age groups are 0-17, 18-65 and 66+. Statistics for other countries are derived from Eurostat.

The first proposition on how to evaluate income distribution was: Low levels of overall inequality characterize *just societies*. According to McKay (2002) there is a strong ethical basis for low levels of inequality, but there is considerable disagreement to what might constitute reasonable levels of inequality. Using my best judgment, I conclude on this classification

- Denmark, Norway, Finland and Sweden have the lowest levels of inequality
  - S80/20 = 3.3- 3.6 and Gini = 23-25
- The Netherlands and the Conservative countries also have quite low levels of inequality
  - S80/20 = 3.7- 4.4 and Gini = 26-28
- The Southern European and Liberal countries have high levels of inequality
  - S80/20 = 5.0- 7.2 and Gini = 31-38

The last part of the table explores inequality across age groups by the indicator median position, i.e. *the relative median disposable income*. The median income of those in different age groups is a standard indicator in studies on income distribution. In fact, it is the only cross-country indicator divided by age that tries to cover the whole spectre of income distributions. This is in stark contrast to the wide range of indicators on poverty and social exclusion. The probable reason, for such variations in the number of cross-country indicators, is the focus on child poverty and old age poverty. It is important to note that median income does not cover every essential aspect of income distributions.

Compared to the national median, I find that adults fare better than the other age groups; the figure is 107 per cent for those between 16 and 64 years of age; 93 per cent for those 15 years or younger; and 84 per cent for those 66 years or older.

Children's median position varies from 100 per cent in Belgium and Greece to 85 per cent in Spain. The top group of children's median position includes Belgium, Denmark, Finland, Greece, Norway and Sweden. The bottom group consists of Austria, Portugal, Spain and the United Kingdom.

Compared to the national median income, the adult percentage of disposable income is highest in the United Kingdom with 113 per cent. The lowest figures are 104 per cent. One might also divide between adult groups: In all countries except Ireland, the richest age groups are individuals from 41 to 64 (Eurostat 2006). In stark contrast, 18 to 25 year-olds are much poorer. This age group has experienced a 5 percentage point decrease in income in the 1990s because of delayed entry into the labour market brought about by longer education and unemployment (Förster 2000).

The median position of the elderly varies from 66 per cent in Ireland to 97 per cent in the Netherlands and Luxembourg. The median position is lower for those over 75 years of age compared to those between 65 and 74 years. In the last decade, the latter group has benefited from changes in the income distribution among the elderly (ibid.).

I proposed that *just societies* were characterized by low levels of inequalities between children, adults and old people. It is difficult to say what might constitute reasonable levels of inequality, but it is still quite easy to categorize countries:

- Low levels of inequalities are found in Germany, Luxembourg, Italy, the Netherlands and France
- Medium levels of inequalities are found in Belgium, Greece, Denmark, Finland, Sweden, Spain, Austria and Norway
- High levels of inequalities are found in Ireland and the United Kingdom.

The figures on median positions may also be used to indicate the positions of children, adults and the elderly. They show that those between 16 and 64 years of age have the best positions in all countries. There are, on the other hand, cross-country variations with regard to the positions of children and the elderly:

- In Norway, Denmark, Finland, Sweden, Ireland, Belgium and Greece, children are much better off compared to old people.
- In Austria, the United Kingdom, France and Portugal, children are somewhat better off compared to the elderly.
- In Germany, Luxembourg, the Netherlands, Italy and Spain, old people are somewhat better off compared to children.

It seems that adults are very well off, whilst the elderly has a median position below that of children in 11 of 16 countries. One could interpret this as proof that children fare reasonably well compared to the elderly. Such an interpretation might be mistaken. The EU-scale<sup>54</sup> judges the income needs of large(r) households quite low, and thereby grants children a higher median income than other parametric scales (OECD scale). One should also be aware that savings and assets, more common among the elderly compared to families with children, are excluded from the income concept used.

In the Children's Welfare project (Cost Action 19), the Norwegian group made a special request to Statistics Norway of data on pre- and post-tax income distribution for two time periods (1990 and 2000) organized according to categories of age (Statistics

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<sup>54</sup> The square root scale is used for Norway, Denmark and Sweden, and it is quite similar to the EU-scale.

Norway 2003). I will present some figures that may illustrate the importance of equivalence scales and savings and assets (For more on in-depth analysis, see the Norwegian chapter in Jensen et al. 2004).

As commented upon, the choice of equivalence scales is important for figures on mean or median income. Compared to the EU-scale, the OECD scale would have shown figures with better median positions of the old and lower median positions of children. Unfortunately, I do not have access to data that enables comparisons of results for all countries, but some Norwegian examples from the year 2000 illustrate deviations. Compared to the EU-scale, the mean position of the elderly is 6 percentage points higher when the OECD scale is used, whilst the mean position of children is 8 percentage points lower when the OECD scale is used (ibid.):

- The mean income of those 67 years or older is 80 per cent of the national mean income using the OECD scale and 74 per cent when employing the EU-scale.
- The mean income of those up to 17 years of age is 90 per cent of the national mean using the OECD scale and 98 per cent when employing the EU-scale

The other part is that “disposable income” excludes variations in savings and assets. The effects of these components can also be illustrated by Norwegian examples. The inclusion of interest expenses and housing benefits increases the mean position of old people by 5 percentage points and reduces children’s mean position by 4 points (ibid.):

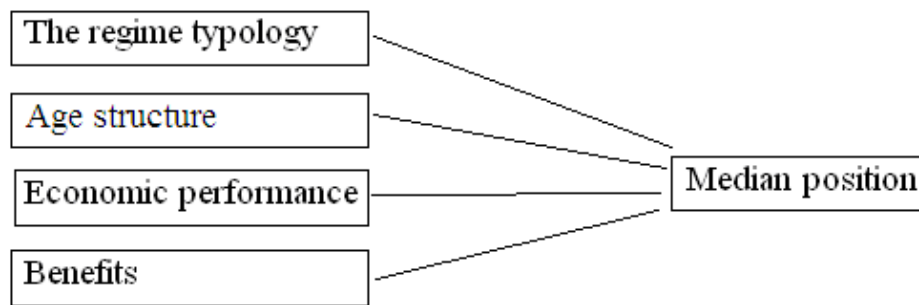
- The mean household income (pre-tax) of those 67 years or older is 55 per cent of the national mean income before taking into account interest expenses and housing benefits, and 60 per cent when they are accounted for.
- The mean household income (pre-tax) of those up to 17 years of age is 117 per cent of the national mean income before taking into account interest expenses and housing benefits, and 113 per cent when they are accounted for.

Income statistics should be interpreted carefully. In this case the availability of data limits the analysis since I am unable to run tests of sensitivity.

The next section continues to explore median positions. It investigates possible explanations to cross-country differences in the median positions of children and the elderly.

### 5.1.2 Explanations of median positions (children and the elderly)

The dependent variables in this section are the relative median positions of children and the elderly. To shed some light on cross-country differences, I present four explanatory variables; welfare regimes, economic performance, the age structure and social benefits. The original models of median positions are presented in Figure 5.



**Figure 5:** Explanations to median positions (children and the elderly)

The choices of explanatory variables have been dealt with in Chapters 3 and 4. I am only going to mention the features of the variables and results from initial tests.

The main explanatory variable is the welfare regime typology. Esping-Andersen (1990) separates between the Liberal, the Conservative and the Social Democratic regimes, and Ferrera (1996) accounts for the Southern European regime. Initial tests show no apparent division on median positions for the young and the old between welfare regimes. Controlling for other variables there might be variations. In the regression model I include the Social Democratic, the Liberal and the Conservative regimes. The Southern European regime is the reference category.

The second explanatory dimension is the age structure. In Chapter 4 I found that countries with a larger share of old people spent more on old-age benefits compared to countries with a smaller share of old people, whilst the share of children did not affect the amount spent on family and child benefits. Based on initial tests, I expect that a rise in the share of old people should matter positively to the median position of those in old age, whilst a rise in the share of children does not necessarily has the same impact.

The third dimension is the level of economic performance. My indicator of economic performance is GDP per capita. Initial tests indicate that a rise in GDP per capita has a positive effect on children's median position and a negative effect on the median position of those in old age.

The final explanatory dimension is public spending, here defined as the size of social benefits provided for families with children and the old. My indicators are Old-age benefits in PPP per inhabitant and Family and child benefits in PPP per inhabitant. In Chapter 4 I found that there were vast differences in spending on old-age benefits and family and child benefits. Preliminary tests of correlations show that the size of public transfers could account for much of the diversity in median incomes. It is expected that variations in size should matter more for the median income of old people, as public policies provides “far greater benefits to the elderly” than to children and their families (Preston 1984; Folbre 1994; Jensen et al. 2004).<sup>55</sup>

### **Children’s median position**

In the original model on variations in children’s median position, I included six explanatory variables: *Social Democratic*, *Liberal*, *Conservative*, *GDP per capita*, *Share of children in the population* and *Family and child benefits*. This model is adjusted. First, *Family and child benefits* broke with the assumption about linearity. The solution is to introduce a squared variable of Family and child benefits. Second, GDP per capita and the Share of children in the population had negative impacts on the explanatory power of the model. For this reason I chose to exclude these variables in the final model. Third, in attempt to pull in outliers and reduce skewness in errors, I transformed the dependent variable Children’s median position. I found that the natural logarithm (base e), gave the best result. In the final model I am left with these variables; Social Democratic, Liberal, Conservative, Family and child benefits and Family and child benefits<sup>2</sup>.

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<sup>55</sup> It is important to note that I do not separate between spending in cash and kind in the models presented. The division in cash and kind is seen as a feature separating different regimes. The share of old-age benefits in cash and kind is very similar in the countries examined, whilst the share of family and child benefits in cash and kind are somewhat different in the countries examined. In Appendices D and E I show regression models with only “cash” benefits. These models present quite similar results as those seen in Table 16 and 17 with regard to the importance of different variables.



**Table 16:** Regression analysis of the median position of children (2000-01)

	Model 1		Model 2	
	B	SE	B	SE
(Constant)	4.44 ***	0.060	4.43 ***	0.04
Family and child benefits	0.00025 **	0.0001	0.00035 *	0.00017
(Family and child benefits) <sup>2</sup>	-0.00000012 **	0.0000	-0.00000016 *	0.00000
Social Democratic			-0.026	0.06
Liberal			-0.090	0.06
Conservative			-0.051	0.06
<b>Adjusted R<sup>2</sup></b>	<b>0.23</b>		<b>0.26</b>	

Reference category: Southern European regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

Explained variance,  $R^2$ , is a measure on how well defined the regression model is. The adjusted  $R^2$  in the final model is 0.26. This result tells that the model explains little of the variance in children's median position. I have tried more complex models, but other variables were irrelevant (GDP per capita and Share of children).

The chosen decision rule is to reject  $H_0$  and believe  $H_1$  if  $p < 0.05$  (Hamilton 1992). I find that none of the explanation variables obtains a p-value less than 0.05, although the variables Family and child benefits are close to this significance level.

Family and child benefits explain most of the variations. I found a negative coefficient of Family and child benefits<sup>2</sup> and a positive coefficient of Family and child benefits. This implies that for low levels of benefits there is a positive correlation with median position, and for higher levels of benefits there is a negative correlation. Given the Social Democratic regime, these are the estimates for different levels of benefits: Low (300 PPP) = 89, Medium (650 PPP) = 96 and High (1000 PPP) = 99.

The regime typology adds very little to explain differences in median income. Controlling for Family and child benefits, the Southern European regime yield slightly better median positions compared to the other regimes; 9 per cent higher than the Conservative, 5 per cent higher than the Liberal, and 3 per cent higher than the Social Democratic.

Tests of the premises to the final model are presented in Appendix D. These tests show problems with a non-normal distribution of errors, outliers and influential cases. A sensitivity test with weighted cases (Robust regression) shows somewhat different results (the benefit variables are significant). There is no doubt that this is a poor model.

### Old people's median position

The original model on old people's median position included these x-variables: *Social Democratic*, *Liberal*, *Conservative*, *GDP per capita*, *Share of old people in the population* and *Old-age benefits*. The original model is adjusted. First, GDP per capita was excluded due to its negative impact on the explanatory power of the model. Second, to cope with non-linearity, I introduced a squared variable of Old-age benefits. In the final model these variables are included: *Social Democratic*, *Liberal*, *Conservative*, *Share of old people in the population*, *Old-age benefits* and  $(Old-age\ benefits)^2$ .

**Table 17:** Regression analysis of the median position of the elderly (2000-01)

	Model 1		Model 2	
	B	SE	B	SE
(Constant)	85.8 ***	4.2	79.0 **	31.3
Social Democratic	-5.2	5.6	-14.5	9.4
Liberal	-12.8	7.2	-14.4	10.2
Conservative	3.3	5.6	-4.8	8.3
Old age benefits in PPP			0.031	0.02
$(Old\ age\ benefits\ in\ PPP)^2$			-0.0000051	0.00
Share of old people			-1.9	2.2
<b>Adjusted R<sup>2</sup></b>	<b>0.17</b>		<b>0.18</b>	

Reference category: Southern European regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

The adjusted  $R^2$  is 0.18, and this tells that the model has little explanatory power. This is also demonstrated by the mere fact that none of the variables are close to significance at the 0.05-level. Still, the welfare regime variables have much more explanatory power ( $R^2 = 0.17$ ) compared to the benefit variables and share of old people in the population.

It seems that the relative median position of old people is better in the Southern European and Conservative countries compared to the Liberal and Social democratic countries. From model 1 to model 2, the impact of the Social Democratic countries increases as new variables are introduced. I use the final model to estimate effects of regimes. Given averages on other variables (Benefits = 2400 PPP and Share of population = 17), the final model produces these estimates: Southern European = 92; Conservative = 87; Social Democratic and Liberal = 79.

The other variables in the final model are less relevant. Increases in old-age benefits in PPP per inhabitant seems to give higher median income until very high spending, and an increase in the share of old people seems to reduce the median income.

The effects are demonstrated by calculations in the final model. Given the Southern European regime and a share of 17 per cent old people, these are the estimates for different levels of benefits: Low (2000 PPP) = 89 and High (3000 PPP) = 94. Given the Southern European regime and benefits at 2400 PPP, these are the estimates for different shares of old people: Low (14 per cent) = 97 and High (17 per cent) = 93.

The regression model is poorly specified, and this is further demonstrated in tests of premises to the final model. There are problems with non-normally distributed errors and influential cases, and Robust regression provides quite different results.

### **Comparison of models**

There is no point in discussing results from regression analyses of “median positions” to much extent. Both models were poorly specified, showed little explanatory power, there were obvious problems with the assumptions of OLS analysis, and Robust regression gave somewhat different results. These important points question the predicted estimates. In the model on children’s median position, I found an indication that family and child benefits mattered. According to the model on old people’s median position, the regime typology seemed to have some relevance.

One reason for these poor results might be that “relative median position” is a poor indicator of cross-country differences. An absolute indicator of median position (median income in PPP) could have been better suited for cross-country analysis.

For Rawls (1999), equality is the basic principle of justice. But he is willing to accept social and economic inequalities if they benefit the least advantaged more than any other group. The difference principle provides a chance to evaluate existing income distributions from the position of the least advantaged, and in the next section I will to investigate poverty relative poverty. There is a wide range of indicators on poverty and social exclusion divided by age, and this is in stark contrast to the deficiency of indicators covering the whole spectre of income distributions divided by age groups.

## 5.2 Poverty between age groups

According to the difference principle, basic and essential needs should be granted all citizens in a society. The difference principle states that any inequality is unjust except insofar as it is a necessary means of improving the position of the least well off.

One criticism levelled at the difference principle, is the degree of randomness in identifying the least advantaged class of people. Rawls (1999) refers to alternative possibilities. One is to choose a particular social position, the unskilled worker, and propose that their mean or median income is the cut-off point. The other possibility is this proposition: Those falling more than a certain distance behind typical incomes in the society they live in, are regarded as the least well off. I adopt Rawls' second proposition, and in studies of affluent societies this is typically referred to as *relative poverty*. Relative poverty is the most common indicator of well-being in modern societies (Preston 1984).

The difference principle provides the following propositions on evaluations of income distributions: a) *Just societies* are characterized by low levels of total poverty; and b) *just societies* are characterized by low levels of poverty across age groups. Over the past decades, the European Union has emphasized the need for reducing poverty rates. Previous empirical research has shown that poverty rates are still considerable.

Relative poverty measures are widely used as indicators of poverty and social exclusion, but such measures are also criticized. Sometimes relative poverty measures are wrongly criticized.<sup>56</sup> At other times shortcomings are important.

First, poverty measures include only money income and neglect many in-kind transfers. Furthermore, the impact of low income depends on the availability of personal savings, as well as financial assistance from family and friends. *Disposable income* does not account for variations in savings and assets, and by this it might “overestimate” old age poverty and “underestimate” child poverty: Whilst households with children are those with the highest level of loans and the highest burden of debt, households with old people more often have positive wealth.

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<sup>56</sup> One argument is that relative poverty is a measure of the “general” inequality. It is not. If incomes above the median rise and those below do not, then inequality would increase, but relative poverty would remain the same. Another point is that some people believe relative poverty indicates that poverty will always exist as long as there is economic inequality. They are misguided. It is possible to have an unequal distribution in which no one have less than 40 or 50 or even 60 per cent of the median income.

Second, statistics on poverty are adjusted to take into account variations in both the size and composition of the household. The choice of equivalence scale affects the composition of the poor. Compared to the OECD scale, my choice of the EU-scale gives higher poverty rates for those in old age and lower child poverty rates. On the other hand, equivalence scales (and poverty thresholds) are relatively robust with a view to cross-country comparisons of poverty rates.

Third, there are apparent differences in poverty lines across countries. If a poverty line was set for the whole EU-15 region, relative poverty would almost not exist in Luxembourg and include half of the population in Portugal (least wealthy).

### **5.2.1 Observed poverty rates in 16 countries**

The impact of low income depends on the persistence and magnitude of low income. To cope with this, I distinguish between short-term and persistent poverty and different cut-off points. The least advantaged people are identified by four measures of relative income poverty.

- *At-risk-of poverty*: Poverty line at 60 per cent of the median income in one year.
- *Poverty*: Poverty line at 50 per cent of the median income in one year.
- *Persistent poverty*: Poverty line at 60 per cent of the median income in the current and in at least two of the preceding three years.
- *At-risk-of poverty gap*: Gives the difference, in percentage points, between the poverty line set at 60 per cent of the median income and the median equivalised income of people below the 60 per cent line.

Table 18 provides a lot of information. On each measure I begin with some general comments on each measure and then comment on each country. In the final part, I group countries according to their levels of relative poverty in different age groups.

**Table 18:** Indicators of the situation of those worst-off, by age; at-risk of poverty (60 % of the median income in one year) (2004), poverty (50 % of the median income in one year) (2001), persistent poverty (60 per cent of the median income the current year and in at least two of the preceding three years) (2001) and relative poverty gap with reference to the 60 per cent of median income line (2004)

Measurement	Poverty rates using two thresholds								In persistent poverty rate				At-risk-of poverty gap			
Cut-off point	Below 60 per cent of the median income (2004)				Below 50 per cent of the median income (2001)				Below 60 per cent of the median income (2001)				Below 60 per cent of the median income (2004)			
Age-group	Total	0-15	16-64	65+	Total	0-15	16-64	65+	Total	0-15	16-64	65+	Total	0-15	16-64	65+
Mean all countries	15	17	14	20	9	11	8	12	10	11	8	15	21	20	24	15
Median all countries	14	18	13	17	8	9	8	11	9	11	8	15	20	19	24	16
Social Democratic																
Denmark	11	9	10	17	6	-	-	-	6	3	4	18	19	19	24	8
Finland	11	10	10	17	5	2''	6''	6''	6	4	5	12	14	14	16	9
Netherlands	12	18	11	7	7''''	7'	6'	4'	6	11	5	3	20''''	18''''	22''''	7''''
Norway	11	8	10	19	5	6	-	-	9	6	-	-	18	14	26	11
Sweden	11	11	10	14	6	-	-	-	-	-	-	-	17	13	26	13
Liberal																
Ireland	21	22	17	40	11	18	12	26	13	15	10	31	20	24	22	19
UK	18	22	15	24	10''''	18	9''	12	11''	19''	7''	15''	20''''	17''''	23''''	18''''
Conservative																
Austria	13	15	11	17	7	7	5	11	7	7	5	18	20	18	20	21
Belgium	15	17	13	21	9	5	5	11	7	6	5	17	23	22	24	18
France	14	14	13	16	7	8''	8''	9''	9''	10''	7''	13''	19	19	22	11
Germany	16	20	14	15	10	6''	6''	5''	9	11	8	13	25	31	25	19
Luxembourg	11	18	11	6	6	9	6	4	9	13	8	5	17	15	19	14
Southern European																
Greece	20	20	18	28	13	13	12	23	14	10	11	26	25	19	25	26
Italy	19	26	18	16	12	17	13	10	13	18	12	10	25	28	28	13
Portugal	21	23	18	29	14	16	10	19	15	22	11	24	26	22	29	18
Spain	20	24	17	30	13	18	12	11	10	16	9	11	25	29	27	21

Sources: Eurostat 2006; 2007, Statistics Norway 2005. ' = 1999, '' = 2000, ''' = 2001, '''' = 2003

The first part of the table shows the indicator *At-risk-of poverty*, defined as poverty rates in one year using a threshold of 60 per cent below the median income. The mean poverty rate for all countries is 15 per cent and the median is 14. Using the mean, a division by age shows that the risk is highest for the elderly (20 per cent) followed by children (17 per cent) and lowest for adults (14 per cent). There are obvious cross-country differences. For the whole population, *At-risk-of poverty* rates vary from 11 (Nordics) to 21 per cent (Ireland, Portugal). Child poverty varies from 8 (Norway) to 26 per cent (Italy), adult poverty rates vary from 10 (Nordics) to 18 per cent (Southern Europe), and old age poverty rates vary from 6 (Luxembourg) to 40 per cent (Ireland).

The next part shows the indicator *Poverty*, defined as poverty rates in one year using a threshold of 50 per cent below the median income. The mean for all countries is 9 per cent poverty (median at 8). The levels of child and old age poverty are about the same (11-12 per cent) and adult poverty rates are lower (8). Poverty rates vary across countries. For the whole population poverty rates vary from 5 (Finland, Norway) to 14 per cent (Portugal), for children from 2 (Finland) to 18 per cent (Liberal countries and Spain), for adults from 5 (Austria, Belgium) to 13 per cent (Italy); and for the elderly poverty rates vary from 4 (the Netherlands, Luxembourg) to 26 per cent (Ireland).

The third part of the table investigates *Persistent at-risk-of poverty*, defined as the share of people with an equivalized disposable income below 60 per cent of the median income in the current year and in at least two of the preceding three years. On average, 10 per cent in all countries are considered long-term poor (median at 9). The risk of persistent poverty is lowest for adults (8 per cent) and children (9) and highest for the elderly (15). There are cross-country variations: For the whole population from 6 (Denmark, Finland and the Netherlands) to 15 per cent (Portugal); for children from 3 (Denmark) to 22 per cent (Portugal); for adults from 4 (Denmark) to 12 per cent (Italy); and for the elderly from 3 (the Netherlands) to 31 per cent (Ireland).

The final indicator is *At-risk-of poverty gap*. It gives the difference, between the median equivalized incomes of people below the 60 per cent of median income line and the poverty line at 60 per cent of the median income, in percentage points. The mean poverty gap is 21 percentage points for the general population and the median is 20 per cent. The poverty gap is smaller among old people (15 percentage points) compared to children (20) and adults (24). There are substantial cross-country differences: For the

whole population from 14 (Finland) to 26 percentage points (Portugal); for children from 13 (Sweden) to 31 percentage points (Germany); for adults from 16 (Finland) to 29 percentage points (Italy); and for the elderly from 7 (the Netherlands) to 26 percentage points (Greece).

Danish poverty rates increase with age. Comparatively speaking, Denmark has very low poverty rates for its general population, for children and for adults. Old age poverty rates are below the EU-15 average. Danish poverty gaps are low for children and old people, but higher for adults. Since the 1980s, poverty rates for all age groups have declined (Förster 2000).

Poverty rates in Finland began to decrease steadily and continuously in the 1960s (Alanen et al. 2004). They have stabilized at a low level since the mid 1990s. Two groups, the elderly and single parents, have benefited from Finland's increased prosperity, whilst poverty rates increased for young people due to an expansion of education (Förster 2000). Current Finnish poverty rates increase with age, but they are comparatively low for all age groups.

Since the mid-1990s, child poverty rates have increased somewhat in the Netherlands. The risk of adult and old age poverty has, on the other hand, decreased in the same period (Eurostat 2006). Current poverty rates for the whole population are comparatively low, and the risk of low income decreases radically with age.

Norway enjoys a low risk of poverty for the entire population, and for children and for adults. Norwegian poverty rates increase with age, and compared to other countries the level of old age poverty is medium. Compared to the 1980s, child and old age poverty rates have decreased.

In Sweden, the intensity of poverty is about the same as in the early 1980s (Förster 2000). Old age poverty rates have decreased, whilst the level of poverty has increased in younger age groups. The risk of poverty is highest among the elderly. In a comparative perspective, poverty rates for all age groups are low.

Ireland has the highest short-term poverty rates of all countries examined. When I compare poverty rates across age groups, a distinct pattern emerges both for short-term and persistent poverty thresholds: Adults enjoy lower poverty rates than children and the elderly. The 1980s was a bleak period for children as the gap between child and



adult poverty increased (Devine et al. 2004). In the early 1990s, child poverty went down, but in the last half of the 1990s child poverty increased (Eurostat 2006).

The United Kingdom experienced a huge upsurge in child poverty in the 1980s, inspiring several anti-poverty policies to be adopted in the 1990s (Mayhew et al. 2004). Still, child poverty continued to rise until it peaked and went down from 1998. Current data show that the United Kingdom has comparatively high poverty rates for the whole population. Divided by age, children run the highest risk of living in poverty, followed by the elderly, and then by adults.

In Austria, total poverty rates are medium. In the past decade, neither child nor adult rates of poverty have changed much, whilst it has become more likely for an older person to be considered at-risk-of poverty (Eurostat 2006). Results for different indicators of poverty give somewhat varying patterns. The trend seems to be that older people run the highest risk of being poor, followed by children and then by adults.

Belgium has experienced a decline in poverty rates over the last decade, and this is most clearly visible in the two younger age groups. According to Eurostat statistics (2006), child poverty went down by four percentage points in the late 1990s. My data shows that old people face the highest threat of short- and long-term poverty.

Overall, the intensity of relative income poverty has decreased in France in the last decade. Divided by age, old age poverty rates have decreased, whilst poverty rates have remained stable in the younger age groups (ibid.). There are only small differences in short-term poverty between age groups, while adults fare better when it comes to persistent poverty. I find that old people are the most likely to experience poverty.

In the mid-1990s, German researchers pointed out a shift in vulnerable age groups: In 1984, the relative poverty risk for children and young people was below that of the elderly, while in 1994 the reverse was the case (Förster 2000). In the past decade, old age poverty rates have continued to decrease, whilst poverty rates have increased among younger age groups. Current figures show that children are more likely to experience short-term poverty than members of older age groups.

In terms of all three poverty indicators, Luxembourg has one of the lowest levels of poverty for the general population. Poverty rates decrease with age, and the old have an especially low risk of poverty. In the past decade, child and old age poverty rates have decreased somewhat, whilst adult poverty rates have been stable (Eurostat 2006).

Greece has the next highest total short-term poverty rates, even if the country has experienced a reduction since the mid-1990s (ibid.). Poverty rates increase with age, but poverty rates are comparatively high for all age groups.

Since the 1980s, relative poverty has increased significantly in Italy. Much of this increase is due to a rise in child poverty rates, and a smaller increase in poverty among working-age adults (Förster 2000). Compared to other countries, current poverty rates are high for children and adults and medium for those in old age.

In Portugal, poverty among old people has been significantly reduced since the mid 1990s, while the level of child poverty has remained the same. Total poverty rates are comparatively high, with especially high poverty rates for the young and the old.

The last country is Spain. Their poverty rates have not changed much since the mid-1990s, although the position of the young and the old has become worse (Eurostat 2006). Total poverty rates are high for all age groups, but poverty decreases with age.

This presentation of country-specific poverty rates is followed by two cross-country comparisons. My first investigation deals with the position of different age groups in the countries up for examination.

- Group 1: *Poverty rates increase with age* in Norway, Denmark, Sweden, Finland, Belgium and Greece (children and adults are better off than old people).
- Group 2: *Poverty rates decrease with age* in Luxembourg, the Netherlands and Italy (old people are better off than adults, adults are better off than children).
- Group 3: *Divided by age, poverty rates have a U-formed pattern* in Ireland, the United Kingdom, Austria, Portugal and Spain (adult poverty rates are lowest). In France and Germany differences between age groups are less obvious.

As for the analysis on median position (Section 5.1.1), it seems that adults are very well off, whilst children fare reasonably well in most countries compared to the elderly. This conclusion is “robust” in the sense that I have included four different measures of poverty. But the conclusion is not “robust” considering the probable impacts of excluded components of disposable income and the choice of equivalence scale.

The choice of equivalence scale is critical to comparisons of relative poverty in different age groups. Statistically, the EU-scale and its economies of scale and child-adult ratio, provides low rates of child poverty and high rates of old age poverty. It could be argued that more child poverty may be hidden behind the “underestimation” concerning children’s needs and demands.

The exclusion of savings and assets is also critical. Whilst households with children tend to have high levels of loans, households with elderly people more often have positive wealth. Yet again, this might “overestimate” old age poverty and “underestimate” child poverty. On the other hand, the impact of poverty also depends on available “safety nets”. In Norway, young people (<30 years) and single parents more often claim that family and friends will provide financial assistance in comparison to the elderly (60+) (Halvorsen 2002). In addition, poverty measures neglects many in-kind transfers, like child-care.

The second investigation is more important. Distributive justice expressed as low levels of poverty for all groups, is best evaluated in a cross-country examination of the relative poverty rate for each age group. It is also proven that equivalence scales are relatively robust with a view to cross-country comparisons of total poverty rates and rates for specific age groups.<sup>57</sup> In my interpretation of the difference principle, I described the *just society* as one with low levels of poverty in all age groups. Various countries score quite different according to this “tough” measure of justice.

- *Low poverty rates for all age groups:* Finland, France, Sweden and the Netherlands.
- *Low poverty rates for two age groups and a medium rate for one age group:* In Austria, Belgium, Denmark and Norway, poverty rates for children and adults are low and old age poverty rates are medium; and Germany and Luxembourg have low adult and old age poverty rates and medium child poverty rates.
- *High poverty rates for one age group and medium rates for two age groups:* In the United Kingdom, adult and old age poverty rates are medium and child poverty high.
- *High poverty rates for two age groups and medium rates for one age group:* In Greece, poverty rates for adults and the elderly are high and child poverty medium; and Italy and Spain have high poverty rates for children and adults and medium old age poverty.
- *High poverty rates for all age groups:* Ireland and Portugal.

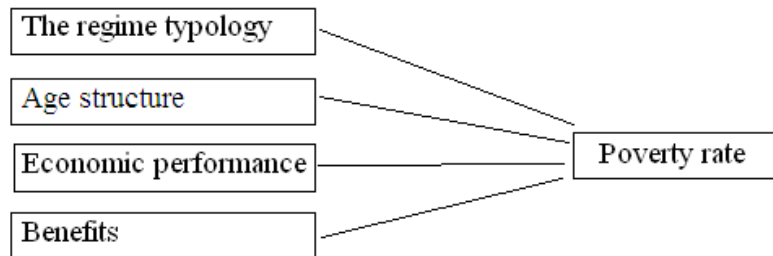
The general picture is that the Social Democratic and Conservative regimes have lower poverty rates compared to the Southern European and Liberal regimes. In Section 5.2.2 I explore if the regime typology is a good explanatory dimension of cross-country differences with regard to child and old age poverty rates. This time I also control for other dimensions.

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<sup>57</sup> Analyses of child poverty in different countries by use of the OECD scale and the EU-scale would yield comparable “pictures”. In other words, the levels of child poverty would depend on the choice of scale, but the league table of nations would be quite similar.

### 5.2.2 Explanations of child and old age poverty rates

I was unsuccessful in my attempts to explain variations in the median income of children and old people (Section 5.1). Hopefully, I will explain more of the variations in child and old age poverty rates. The regression model is illustrated in the Figure 6.



**Figure 6:** Explanations of poverty rates (children and the old)

The chosen indicator of child and old age poverty is *At-risk of poverty*. This indicator sets the cut-off point at 60 per cent of the median income in one year. I choose this indicator since there is a development towards this being an accepted definition of “low income” at the level of the European Union (European Commission 2003).

The first explanatory dimension is the welfare regime typology. The table in Section 5.2.1 shows that child poverty rates vary between the different regimes: The mean is 11 per cent in the Social Democratic regime, 17 per cent in the Conservative regime, 22 per cent in the Liberal regime and 23 per cent in the Southern European regime. I also find substantial variations in old age poverty rates: The mean is lowest in the Social Democratic and the Conservative regimes (15 per cent), followed by the Southern European regime (26 per cent), and highest in the Liberal regime (32 per cent). In the model on child poverty, the *Social Democratic*, *Conservative* and *Liberal regimes* are included in the model, and the *Southern European regime* is reference category. In the model on old age poverty, the *Liberal regime* is the reference category.

The second explanatory dimension is the age structure. Since the 1980s, the share of older people has increased and the risk of old age poverty has decreased. For the child group, the share of children has decreased whilst the risk of poverty has increased (Jurczyk et al. 2004). The indicators of the age structure are *The share of children in the population* and *The share of old people in the population*. Based on preliminary tests of bivariate correlations, I expect that old age poverty rates decrease as the share of elderly people increases. I do not expect that the share of children has the same explanatory power on child poverty rates.

The third dimension is the level of economic performance. My indicator of economic performance is GDP per capita. Initial tests indicate that old age poverty and child poverty decreases as GDP per capita increases.

The fourth explanation to differences in poverty rates is public spending. The chosen indicators are *Benefits for families and children in PPP per inhabitant* and *Old-age benefits in PPP per inhabitant*. Protecting the vulnerable is one of the normative cornerstones of the welfare state, but efforts to reduce poverty rates vary a great deal across countries. Unicef (2000; 2005) finds that higher government spending on family and social benefits is clearly associated with lower child poverty rates. Bradshaw and Finch (2002) conclude that government policies play an important role for child poverty rates. Based on preliminary correlation tests, I expect that child poverty decreases as family and child benefits in PPP per inhabitant increases, whilst old age poverty decreases as old-age benefits in PPP per inhabitant increases.<sup>58</sup>

### Child poverty

The original model on child poverty included these x-variables: *Social Democratic*, *Conservative*, *Southern European*, *Share of children in the population*, *GDP per capita* and *Family and child benefits*. This is also the final model.

**Table 19:** Regression analysis of child poverty (2004)

	Model 1		Model 2		
	B	SE	B		SE
(Constant)	23.3 ***	1.5	33.7 ***		9.5
Social Democratic	-12.0 ***	2.0	-6.9 **		2.9
Conservative	-6.5 ***	2.0	-2.8		2.4
Liberal	-1.3	2.6	3.8		3.7
Family and child benefits			-0.0085 **		0.004
GDP per capita			0.00038 **		0.000
Share of children			-1.10		0.7
<b>Adjusted R<sup>2</sup></b>	<b>0.73</b>		<b>0.81</b>		

Reference category: Southern European regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

<sup>58</sup> It is important to note that I do not separate between spending in cash and kind in the models presented. The division in cash and kind is seen as a feature separating different regimes. In Appendices F and G I show regression models with only “cash” benefits. The most notable change with regard to child poverty is that stronger effect of the Social Democratic variable, and the positive value of the Liberal variable. With reference to old age poverty the most notable change is the stronger effect of the Social Democratic variable. The explanatory powers of the models in Appendices F and G are about the same as Tables 19 and 20.

The explained variance, adjusted  $R^2$ , increases from 0.73 in the first model to 0.81 in the final model. This is a satisfactory result. It seems that the model is neither too complex nor too simple. At the 0.05-level, these variables have a significant effect: Social Democratic, GDP per capita and Family and child benefits.

The regime typology is valuable in explaining child poverty. Other variables held constant, the Social Democratic regime has a significantly lower child poverty rate compared to the Southern European and the Liberal regime, and the Conservative regime has a significantly lower child poverty rate compared to the Liberal regime (but not to the Southern European regime). Compared to the Southern European regime, unstandardized coefficients in the final model shows; 7 percentage points lower poverty rate in the Social Democratic regime, 3 percentage points lower rate in the Conservative regime, 4 percentage points higher rate in the Liberal regime.

It must be noted that unstandardized coefficients (and standard errors) change from model 1 to model 2. With the inclusion of other variables, the estimated impacts of the Social Democratic regime and Conservative are halved, whilst the Liberal regime has turned from a negative to a positive value. This change is technically explained by the facts that other regimes, compared to the Southern European regime, have higher GDP per capita, spend more on family and child benefits, and have a higher share of children in the population.

The regression model also allows comparisons of estimated rates of child poverty in different regimes. Given an average situation (27000 GDP per capita, 600 PPP on family and child benefits, and 17 per cent children in the population), the final model produces these estimates on child poverty in different regimes: Social Democratic = 13; Conservative = 17; Southern European = 20; and Liberal = 24.

Another important variable is family and child benefits. Previous studies have proven that efficient and effective family and child benefits are important means to cope with child poverty. Poverty rates decrease as family and child benefits in PPP per inhabitant increases. Given the Social Democratic regime, 27000 GDP per capita and 17 per cent children in the population, the final model produces these estimates on child poverty at different levels of family and child benefits: Low (300 PPP) = 16; Medium (650 PPP) = 13; and High (1000 PPP) = 10.

The third significant variable is GDP per capita. The final model indicates that child poverty increases with higher GDP per capita. This is in stark contrast to the bivariate test, and the technical reason is the inclusion of control variables. There is a particular strong correlation between family and child benefits and GDP per capita. Given the Social Democratic regime, family and child benefits at 650 PPP and 17 per cent children in the population, the final model produces these estimates on child poverty at different levels of GDP per capita: Low (23000 PPP) = 11; Medium (27000 PPP) = 13; and High (33000 PPP) = 15.

The expectation that child poverty decreases as the share of children increases in the population, is not that relevant. The share of children in the population vary from 14 (Italy) to 21 per cent (Ireland). Given the Social Democratic regime, family and child benefits at 650 GDP per capita and 27000 GDP per capita, the final model produces these estimates on child poverty at different shares of the child population: Low (15 per cent) = 15; Medium (17 per cent) = 12; and High (19 per cent) = 10.

Tests of the premises to the final model are given Appendix F. These tests show that the distribution of errors is approximately normal, and there is no problem with outliers. On the other hand, there is a strong correlation between family and child benefits and GDP per capita (multicollinearity). This increases standard errors. The problem is, however, restricted to the multicollinear variables (Ringdal 2001). I have decided to keep both variables in the model due to their explanatory power.

There are also two influential cases: Luxembourg and the Netherlands. Without these two countries, the effect of GDP per capita decreases, whilst the effect of the regime typology variables increases. Also the share of children in the population yield more effect. I have also considered a weighted regression analysis. Estimates from Robust regression, show quite minor differences; the effect on family and child benefits decreases somewhat, whilst the effect on the Social Democratic variable increases. All in all, the results from Robust regression and OLS regression are quite similar. This enhances confidence in the results.

## Old age poverty

The original model on old age poverty included these x-variables: *Social Democratic*, *Conservative*, *Southern European* *Share of old people in the population*, *GDP per capita* and *Old-age benefits*. I made some adjustments to this model to cope with the assumptions of OLS regression. First, GDP per capita had a negative effect on the explanatory power of the model and was excluded. Second, to cope with non-linearity I have added a squared variable of Old-age benefits. The final model is given below.

**Table 20:** Regression analysis of old age poverty

	Model 1		Model 2	
	B	SE	B	SE
(Constant)	63.6	11.7	41.8 **	13.3
Old-age benefits in PPP	-0.031 **	0.01	-0.031 **	0.01
Old-age benefits in PPP <sup>2</sup>	0.0000045 *	0.00	0.0000049 *	0.00
Social Democratic			-8.4 *	4.6
Conservative			-9.1 *	4.6
Southern European			-7.9	5.5
Share of old people			2.0	1.2
<b>Adjusted R<sup>2</sup></b>	<b>0.63</b>		<b>0.74</b>	

Reference category: Liberal regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

The explained variance, adjusted R<sup>2</sup>, in the final model is 0.74. This result indicates that valuable explanatory variables are included in the model, and of most importance are old-age benefits (R<sup>2</sup> = 0.64). Old-age benefits have a significant effect at the 0.05-level, whilst Old-age benefits<sup>2</sup>, the Social Democratic and Conservative regimes have significant effects at the 0.1-level.

The correlation between old-age benefits in PPP per inhabitant and old age poverty is nonlinear. Old age benefits reduce old age poverty, but at the level of 2600 PPP the line begins to level out. The effect is strongest up until 2500 PPP, and the effect is smaller from this point. The predicted turning point is 6500PPP, and then old-age benefits increase old age poverty. As seen in Chapter 4, old-age benefits vary from 830 PPP (Ireland) to 3500 (Austria), so the turning point is of less relevance.

Parameters for old-age benefits are quite similar in models 1 and 2. This enhances confidence in the results. The regression model also allows comparisons of estimated rates of child poverty in different regimes. Given the Social Democratic regime, and 16 per cent elderly people in the population, the final model produces these



estimates on old age poverty at different levels of old-age benefits: Low (2000 PPP) = 23; Medium (2500 PPP) = 18; and High (3000 PPP) = 17.

The effects of the regime typology are also relevant. Compared to the Liberal regime, the Social Democratic, Conservative and Southern European regimes have lower levels of old age poverty. The Southern European regime has a higher standard error in comparison to the Social Democratic and Conservative regimes. Given 2500 PPP on old-age benefits and 16 per cent elderly in the population, the final model produces these estimates on old age poverty in different regimes: Conservative = 17; Social Democratic = 18; Southern European = 19; and Liberal = 26.

The assumption that old age poverty decreases as the share of elderly people increases was not correct. Controlled for other variables, the relation is the opposite; old age poverty increases as the share of elderly people increases. The share of old people in the population vary from 11 (Ireland) to 19 per cent (Italy). Given 2500 PPP on old-age benefits and the Social Democratic regime, the final model produces these estimates on old age poverty at different shares of old people in the population: Low (14 per cent) = 14; Medium (16 per cent) = 18 and High (18 per cent) = 22.

Tests of the premises to the final model can be found in Appendix G. These tests show that there are no outliers and errors are approximately distributed. Tests of correlations and Tolerance show multicollinearity between Old-age benefits and Old-age benefits<sup>2</sup>. This was expected. Due to their explanatory power both variables are included in the analysis.

Austria is a particularly influential case. Austria is part of the Conservative regime, has very high spending on old-age benefits, a relatively small share of elderly persons, and comparatively low old age poverty rates. In a model without Austria, the effects of old-age benefits decreases, whilst the effects of the welfare regime typology and also the share of elderly people increases.

I have performed a sensitivity analysis with Robust regression. The results from the Robust regression give the same pattern as OLS regression. It might be noted that the adjusted  $R^2$  increases somewhat (0.76), and the effect of old-age benefits increases slightly (from -0,031 to -0,032). All in all, the test enhances confidence in the results.

### **Comparison of models**

Tests of the premises of OLS regression and Robust regression enhanced confidence in the results for both models on poverty. On child poverty, the regime typology, family and child benefits and GDP per capita showed significant effects. On old age poverty, the effect of old-age benefits was significant and the regime typology was important.

When Esping-Andersen presents his three welfare regimes, he does so with reference to their differences on the dimensions state, market and the family. Benefits levels are modest in the Liberal regime, family benefits encourage motherhood in the Conservative regime, whilst in the Southern European countries distributions strongly favour the elderly and their interests (Castles and Ferrera 1996). In the Social Democratic regime, countries are “committed to a heavy social-service burden, not only to service family needs but also to allow women too choose work rather than the household” (Esping-Andersen 1990: 28). On child poverty, the Social Democratic and Conservative regimes seem to do a better job in reducing child poverty rates compared to the Liberal and Southern European regimes. On old age poverty, it seems that the Liberal regime does less well than the other regimes.

The results for public spending were expected. First, the most important variable for variations in old age poverty was old-age benefits in PPP per inhabitant. Sgritta (1996) presents figures on the role of public transfers in removing families from poverty in 8 countries, and these figures show that income transfers function especially effective in elderly families. The overall poverty reduction rate, from pre- to post-tax, is about or more than 70 per cent in 7 of 8 countries. Second, child poverty rates decreases as family and child benefits in PPP per inhabitant increases. This is also in accordance to former studies (ibid.; Unicef 2000; 2005; Bradshaw and Finch 2002; Jensen et al. 2004).

GDP per capita was irrelevant to old age poverty rates, but mattered to child poverty. There is a positive correlation between GDP per capita and child poverty in the final regression model, and a negative correlation in the bivariate test. It must be noted that there is a strong correlation between GDP per capita and family and child benefits.

Results for the age structure were non-significant, but the trends were surprising. On old age poverty, results indicate that the share of elderly has an increasing effect. On child poverty, results indicate that the share of children has a decreasing effect. Standard errors are in both cases quite large, and these results are only indicative.

### 5.3 Equal opportunity

In examinations of equality (low levels of inequality) and the difference principle (relative poverty) the focus was on comparisons between age groups and between countries. Thus, children have been analysed as “one group”. In exploring equal opportunity, I move beyond the perspective of children as a group. In this section, I investigate economic differences between children.

John Rawls (1999) declares that place of birth and social status are matters of luck that should not unduly influence the amount of benefits received in life. He maintains that the task of distributive justice and allocation of resources is to limit the influence of luck so that goods might be distributed more fairly and to everyone’s advantage. From his point of view, primary goods are to secure equal opportunities.

Children necessarily share the material welfare of the family to which they belong. If they are born into a family in particular troubled economic circumstances, they have no way of escaping this “fate”. This is unless an adequate policy of resource distribution comes to their aid (Sgrippa 1996). Following Rawls’s argument, since the family may be barrier to equal chances, the state should intervene in those situations where parents are not able or willing to serve their child’s best interests.

Bojer (2000) pinpoints that children’s present and future capabilities could be targets of government policies. Rational agents in the hypothetical original situation would be particularly risk-averse if their own childhood were at stake, and they would consider that the well being of children is important in itself and important as conditions during childhood determines opportunities and capabilities in the life as adults. She argues that “there is no possible moral justification for economic and social inequality between children except what may be needed to secure their present and future capabilities” (ibid.: 10).

The *just society* should provide all children with equal opportunities. Primary goods are important to secure equal opportunities, and income is included among these “goods” (Rawls 1999). Most children are members of households with “enough” income and wealth, but some children do not have access to the resources enjoyed by most children. This group of children is identified as those living in income poverty. Income poverty has its shortcomings, but it would be wrong to underestimate its

relevance to important aspects of the everyday life of children and their later life as adults (Unicef 2000; Esping-Andersen and Sarasa 2002).

The relationship between child poverty and adult economic and social outcomes has been the centre for many large-scale studies. Obviously income and wealth in childhood is not a single denominator for adult outcomes, but it seems that those who were poor as children are overrepresented among poor adults (Sosialdepartementet 2002). A British study (Gregg et al. 1999) finds that children with disadvantaged backgrounds fare badly in terms of earnings and employment chances as young adults, even at the age of 33. A report from 2001 (H.M. Treasury, 2001) summarizes the main findings from different studies on children growing up in relative poverty in the United Kingdom. They make chilling reading: Poor children are more likely than their better-off peers to have low educational attainment, leave school early, have poor health, be teenage parents, come into early contact with the police, be unemployed as adults, and end up earning a relatively low wage.

I will also point to some studies on the ways child poverty affects children's lives when they are children. In a Norwegian study, Sandbæk and her colleagues (ed. 2004) explored whether there were marked differences between the every-day realities of children from low-income families compared to other children. They found both similarities and disparities between poor children and the control group. Compared to the control group, children from low-income families suffered more bullying and were more likely to have special needs, fewer low-income children participated in organized leisure activities, and a greater share of children in the low-income group stated that they lacked essential possessions and had insufficient pocket-money.

In a study from the United Kingdom, Mayhew and her fellow authors conclude that in terms of economics, there are three key areas of concern among children who live in low-income families (2004: 412-16): Opportunities to access their own autonomously controlled financial resources, through pocket money or through employment; the need to own "appropriate" clothing for peer acceptance; and the prohibitive costs of transport and its impact on personal mobility. Furthermore, some children from low-income families are concerned that their peers see them as different, and when they reveal their innermost worries they expose the impact of poverty on their self-esteem, their self-confidence, and their personal feelings of security. Some poor

children try to protect their parents from learning about the true impact that relative poverty has on their lives.

I will investigate some household characteristics that differentiate between children with regard to low income or poverty. Some of the vulnerable groups are children living in single parent households, in large households, in jobless households, in teenage families, in ethnic minority households, and in households with adults who have little formal education (Hoelscher 2004; Ytrehus 2004; Chen and Corak 2005; Bradbury et al. 2001).

**Table 21:** Risk groups and poverty (low-income); all households with dependent children (2001), single parent households (2001), households (couples) with 3+ dependent children (2001), educational attainment and unemployment (2002); jobless households with dependent children (2001) and teenage families in the lowest income quintile (1998)

	At-risk-of poverty for all households with dependent children	Single parent households	Couples with 3+ dependent children	Education attainment and unemployment rates		Jobless households with dependent children (work intensity = 0)	Share of households with teenage mothers in the lowest income quintile
				Low	High		
Mean	14	31	24	8	4	59	41
Denmark	6	12	13	6	4	33	24
Finland	6	11	5	12	5	51	29
Norway	6	-	-	3	2	-	-
Sweden	7	13	8	6	3	-	-
Austria	10	23	23	7	2	33	31
Belgium	11	25	7	10	3	73	45
Germany	12	36	21	15	5	55	54
Netherlands	15	45	17	4	2	-	78
France	16	35	24	12	5	69	51
Greece	17	37	26	7	6	31	30
Luxembourg	19	35	23	4	2	58	-
UK	19	50	30	9	2	72	53
Ireland	20	42	37	6	2	82	41
Portugal	22	39	49	4	4	75	26
Spain	22	42	34	11	8	67	35
Italy	23	23	37	9	5	64	36

Sources: Unicef 2001; European Commission 2004; Lehmann and Wirtz 2004; OECD 2004a; Bardone and Guio 2005; Eurostat 2006.

The first part of the table presents *At-risk-of poverty rates* for *All households with dependent children*. Poverty rates vary from 6 per cent (Norway, Denmark and Finland) to 23 per cent (Italy). The average poverty rate for all 16 countries is 14.

Most single parents are women (90 per cent) and in most of these households (60 per cent) there is only one child (Lehmann and Wirtz 2004). Previous empirical research has exposed that single parent households are particularly prone to experience poverty (Cowen 2000; Epland 2001a). Reasons for their vulnerability are that single parents are less likely to work than other adults, and that those who work only earn one income (Lehmann and Wirtz 2004; Bardone and Guio 2005; Förster and d'Ercole 2005).

The second part of the table tells about *At-risk-of poverty rates for Single parent households*. Single parent households include households with “single” parents and exclude single parents living with other adults (multigenerational households, remarried, cohabitating). The at-risk-of poverty rate for single parent households ranges from 11 per cent in Finland at the low end of the scale up to 50 per cent in the United Kingdom. In comparison to the mean poverty rate of 14 per cent for all households with children, the mean of single parent households is 31 per cent. In most countries, single parent households are more than twice as likely to be poor than all households with children, and in the Netherlands and Germany the multiplication factor is 3.

Previous research has shown that children with two or more siblings face a higher risk of low income compared to children in households with fewer children (Epland 2001a; Ruxton and Bennett 2002). Kuznets articulates the relation in this way:

“If families or households are grouped by their size, as measured by number of persons, the common finding is that the larger families or households show a larger income per unit. But if the family or household income is divided by the number of members, per person income is larger in the smaller families or households and smaller in the larger units.” (1982: 370).

The third part of Table 19 presents *At-risk-of poverty rates for Couples with 3 or more children*. At-risk-of poverty rates vary from 5 per cent in Finland to 49 per cent in Portugal. With the exception of Finland and Belgium, poverty rates for households with more than three children are higher than poverty rates for all households with children. The most notable differences are found in Denmark, Ireland, Austria, Germany and Portugal, in which households with many children run twice the risk of experiencing poverty compared to all households with dependent children.

Education is closely related to labour and income: Individuals with little formal education are more likely to be without work and/or have lower incomes than those

with higher educational attainment. Previous research in Norway has shown a clear drop in the risk of child poverty if parents have a university-degree (Ytrefhus 2004).

The fourth part of the table compares *Unemployment levels for people aged 25-64 with low* (below secondary school) and *high educational attainment* (tertiary). The same pattern is evident in all countries; a higher share without a job is found among those with low education compared to those with high education. The multiplication factor varies from 4 in the United Kingdom and Austria and down to 1.1 in Portugal.

Previous research has shown that employment is the most effective way to be secured against the risk of poverty (Epland 2001a; Alanen et al. 2004; Conti and Sgritta 2004; Fitzgerald 2004; Kampmann and Warming Nielsen 2004; Mayhew et al. 2004; Förster and d'Ercole 2005).<sup>59</sup> The general trend is that the lowest average equivalent disposable income is found in households with no wage-earner, then households with one worker, and highest in households with two workers.

The fifth part of the table shows *At-risk-of poverty* rates for *Households with dependent children with no wage-earner*. Only households with at least one person in working age are included (European Commission 2004). As is seen, the mean poverty rate of households with no wage-earner is 59 per cent, compared to 14 per cent among all households with dependent children. At-risk-of poverty rates vary from 33 per cent in Denmark and Austria at the lower end to 82 per cent in Ireland. It must be noted that the number of jobless households with dependent children is small; of total households, the share varies from 1 per cent (Finland) to 7 per cent (the United Kingdom).

Teenage parenthood causes concern because it is linked to deprivation and to adverse outcomes for both mother and child (Epland 2001a; Unicef 2001; Fitzgerald 2004; Mayhew et al. 2004). The main reason for this is that unemployment rates are higher for young adults than they are for older adults, and particularly high for young

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<sup>59</sup> In Denmark, children with unemployed parents experience a higher risk of poverty compared to other children (Kampmann and Warming Nielsen 2004). In Finland, approximately half of all poor children come from families with jobless adults (Alanen et al. 2004). In Sweden, the risk of poverty rates is particularly high for children living with single parents in unemployment, whilst for children living with two parents the effect of joblessness is not so severe (Förster and d'Ercole 2005). In Norway, 7 of 10 children living in poverty belong to jobless households (Epland 2001a). In Ireland, 4 of 10 children in poverty come from families where the head of the household is unemployed (Fitzgerald 2004). In the United Kingdom, poor children often live in a household with no employment or households with only one full-time worker (Mayhew et al. 2004). In the Italian case, often one full-time worker is not enough to protect children effectively against the risk of poverty (Conti and Sgritta 2004). The conclusion from the OECD report *Income distribution and poverty in selected OECD-countries* (Kammerman et al. 2003) is this: Income from labour makes the greatest contribution towards overall inequality.

parents (OECD 2004a; Eurostat 2006). Teenage pregnancies constitute less than 3 per cent of all pregnancies in most countries. The United Kingdom and Portugal stand out with high shares of teenage pregnancies to total births (6.5 and 7.5 per cent), followed by Ireland, Greece and Austria (4.4 to 5.1 per cent).

The last part of the table concerns teenage families. Unicef (2001) has analysed the disposable income in households with mothers in their 30s who had their first child when they were teenagers. The figures show that 78 per cent of Dutch women in their 30s who were teen mothers are found in households with incomes in the lowest income quintile, whereas the corresponding figure is only 24 per cent in Denmark. The mean for all countries is 41 per cent, and this shows that women who were teen mothers have a higher chance of low income compared to other women.

I will end this section with some comments on ethnic origin. The most extensive research on ethnicity and immigration is conducted in the US.<sup>60</sup> Reflections on income and ethnicity are becoming more common within the European Union (Hoelscher 2004), but comparisons of poverty rates among immigrant children are not possible due to lack of data (Avramov 2003). I provide some country-specific examples.

In Germany, the country with the highest number of foreign nationals in the EU (Eurostat 2006), there is growing concern about the standard of living among children born to immigrants and foreigners. Compared to native-born German children, child poverty is notably higher and increasing among children in households headed by non-citizens, and immigrant children tend to be found on less favourable educational tracks than native-born children (Frick and Wagner 2000; Corak et al. 2005). Such findings have also been brought to attention in France, Denmark and Norway. In France, children in families where the head of the household was a citizen of a non-EU country faced a quadrupled risk of child poverty compared to children in families where the head of the household was native born (Delors ed. 2004). In Denmark, the risk of relative poverty is markedly increased if the family has an ethnic minority background. This is due to high unemployment levels in some ethnic minority groups (Kampmann

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<sup>60</sup> According to Hernandez (2004) the interest on ethnic origin is due to the fact that one fifth of the population in the US is an immigrant/has immigrant parents; and the number of children born to immigrant families has expanded almost seven times faster than the number of children in US-born families. Hernandez finds that poverty rates among immigrant children are substantially higher than for native-born children: almost half of children in immigrant families live in crowded housing conditions; and immigrant parents are less likely to work full time compared to native parents.



and Nielsen 2004). In Norway, several reports have concluded that ethnic origin has a great impact on parents' employment status and on child poverty (Sosial- og helsedepartementet 1999; Fløtten et al. 2001; Sandbæk ed. 2004; Ytrehus 2004). Epland (2001a) found that the risk of poverty was six times higher among immigrant children than among their native-born peers. Skevik (2004) concluded that children whose parents have immigrated from Asia, Africa, Latin America and Turkey, ran the highest risk of experiencing poverty.

## 5.4 Insights from the chapter

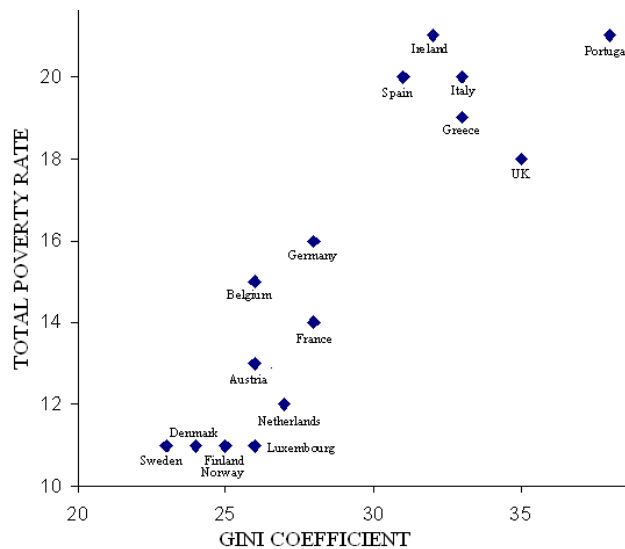
The intentions of Chapter 5 have been to investigate these research questions:

- Are there cross-country differences with regard to inequality and poverty rates for the population as a whole and between age groups (children, adults and old people)?
- Why are there differences between the countries with reference to median position and poverty rates for children and the elderly?
- What household features characterize children living at risk of poverty?

In order to answer these research questions, I have presented a range of statistics. This section summarizes the main points and clarifies links between the different results.

### 5.4.1 Just countries?

The descriptive analyses of inequality and poverty have clearly shown substantial cross-country differences. To make the evaluation of income distributions more interesting, I took on Rawls's theory (1999) and proposed that "just societies are characterized by low levels of inequality and poverty, in the whole population and between age groups". I will begin with "total" cross-country variations. The scatter plot presents the correlation between *At-risk-of poverty* (poverty) and the *Gini coefficient* (inequality).



**Figure 7:** Equality and at-risk-of poverty (2004)  
Source: Eurostat 2006.

The scatter plot illustrates that countries with high poverty rates also display high levels of inequality, whilst countries with low poverty rates also have low levels of inequality. Furthermore, cross-country differences accord to the welfare regime typology. Given the criteria of *just societies* as those presenting low levels of inequality and poverty rates, it seems that the Social Democratic and Conservative regimes are more “just” (lower levels of inequality and poverty) compared to the Liberal and Southern regimes (higher levels of inequality and poverty).

The examination of *just societies* is more complex when the part on age groups is added. The empirical analysis demonstrated that countries differ in terms of poverty rates and the median income of children, adults and the elderly. I proposed this criterion: “Just societies display low levels of poverty for all age groups and low levels of income inequalities between age groups”.

- Group 1: Finland, France, Sweden and the Netherlands have fairly low poverty rates for all age groups and a low score on inequalities between age groups.
- Group 2: Austria, Belgium, Denmark and Germany show low poverty rates for two age groups, and fairly low scores on inequalities between age groups. Luxembourg and Norway have low poverty rates for two age groups, and inequalities between age groups are medium.
- Group 3: In Italy, Greece and Spain, poverty rates for two age groups are high, whilst inequalities between age groups are fairly low. The UK has medium high poverty rates for two age groups and score high on inequalities.
- Group 4: Ireland and Portugal have high poverty rates for all age groups and high inequalities between age groups.

The research question was an easy one to answer - obviously there are cross-country differences with regard to inequality and poverty. This result is also in accordance to numerous other empirical studies.

The significance of my descriptive analysis is related to the evaluation based on my propositions of “just societies”. Low levels of inequality and poverty appeals to egalitarian theorists, the public, national governments and the EU. In that particular “political climate”, I find it of value to demonstrate cross-country variations. From a normative point of view, this analysis also points out that some countries should make it their priority to reduce income inequalities between age groups and reduce relative poverty for all age groups.

#### **5.4.2 Lessons on children and old people’s material welfare**

The descriptive analysis was followed by a multivariate analysis explaining variations in the median income and poverty rates of children and the elderly. The point was to answer this research question: *Why are there cross-country differences with regard to the median position and poverty rates of children and the elderly?* The main predictor of variations between countries was the modified welfare regime typology.

##### **Median position across countries**

The estimates from my attempts to explain “median positions” of the elderly and of children were uncertain, both regression models had little explanatory power, and the assumptions of OLS regression did not hold. The only indicator with some effect on children’s median position was family and child benefits. According to the model on old people’s median position, none of the included explanatory variables had a substantial effect.

##### **Poverty rates across countries**

I had more luck in explaining differences in child and old age poverty rates. Tests of OLS assumptions from both regression models showed that the estimates were quite reliable, and the explanatory powers of both models were high.

The regime typology had an important influence on child poverty and old age poverty: The Social Democratic and Conservative regimes had lower child poverty rates

compared to the Liberal and Southern European regimes; and the old age poverty rate in the Liberal regime was substantially higher compared to the other regimes. The effects of indicators of public spending were also significant: An increase in family and child benefits in PPP per inhabitant corresponded to a decrease in child poverty rates; and an increase in old-age benefits in PPP per inhabitant corresponded to a decrease in old age poverty rates. GDP per capita had a significant effect on child poverty, whilst the share of old people in the population seemed to matter somewhat on old age poverty rates.

### **Summary**

My hope was to explain cross-country variations in child and old age poverty rates and these age groups' median position. The multivariate analyses on median position did not work out. I am more confused about cross-country differences than I was before this study. Perhaps the main problem was the dependent variable, and that more of the variations could be explained with an "absolute measure" of median position. The multivariate analyses proved valuable with regard to child poverty and old age poverty. I have demonstrated that the welfare regime typology is an important predictor of both child and old age poverty. Furthermore, I have also been able to test the effects of the size of social benefits, economic performance and the age structure.

### **5.4.3 Moving beyond children as a group**

In analyses of inequality and poverty, I have compared children's position with adults and the elderly. The final research question departs from this comparative approach. It is about aspects differentiating between groups of children: *What household features characterize children living at risk of poverty?* In order to answer this research question, I performed descriptive bivariate analyses to illustrate poverty rates of different types of households with children.

The chief peril to children's material welfare is parental unemployment. In all countries examined, children with unemployed parents experience a higher risk of poverty compared to other children. Luckily, quite few children live in jobless households. The probability of living in a jobless household is higher for these groups; children born to immigrants, children living with providers under the age of 25, and children living with providers with low educational attainment.

Occasionally one full-time worker is not enough to protect children effectively against the risk of poverty, and in some cases two full-time workers are not enough. The probability of living in a household with providers with low income is higher for these groups; children born to immigrants, children living with young providers, and children with providers with low educational attainment.

As is seen, both parental participation in the labour market and the composition of households with children are of importance to children's risk of poverty. The final two types of households with dependent children that display high poverty rates are single parent households and households with 3 or more children.



## Part III.

# Conclusion





## 6. Conclusion

This thesis has investigated distributive justice between age groups or generations. The thesis is theoretically informed by a synchronic generation perspective and principles of distributive justice argued by John Rawls and other theorists of justice. The empirical part asks about inequalities between children and other age groups, in terms of public spending (social benefits) and opportunities to acquire goods and services (disposable income). These choices of indicators are based on former research (Preston 1984; Thomson 1991; 1996; Kangas 2000; Jensen et al. 2004; Chen and Corak 2005)

There are many “academic challenges” to an empirical enquiry of distributive justice between age groups or generations. As regards *distributive justice*, the difficulty is to convince that it is legitimate to include children in theories of distributive justice. As regards *generation*, it is important to distinguish between different approaches to the study of generational relations. I have chosen the synchronic approach, and argued in favour of comparing the material welfare of contemporary age groups or generations. With regard to an *empirical enquiry* there are numerous choices to be made; these choices must be defended and their impacts on the results should be presented.

The first part of this is a summary of the answers to the research questions. Three research questions dealt with public transfers and three others dealt with distributions of income. In the second part, I comment upon some important themes discussed in the thesis.

### 6.1 Summary of research questions

I presented six research questions in the Introduction, and this section presents the answers to these questions. In my *empirical enquiries* of public transfers and income distributions, I have had to make numerous choices. These choices have had

considerable impact on the outcomes, and they also impose limits on the kind of conclusions that can be drawn. It is important to discuss the credibility of my results and restrictions to the analyses. All results should be viewed as indicative and be cautiously interpreted.

Chapter 3 presented a range of issues to be concerned about when discussing generation or age empirically. I would like to mention three issues in particular. First, a challenge in all regression analyses is the fact that I have only 16 cases. This restricts the number of explanatory variables to be looked upon, and with few cases one must pay much attention to tests of OLS-assumptions. In particular, I compared OLS-results with results from Robust regression and results from models without influential cases.

Second, it is important to note the inconsistency between theoretical aims and empirical possibilities. The synchronic generation perspective is about comparing contemporary age groups or generations. My analyses on social benefits only compares public spending provided to “families with children” and those in old age. Even though I am unable to compare public spending on children and the old, I find that the analysis provide some insight on age-related differences (Questions 1-2)

Third, statistics on incomes are better, as equivalence scales makes it possible to divide household incomes to individual incomes. Based on available data, children are identified as those between 0 and 15 years of age, those in old age are categorized as those 65 years or older, and adults are those between 16 and 64 years of age. Income data divided by age groups are valuable for cross-comparisons, but of less value to comparisons of different age groups. In particular, the choices with regard to equivalence scale and income components are important. In the measures presented in Chapter 5, the EU-scale is used and savings and assets are excluded from the income concept. These “choices” affects the position of the elderly negatively (high poverty rates and low median position) and the position of children positively (low poverty rates and high median position). As such, the result that adults are better off than children, and children again are better off than old people, could be questioned. My attention has therefore been on cross-country comparisons and less on comparisons of the three age groups within each country (Questions 4-5).

### **Question 1: Development in age-related public spending**

Social policies affect people at different stages of their lives. My analysis of the development in age-related public spending relied on data on social benefits. I have focused on the size of such benefits, and to a lesser degree dealt with other issues, such as differences between benefits in cash and kind. It might be noted that there are differences. Given pensions, it is not surprising that elderly people are receiving most in cash. With regard to children, there is also more spending in cash than in kind. But the difference is smaller than for those in old age.

My research question was: *Has there been a pattern of growth in old-age benefits in combination with a decline in spending on family and child benefits?* To answer the research question, I performed descriptive analyses of the size of *Old-age benefits* and *Benefits for families and children* from 1980 to 2003. This investigation is similar to studies conducted by Preston (1984), Thomson (1991), Sgritta (1995) Esping-Andersen and Sarasa (2002) and Lynch (2004).

The first measure, “Constant prices in millions of Euro”, confirmed that both types of benefits had increased throughout the period. The other measure, “Share of total benefits”, confirmed that old-age benefits increased and the level of family and child benefits remained stable over the past decades. These overall findings conceal cross-country variations: Six countries increased spending on old-age benefits and decreased spending on family and child benefits; in three countries the gap between old-age benefits and family and child benefits increased; in three countries the gap between old-age benefits and family and child benefits decreased; and four countries showed no particular development.

*To conclude:* Former studies have shown increased spending on the old and a decline in spending on families with children over time (Thomson 1996; Sgritta 1996). I find an extensive growth in the funds spent on the elderly over the past decades, but spending on family and child benefits did not decline. It seems that the increasing generosity towards the elderly to a lesser degree has affected spending on family and child benefits, but it must be noted that there are cross-country differences. The fact that different indicators provided quite diverse descriptions tells that statistics should be used with caution.

## **Question 2: Explaining cross-country differences in age-related spending**

The second research question was: *Why do welfare states differ with regard to the sizes spent on old-age benefits and family and child benefits?* There are noteworthy cross-country differences in the generosity and scope of programs like “Benefits for families and children” and “Old-age benefits”. To explain such variations I employed multivariate linear regression analyses. With 16 cases I had to choose few explanatory variables, and OLS-results were compared with results from Robust regression.

The model on family and child benefits had very high explanatory power, whilst I explained somewhat less of the variations in old-age benefits. Controlling for other explanatory variables, I found that the Social Democratic and Conservative regimes spent significantly more on family and child and old-age benefits compared to the Southern European regime. The chief explanatory variable of variances in family and child benefits was GDP per capita. The most vital predictor of old-age benefits was the share of old people in the population. Furthermore, the share of single parents had a significant effect on family and child benefits, whilst GDP per capita had some influence on old-age benefits.

As regards tests of assumptions, the model on family and child benefits was least problematic. A regression model without Luxembourg (influential) reduced the effect of GDP per capita and increased the effect of the regime typology. Results from Robust regression enhanced confidence in the results. In the model on old-age benefits, I found a non-normal error distribution, and the United Kingdom was an influential case. A sensitivity test with Robust regression did, however, enhance trust in the results.

*To conclude:* Since welfare regimes pursue unlike aims with their social policy, I suggested that welfare regimes would differ as regards to the size of old age and family and child benefits. My analyses demonstrated the value of the regime typology to cross-country variations on both types of social benefits. Besides the regime typology, economic performance and family structures mattered to cross-country variations in family and child benefits, whilst the age structure (share of old people) mattered to variations in old-age benefits.

### **Question 3: Age-related spending and ageing societies**

The third research question was: *How is age-related public spending linked to the challenge of ageing societies?* To answer this question, I used regression analysis to explain cross-country differences in total fertility rates, and referred to other studies on estimates of the future size of old-age benefits and policy responses to ageing societies.

Population ageing is caused by decreased birth rate, longer life expectancy and migration. The decline in birth rates over the past century is principally responsible for ageing in Europe. I decided to explore if the generosity of family benefits had an impact on fertility rates. In the final model on variations in total fertility rates in 2004, desired fertility rates, female employment and family and child benefits in PPP per inhabitant showed significant positive effects. My tests of assumptions to the final model showed a non-normal error distribution, and Greece was an influential case. On the positive side, results from OLS-regression and Robust regression were quite similar.

My second point was that population ageing will put pressure on public finances. Whilst expenses on education are anticipated to fall with an ageing population, dramatic increases in health care and old age pensions are expected. With regard to political ageing, one particular issue is the political power of the old.

The greatest challenges of population ageing must be faced Southern European countries, Austria and Germany. Even so, all countries that were examined should adapt and respond to the anticipated negative impacts of ageing societies. Four of these responses are close linked to age-related public spending: The social investment strategy argues in favour of increased spending on family and child benefits and education; strategies to remodel pension systems includes arguments to reduce spending on old age pensions, higher retirement age, and reducing the government role in providing health care; and finally, there are some suggestions on institutional changes in voting systems to hinder old people of taking advantage through their voting power.

*To conclude:* Population ageing is understood to be one of the crucial tests of European welfare states in the 21<sup>st</sup> century. My literature studies show that the greying of Europe will put pressure on public finances and that many governments must face hard choices as regards to social policies. My multivariate analysis of fertility rates points to a link between the size of family and child benefits and the size of fertility rates. The relation between public spending and fertility rates is uncertain.

#### **Question 4: Inequality and poverty**

“Material welfare” refers to the state or condition of doing or being well with regard to possessions or goods. *Disposable income* is supposedly the best pointer for describing households and individuals’ opportunities to acquire goods and services (Canberra Group 2001), and disposable income was my choice of indicator of “material welfare”. Due to availability of data, my choice of equivalence scale was the EU-scale.

Results from comparisons of age groups in the income distribution are affected by the income concept and the choice of equivalence scale. This questions the rankings of age groups according to their position in the distribution of income. My fourth question focused on cross-country differences (and not the ranking of age groups). I performed descriptive analyses to answer this question: *Are there cross-country differences with regard to inequality and poverty rates for the population as a whole and between age groups?*

*Total levels of inequality* were investigated by two indicators. The Gini Coefficient is supposedly more sensitive to the income of the middle classes, whilst the Quintile share ratio only responds to the situation in the top and bottom quintile. Still, the correlation between the indicators was strong. My conclusion was: The Social Democratic and the Conservative regimes had substantially less inequality compared to the Liberal and Southern European regimes.

*Inequality between age groups* was explored by the indicator median position (relative median in the distribution of income). Median position is the only available statistical measure for all age groups in all countries. My calculation of differences in median position between age groups, showed that: France, Germany, Luxembourg, Italy and the Netherlands had low levels of inequalities; Austria, Belgium, Denmark, Finland, Greece, Norway, Spain and Sweden were in the middle group; and Ireland and the United Kingdom had high levels.

*Total poverty rates* were studied by different thresholds of short-term poverty (below 50 and 60 per cent of the median income in one year); persistent poverty (below 60 per cent of the median income in the current and two of the preceding three years); and “at-risk-of poverty gap” (the difference between the median incomes of people below 60 per cent of the median income compared to the poverty line). Four indicators made my analysis complicated, but I found them necessary to cope with some common

concerns on relative poverty (random cut-off points, longitude of poverty and position of the poor). Different indicators of relative poverty presented quite similar outcomes, and the conclusion was: The Social Democratic and the Conservative regimes had much lower levels of poverty compared to the Liberal and Southern European regimes.

*Poverty rates for different age groups* were studied by the same indicators of relative poverty as total poverty rates (short-term poverty below 50 and 60 per cent of the median income in one year, persistent at-risk-of poverty, and at-risk-of poverty gap). I performed cross-country comparisons by each age group and concluded that: Finland, France, Sweden and the Netherlands had comparatively low poverty rates for all age groups; the other Social Democratic and Conservative countries had low poverty rates for two age groups; whilst the Liberal and Southern European had high poverty rates for one (UK), two (Greece, Italy, Spain) or three age groups (Ireland and Portugal).

Principles of distributive justice can be employed to evaluate social and material inequalities. According to John Rawls (1999), his two principles of justice will bring about a natural tendency towards equality. Still, inequalities are justified if they are necessary to improve the position of the worst off. Based on Rawls's theory, I suggest that the just society is characterized by low levels of inequality in the total population and between age groups, as well as low poverty rates for all age groups. According to this criterion, Finland, France, Sweden and the Netherlands score very well, whilst Ireland and Portugal come out particularly inferior. Furthermore, the remaining Social Democratic and Conservative countries come close to the "top group", whilst the remaining Liberal and Southern European countries are closer to the "bottom group"

*To conclude:* There are substantial cross-country differences as regards total levels of inequality and poverty, inequalities between age groups, and the level of poverty in different age groups. Just societies are characterized by low levels of inequality in the total population and between age groups, as well as low poverty rates for all age groups. According to the discussion of just societies, I find that the Social Democratic and Conservative regimes are considerably more "just" compared to the Liberal and Southern European regimes.

### **Question 5: Explaining cross-country differences in poverty and inequality**

The fifth research question was: *Why are there cross-country differences with regard to the median position and poverty rates for children and the elderly?* I explain cross-country variations through multivariate regression analyses. The chosen indicators were *Median position* (median incomes as a percentage of the national median income) and *At-risk-of poverty* rates (below 60 per cent of the median income in one year).

Family and child benefits had some effect on children's median position, whilst the regime typology had less influence. None of the included explanatory variables had a substantial effect on old people's median family income.

The multivariate analyses proved valuable with regard to child and old age poverty. First, an increase in family and child benefits in PPP per inhabitant corresponded to a decrease in child poverty rates; and an increase in old-age benefits in PPP per inhabitant corresponded to a decrease in old age poverty rates. Second, the Liberal and Southern European regimes had substantially higher child poverty rates compared to the Social Democratic and Conservative regimes, and the old age poverty rate in the Liberal regime was substantially higher compared to the other regimes. Finally, GDP per capita had a significant effect on child poverty, whilst the share of old people in the population had some effect on old age poverty rates.

*To conclude:* I am unable to provide any explanation of cross-country variations in median positions of children and the elderly, but I am able to present explanations of cross-country differences in old age and child poverty. Since welfare regimes are based on unlike traditions and differ in their aims, I suggested that child and old age poverty rates would have different poverty rates. The most vital discovery was significant regime-variances in the levels of child poverty and old age poverty. Secondly, some countries do a better job than others in reducing poverty rates by way of family and child benefits and old-age benefits.

### **Question 6: Groups at risk of child poverty**

The final research question was: *What household features characterize children living at risk of poverty?* To sort out this question, I performed descriptive bivariate analyses of at-risk-of poverty rates in different types of households. I did also provide some country-specific on ethnic origin due to lack of comparable data.



Protecting children from income poverty is important since a wide range of evidence demonstrates that poverty affects children negatively while they are children and in their subsequent adult lives. My analyses verified that some of the main risk groups of child poverty were children living with; single parents, young parents, ethnic parents, and low educated parents. The most important determinant of child poverty was parental unemployment.

*To conclude:* In addressing the principle of equal opportunity, I chose to concentrate on children who lack access to the resources enjoyed by most of their peers. It seems that parents' participation in the labour market and the composition of the household, matter to the risk of child poverty.

## 6.2 Important themes

In a global perspective, it is common to talk about all countries examined in this thesis as “European countries” (as opposed to other geographic entities) or “industrialized countries” or “developed countries” (according to levels of development). In terms of indicators of welfare, it is obvious that the cluster of “developed countries” exhibit some degrees of commonness as opposed to the clusters of “least developed countries” and “developing countries”. As such, the exercise of comparing indicators of children's welfare in the developed countries vis-à-vis the least developed countries would present small within-group differences when compared to differences between the groups.

On the other hand, it is also true that comparisons of clusters of countries do not show the multitude of differences within clusters, i.e. differences between countries in the same cluster. In fact, one could continue to descend towards ever lower levels of analyses, and this could be worthwhile to discover new differences. This thesis points to variations between 16 developed European countries with regard to the material welfare of children, adults and the elderly. But even if my analyses show important differences between these countries, one should be aware that similarities between these countries prevail in a global perspective.

In this final section I look at a small selection of important themes discussed in the thesis. I am less concerned about cross-country variations, although I sometimes

refer to such. I begin with some considerations on distributive justice and generation. I then proceed to look at welfare states/regimes and their child-orientation. The last part is about public transfers and poverty rates and fertility rates.

### **Distributive justice and children**

Scholars familiar with the discourse on distributive justice would probably diverge in their recommendations on which theorists to include in a “best of” list. My selection of theorists of distributive justice is certainly not exhaustive, but I am still quite content with the selection of theorists. I hope that readers agree that central to the discourse on distributive justice are classic philosophers like Plato and Aristotle, utilitarian theorists like Bentham and Mill, a current giant like Rawls, his challenger Nozick, and the modern egalitarian Dworkin.

The category of children raises some difficulty, as theorists of distributive justice typically exclude children from their considerations. Still, an examination of Rawls’s theory shows that he assures children justice and that parties of the social contract are particularly concerned about insuring themselves if they end up in positions with undeveloped powers (e.g. childhood). On the perspective of children’s *needs* I argued on a balance of the economic responsibility of children between parents and public, and that it is particularly important that public authorities intervene to secure children’s present and future capabilities. In arguing for children’s *right* to distributive justice I referred to children’s co-citizenship from the perspective of the Convention on the Rights of the Child. Finally, I made some remarks on children’s contributions to society, both in the here and now (schoolwork) and with reference to future prospects (income generating work when they have completed their education).

In theoretical and empirical considerations of children and distributive justice, I found that equality, the difference principle, and equal opportunity were applicable allocation principles. These principles of distributive justice are all related to Rawls’s theory of justice as fairness (1999). This corresponds to other previous studies (Bojer 2000; Kangas 2000) that also focus on Rawls in examinations of children and distributive justice. On a general note, it is also shown that Europeans (as well as governments) regard low levels of inequality, equal opportunity and need to be important objectives for welfare state policies.

## Generation

The social studies of childhood have two pillars. One pillar is actor-oriented child research with its focus on children's agency and subjectivity. The other pillar is the structure-oriented approach to childhood. This thesis makes use of the structure oriented approach which contends that childhood is an element in the social structure, and not only a period in an individual's life-cycle. It emphasizes features common for all children, and in particular features that separates them from adults. Generational analysis in the sense of confronting the condition of children at large with the condition of adults is a quite recent development in structure-oriented childhood research.

In generation research at the societal level, one can differ between longitudinal definitions and structural definitions (Wintersberger 2000). The structure-oriented approach to childhood presents a structural understanding of generation. It links childhood, adulthood and old age to structures and processes that affect the lives and welfare of children, adults and elderly. In particular, theorists have focused on the mode of production and division of labour in the course of history (Qvortrup 1999; Wintersberger 2005; Phádraig 2007).

In the pre-modern society children were necessities; helping their parents from an early age with manual work and representing a security for old age. Thus children (as all household members) were an integrated part of the division of labour. In the modern society, children are excluded from the division of labour in the sense of work for wages. That many teenagers combine part-time work and schooling does not change the fact that children's main activity is education. Approached from an extended manner, one might still position children in a generational division of labour: A shift from classical child labour (manual activities) to school work (mental activities) is a logical shift, in the sense that universal schooling is a demand of an industrial or a capitalist or a knowledge-intensive society. As such, children take part, as they did in pre-modern societies, in the kind of activities that is dominant in the respective mode of production.

I defined childhood, adulthood and old age like this: *Childhood as a generation group* is to define "children" as all those who have not left the obligatory educational regime; *adulthood as a generation group* is to define "adults" as all those constituting the workforce (working or non-working, e.g. students, unemployed, disabled etc.); *old age as a generation group* is to define "the elderly" as all those who have retired.

In my further placing of this study of generational relations, I made clear the distinction between diachronic and synchronic approaches. A diachronic approach follows an age group or a cohort over time as they pass through various age stages. Most diachronic approaches consider childhood experiences of interest when employed to understand adult outcomes. The synchronic generation approach is another legitimate perspective and most generation or age studies are cross-sectional. A synchronic approach compares the material welfare of contemporary age groups or generations. This perspective studies childhood in the way it is experienced by children here and now, and not necessarily with reference to their future adulthood.

The theoretical chapter introduces other terms that could be applied in stead of generation. “Life stage”, “life course”, “lifespan” and “cohort” are future-oriented terms, do not focus on comparisons of co-existing age groups, and are therefore less applicable to my synchronic analysis. “Cohort” is perhaps the most interesting term, but it presents a longitudinal understanding of generation. The structure oriented approach to generation presents a structural understanding.

Although I use generation with regard to theoretical considerations, I shift to the term “age groups” in empirical examinations. I find it more appropriate to discuss “age groups” in analyses of e.g. income distributions divided by age. At the same time, it is obvious that in theoretical discussion, the term “generation” is to a greater extent associated with a shared position in society compared to “age”.

### **Empirical examinations of generation or age**

In Preston’s (1984) comparison of children and the elderly in the US, he discussed divergent paths in 20-year period with regard to public spending on children and the elderly, as well as divergent paths with regard to poverty rates. Such empirical comparisons of children, adults and the elderly are becoming common, and statistics on income distributions divided by age are presented regularly both at the national level and at the international level (e.g. poverty rates).

At the same time, there is still a long way to go. One empirical shortcoming is the problem that data on social benefits are presented on the family level. I would have preferred to know about expenditures to “children” rather than “families with children”. As such, the Eurostat data presented in Chapter 4 gives some hints on developments

with regard to age-related spending, but it is not satisfying with regard to a comparison of age groups or generations. There are country-examples of divisions of public spending between children, adults and the elderly (Toresen 2006), but in the perspective of comparing 16 different welfare states I was not capable to perform similar divisions. It could also be pointed out that social benefits only cover transfers, and says less about tax benefits.

The theoretical aim of placing children in the larger generational structure is unattainable when social policy is discussed. In statistics on income, the use of equivalence scales makes it possible to divide household incomes to individual incomes. One might question calculations of children's position in the distribution of income (e.g. child poverty or median position), as children are excluded from key economic domains such as the labour market, financial services and the property market (Ridge 2007).<sup>61</sup> Even though children themselves neither earn nor dispose of the money they are supposed to have according to the "calculations" of income data divided by age groups, such measures are still regarded to be of great value. One example is national child poverty estimates, or comparisons of child poverty across Europe, which are important statistics with regard to political debates and social policy.

According to Olk and Wintersberger (2007: 67), "the generational income distribution is better documented than most other dimensions of generational distributive justice". Still, income statistics also have their shortcomings with regard to comparisons of age groups (and in general). First, due to the importance of equivalence scales and key components of income concept, the value of comparing the position of children, adults and the elderly within the same country in one particular year is limited.<sup>62</sup> Second, the data used in international comparisons is "out of date", and is less relevant to draw lessons of current performances. The Eurostat data on poverty rates divided by age, for example, take considerable time to be processed at the national

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<sup>61</sup> This is not entirely true. Many children have a range of employment experiences (see e.g. Jensen et al. 2004). Although the combination of part-time work and schooling is quite common among older children, the main activity of most children is education (schoolwork).

<sup>62</sup> The most important inadequacy with disposable income is the exclusion of wealth. Whilst families with children usually have debts to pay off (loans on apartments and education), old people often have positive wealth. The choice of equivalence scale matters less on overall poverty rates, but it can make a big difference to the composition of the poor. The EU-scale has low weights on extra household members, in particular children (child-adult ratio), in comparison to other scales (e.g. the OECD scale). On average, children are members of larger households than old people. Compared to the OECD scale, the EU-scale increases the likelihood of old people being classified as poor and decreases the chance of child poverty.

level and then it is to be processed at a comparative level (Bradshaw 2007). The “newest” poverty data in this thesis refers, for instance, to data collected for 2004. Third, indicators like the Gini coefficient, median disposable income, and relative poverty, are all common. But they can also be questioned (see Chapter 3).

A final point is the need to develop more measures on material welfare. Child poverty is the most important indicator of children’s material welfare, and child poverty rates are recognized by the European Union as a primary indicator of Social Inclusion. But with regard to child welfare (as well as comparison between age groups), there is need for developing a larger repertoire of material welfare measures. The set of indicators on Social Inclusion by Eurostat is one admirable start, and Unicef also considers different measures of material welfare. I agree with Bradshaw (*ibid.*), that income measures might be one of more indicators of material welfare used for comparative research.

### **Welfare states and their child-orientation**

The notion of welfare regimes rests on the assumption that in the “relation between state and economy a complex of legal and organisational features are systematically interwoven” (*ibid.*: 2). According to Esping-Andersen (1990), what once were “night-watchman states, law-and-order states, militarist states” has transformed into institutions mainly preoccupied with the production and distribution of social well being. His division between Liberal, Conservative and Social Democratic regimes, combined with the Southern European regime (Ferrera 1996), has proved valuable to this thesis. To a certain extent it has provided explanations of cross-country variations with regard to the sizes of old-age benefits and family and child benefits, as well as size of relative child poverty and old age poverty. Although the figures are some years old, this empirical analysis is important. It demonstrates that a given welfare state regime is relevant to children’s, their families (parents) and old people’s material welfare.

In the case of children, the empirical part of the thesis displays that children in countries of the Social Democratic and Conservative regimes, are better off compared to children in countries of the Liberal and Southern European model. In understanding such differences one should explore social policies and family policies, in particular, in these regimes. Social Democratic welfare states pursue equality with their high social

spending, and the family is oriented around a high level of de-familiarization. Conservative welfare states have average or high public spending and differ with regard to government involvement in the field of family policy. Liberal welfare states have modest transfers, and restricted social benefits are offered to population groups with special needs. Social policies in the Southern European welfare states are less developed (compared to the other regimes), and the emphasis on family policies is low as it is taken for granted that it is up to households to provide for the welfare of their members.

The modified regime typology of this thesis (Esping-Andersen 1990; Ferrera 1996) is just one of many welfare regime typologies. Such typologies often categorize welfare regimes on the basis of history, programme characteristics or of policy outputs. Of particular relevance to the theme of this thesis is Lynch's (2004) "age of welfare"-typology. She looks into the reasons behind the diverging age-orientations of welfare states, i.e. differences between advanced industrialized countries in the extent to which they protect older versus younger citizens. And she argues that "age profiles of social policy regimes" are unintended consequences of how welfare state programs are structured, and how politicians compete within party systems.<sup>63</sup>

One might also discuss the possibility of developing a child-oriented theory of welfare states. Olk and Wintersberger (2007) point out that the dominant welfare state theories – including typologies of Esping-Andersen and feminist theories – bear adultist characteristics. In their view, a child-oriented welfare state theory must be created from independent criteria and indicators that differentiate given welfare states according to their "child-orientation". Olk and Wintersberger (*ibid.*) argue that this is possible in a theoretical perspective, as they argue that childhood is a structural category separate from adulthood, and that children has a distinct position in the generational division of labour. They also contend that this is desirable from a normative perspective, in which they refer to the CRC and its many articles and paragraphs dealing with children's economic and social welfare.

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<sup>63</sup> Lynch ((2004) distinguishes between citizenship-based systems (Norway, Finland, Sweden, Denmark, Ireland and the United Kingdom), mixed systems (Germany, France, Portugal and the Netherlands) and pure occupational systems (Italy, Spain, Greece, Belgium and Austria). The explanatory power of this alternative typology has been tested with regard to analyses of family and child benefits and old-age benefits. It must be noted that this typology had less explanatory power compared to the modified regime typology based on Esping-Andersen (1990) and Ferrera (1996).

### **Children and investment strategies**

Closely related to my former point of developing a child-oriented theory of welfare states, are discussions of the viability of the existing welfare states structures. The need to develop “new welfare architectures” is argued for two reasons (Esping Andersen et al. 2002: 4); a) the existing welfare state systems are difficult to maintain given less favourable demographic and financial conditions, and b) the “existing systems of social protection may hinder rather than promote employment growth and competitive knowledge-intensive economies”.

Different concepts are used with regard to the new welfare architectures. Although they are not identical, they do share many ideas, and of most importance a shift from redistribution to investment. The term “active social policy agenda” is used by the OECD (2004b) on a new approach to social policy focusing on preventing distress from happening (as well as helping people in distress). The term “social investment state” (Giddens 1998) refers to a state that engages in positive welfare by investing in human capital and which social policy has the function of generating resources. A third term used is an “activating welfare state”.

Child-centred social policies are essential in the new welfare architectures, as children are a strategic population group to invest in with regard to human capital. As such, this points to the relevance of a stronger integration of child-oriented questions in social policy research and welfare state research. In particular, since the aim of investments in children is not a “good childhood” in the here and now, but mobilizing children as productive workers of the future.

The “social investment strategy” discussed in Chapter 4 (Esping-Andersen and Sarasa 2002) exemplifies the future-perspective: Increased public spending on family and child benefits, to eliminate child poverty and increase fertility rates, is argued for the sake of improving the quantity and quality of future workers. According to Unicef (2000: 3) the broader picture on child poverty shows that “those who grow up in poverty are more likely to have learning difficulties, to drop out of school, to resort to drugs, to commit crimes and to be out of work, to become pregnant at too early an age and to live lives that perpetuate poverty and other disadvantage into succeeding generations”. Society suffers, as potential contributions are not realized, in addition to substantial social and economic costs.



At present, children's material welfare is primarily a parental responsibility, whilst welfare states cover less of the costs of children (Mason and Steadman 1997; Jensen et al. 2004). It is possible to argue that the social investment strategy moves the status of children away from a "private property" of their parents, to a "public benefit" (in the sense of being future workers). As the social investment strategy argues in favour of broad and differentiated welfare state investments to reduce poverty and inheritance of marginalized life chances, one might expect that children's welfare become less dependent on their parents' positions in the distribution of income and wealth. This is very attractive from a child-oriented perspective, in particular with regard to children living in relative poverty, and with regard to good quality day care and education.

The downside is that the investment in children is aimed at gaining economic returns in the future, and not about improving the quality of childhood in the present. In other words; "children are instrumentalized for the best of the future society" (Alanen 2007: 35). This means that the quality of childhood in the here and now risks being overshadowed by a focus on the development of children as future workers. With regard to child poverty, for example, one knows substantially more about the outcomes of child poverty in adulthood than one does on childhood experiences of child poverty (Ridge 2007).

### **Public transfers and poverty and fertility**

The investment perspective on welfare state programmes is concerned with increasing fertility rates and the reduction of child poverty (Hinrichs 2000; Esping-Andersen and Sarasa 2002). My explanatory models on child poverty and fertility rates might provide some insight on the role of public policy with regard to such matters.

Previous research has shown that public intervention is of importance with regard to poverty rates. My results provide an indication that the size of benefit packages matters, i.e. increasing family and child benefits and old-age benefits corresponded to decreasing child and old age poverty rates (Chapter 5). Other income statistics from Eurostat might be used to further explore the effectiveness of social transfers in reducing poverty rates. For these illustrations I focus on child poverty rates.

Two of Eurostat's "overarching indicators" on income and living conditions are at-risk-of-poverty rates before social transfers except pensions and after social transfers (60 per cent cut off line). Investigating figures from 2005 (Eurostat 2007), I find that child poverty rate is halved from 32 to 15 per cent. But there are substantial cross-country variations. The highest per cent changes in child at-risk-of-poverty from pre- to post tax and transfers, appear in countries with lowest post-level child poverty rates. The regime typology might be used as an indicator of cross-country differences: The percentage change is 19 in the Southern European, 44 in the Liberal, 54 in the Conservative and 64 per cent in the Social Democratic regime.<sup>64</sup>

The other issue is fertility rates. The Value of Children (VOC) project in the 1970s investigated perceptions of children and birth rates. In the poor countries birth rates were high and children were perceived as an economic and social gain, whilst in rich countries birth rates were lower and children were perceived in terms of economic and social costs (Espenshade 1977). With reference to Europe's struggles with low levels of fertility, some researchers propose that welfare states should do more to compensate parents of their economic burdens to increase fertility rates (Esping-Andersen and Sarasa 2002). The relation between public spending and fertility rates is still contested (Gauthier 2000; Bagavos and Martin 2001; Neyer 2003).

My results indicate a connection between the size of family and child benefits and the size of total fertility rates, as well as a positive link between female employment and fertility rates. As such, these results align with studies showing that high-quality family policies give women a better chance to combine work and family life, and that family policy is of importance for fertility rates (Sgritta 1995; Castles 2001; Finch and Bradshaw 2003; d'Addio and d'Ercole 2005). It is also in accordance to young Europeans, aged 16 to 24, who mention flexible working conditions and public policies as important factors in their decision about having children (Eurobarometer 1997).

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<sup>64</sup> In these figures, pensions are excluded from social transfers. Before social transfers, the average child poverty rate is high in the Liberal regime (40 per cent), low in the Social Democratic and Southern European regimes (30 per cent) and middle in the Conservative regime (34 per cent). After social transfers, the average child poverty rate is high in the Liberal and Southern European regimes (22-23 per cent), medium in the Conservative regime (16 per cent) and Low in the Social Democratic regime (11 per cent). In Appendix F I present a regression model including family and child benefits, pre-tax poverty, share of children in the population, GDP per capita and the welfare regime dummy variables. It is seen that the Social Democratic regime is still more effective in reducing child poverty compared to the Southern European and Liberal regimes. This is also in accordance with results in Section 5.2.2.

Finch and Bradshaw (2003) have made an interesting observation in this context. They find a correspondence between fertility levels and the level of child benefit packages made available, and state that financial support for poor families may influence poor people to have (more) children. If this is the case it may indicate that although the child benefit package paid to poorer mothers may be a key factor in influencing fertility, it does not solve the problem of child poverty. In other words, what is needed is a child investment strategy that not only provides incentives for giving birth to children, but also ensures that children do not end up in poverty.

### **Final words**

Dimensions such as social class, gender and ethnic origin are important in understanding social and material differences. The importance of social class to inequalities is manifest in the way that welfare states originated from the challenges posed by the labour movement, and the fact that the welfare state was introduced to distribute income and other resources among social classes in a fairer way (Wintersberger 2000). The gender dimension of social and material inequalities is incorporated as a consequence of “patriarchal structures in society”, which refers to male dominance of salient social institutions such as the State, the Law, and the Family. Ethnic origin is important to explain social and material inequalities, as ethnic origin matters on a variety of arenas such as the labour market, housing market, and distribution of income and wealth.

Generation or age is proposed as an additional useful indicator of material inequalities. Similar to class, gender and ethnicity, the use of generation in understanding inequalities is theoretically grounded on the assumption of a dominant group (adults) and one subordinate group (children). My empirical findings point that it is relevant to compare material inequalities between age groups corresponding to children, adults and the elderly. But they also show that empirical comparisons in an age- or generation perspective are complicated; the data on public spending do not isolate children as a group, whilst results on income data divided by age depend on the choice of equivalence scale and components included in the income concept. As such, the empirical conclusions that can be drawn do not correspond properly to the theoretical aims.



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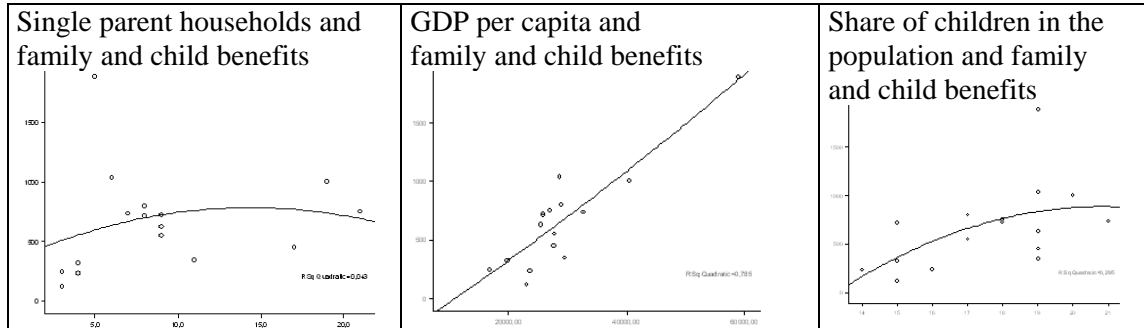
Appendix.

Tests of OLS assumptions



## A. Family and child benefits

### 1. Linearity between X and Y



The variables *Share of single parents* and *Share of children in the population* break with the assumption about linearity. To catch nonlinearities it is worth considering additional variables;  $(\text{Single parents})^2$  and  $(\text{Share of children})^2$ .

### 2. Original regression model

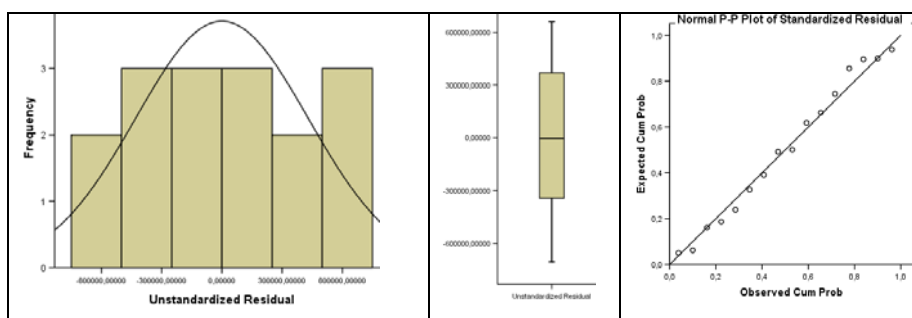
	B	SE
(Constant)	-699.4	4456.9
GDP per capita	0.025 ***	0.007
Social Democratic	909.4 **	327.2
Liberal	803.7 *	374.1
Conservative	911.9 **	300.5
Single parents	-216.4 **	79.7
$(\text{Single parents})^2$	7.7 **	3.0
Share of children	130.9	512.9
$(\text{Share of children})^2$	-4.0	14.8
<b>Adjusted R<sup>2</sup></b>	<b>0.84</b>	

Reference category: Southern European regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

### 3. Normally distributed errors



Non-normal error distributions drastically reduce the efficiency of OLS (Hamilton 1992). But if the sampled distribution is nearly normal, the distribution is approximately normal for fairly small N. Ringdal (2001) comments that in small samples (>30) it is of particular necessity to look for extreme values, and also weigh them down by use of Robust regression.

The first figure investigates the distribution of unstandardized residuals. The transformation has managed to reduce skewness to -0.07, but tails are somewhat lighter than the normality of a symmetrical distribution. As seen in the box plot (2<sup>nd</sup> figure), there are no extreme residuals. The 3<sup>rd</sup> figure compares standardized residuals with the normal distribution. The distribution of residuals is very close to the thin line (normal distribution).

I conclude that the distribution of errors is approximately normal.

#### 4. Homoscedastisity

Homoscedastisity means that the variation around the regression line is to vary just as much for small and large values. To detect heteroscedastisity, I perform White's chi-square test for (Eikemo et al. 2006).

Step 1: Calculate the square of "Unstandardized residuals".

Step 2: Compute a regression analysis with (Unstandardized residuals)<sup>2</sup> as the dependent variable and all x-variables in the regression.

Step 3: Calculate the chi-square and compare with critical values

$$R^2 = 0.55 \quad X^2 = n * r^2 = 16 * 0.55 = 8.8$$

$$Df = 7 \text{ (constant + x-variables), } p > 0.05$$

The test shows that I have no problem with heteroscedastisity.

#### 5. Multicollinearity

Multicollinearity refers to linear relationships amongst the explanatory variables.

Multicollinearity is diagnosed by tests of Tolerance and/or bivariate correlations.

	Tolerance
GDP per capita	0.51
Social Democratic	0.11
Conservative	0.18
Liberal	0.11
Single parent households	0.01
(Single parent households) <sup>2</sup>	0.01

	X1	X2	X3	X4	X5	X6
X1	1	-0.26	-0.46	0.53	0.52	0.10
X2		1	-0.26	0.22	0.18	0.05
X3			1	-0.14	-0.24	0.33
X4				1	0.98	0.17
X5					1	0.15
X6						1

X1 = Social Democratic, X2 = Liberal, X3 = Conservative, X4 = Single parents, X5 = (Single parents)<sup>2</sup>, X6 = GDP per capita

The variables *Single parents* and *Single parents*<sup>2</sup> are close to 0 in the test of Tolerance. They also have a correlation higher than 0.8. This was to be expected. The benefit of including the squared variable is higher in comparison to excluding it.

## 6. Influential cases

Some cases are more influential than others. This model includes 16 countries. In the box plot below, I find that some cases are more influential than others.

Cook's D = Measures the total influence of the cases on the model.

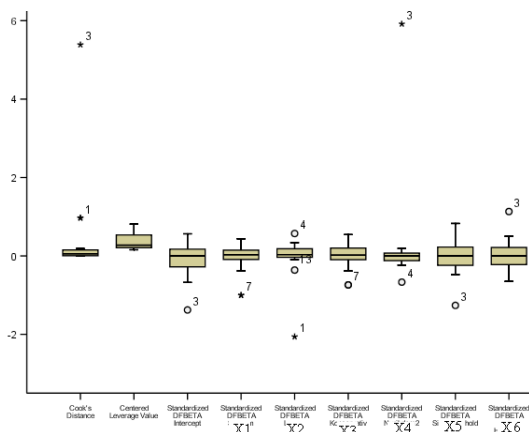
- Critical value =  $4/n = 4/16 = 0.25$

Leverage = Measures the potential influence of the cases on the variables

- Critical value = 0.5

Dfbetas = Measures the influence on each variable on the cases

- Critical value =  $2/\text{Square root}(n) = 2/\text{Square root}(16) = 0.5$



X1 = Social Democratic, X2 = Conservative, X3 = Liberal, X4 = GDP per capita, X5 = Single parents, X6 = (Single parents)<sup>2</sup>

Hamilton (1992) states that the best approach with regard to influential cases is to report results with and without them (ibid.: 130). In this case, Luxembourg represents a particularly influential unit. A regression model without Luxembourg can be compared to the OLS model in Section 4.2.2.

Transformed dependent variable without Luxembourg

	B	SE
(Constant)	545979	814399
GDP per capita	62 **	598448
Social Democratic	2181833 ***	27
Conservative	2048271 ***	6929
Liberal	1707294 **	186728
Single parents	-572294 ***	656746
(Single parents) <sup>2</sup>	20345 **	603107
<b>Adjusted R<sup>2</sup></b>	<b>0.69</b>	

Reference category: Southern European regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

In comparison to the model with Luxembourg, I find that the adjusted R<sup>2</sup> decreases to 0.69. The main reason for this is that the effect of GDP per capita is less strong in the model without Luxembourg. The effects of the welfare regime dummies increase. Thus, it seems that Luxembourg has a particular effect with regard to GDP per capita.

## 7. Robust results

Robust regression can be employed to critique OLS. In Robust regression, outliers get lower weights and this lessens their influence. Weights are between 1 and 0, and I use iterations with the Huber function.<sup>65</sup>

Transformed dependent variable applying weights (Weighted Least Squares).

	B	SE
(Constant)	-337554	1078653
GDP per capita	145 ***	20
Social Democratic	2160703 **	852503
Conservative	2360648 **	849280
Liberal	1725853 *	949221
Single parents	-827159 ***	249739
(Single parents) <sup>2</sup>	28866 ***	9349
<b>Adjusted R<sup>2</sup></b>	<b>0.92</b>	

Reference category: Southern European regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

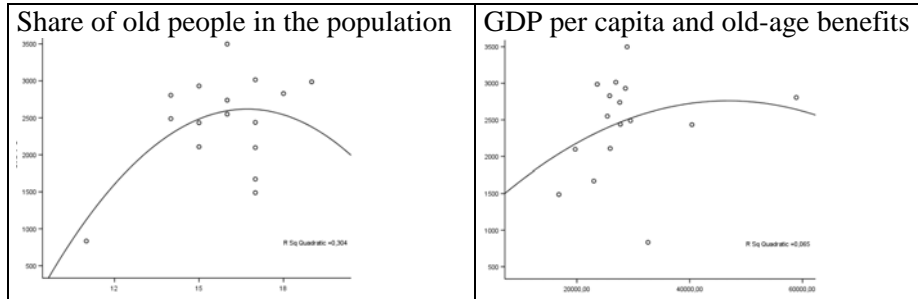
The Robust model is quite similar to the OLS model (Section 4.2.2). The main changes are that unstandardized coefficients of the welfare regime dummies increases. Since Robust and OLS results are in accordance, I have enhanced confidence in the results.

<sup>65</sup> If the case  $i$  lies no more than  $c$  (1.345) standard deviations from the median it receives the weight of 1. Scaled residuals larger than  $c$  receives progressively lower weights.



## B. Old-age benefits

### 1. Linearity between X and Y



The variables *Share of old people* and *GDP per capita* break with the assumption about linearity. To catch nonlinearities it is worth considering additional variables; (Share of old people)<sup>2</sup> and (GDP per capita)<sup>2</sup>.

### 2. Original regression model

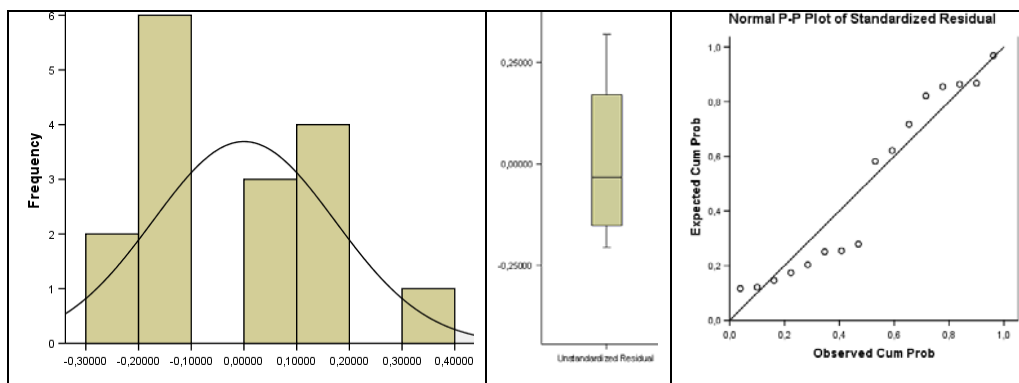
	B	SE
(Constant)	-9154	8211
Share of old people	866	967
(Share of old people) <sup>2</sup>	-18	32
Social Democratic	683	681
Conservative	627	534
Liberal	543	744
GDP per capita	0.098	0.14
(GDP per capita) <sup>2</sup>	-8.9E-7	
<b>Adjusted R<sup>2</sup></b>	<b>0.44</b>	

Reference category: Southern European regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

### 3. Normally distributed errors



The distribution of residuals is clearly non-normal (1<sup>st</sup> figure and 3<sup>rd</sup> figure). Skewness is reduced with the transformed dependent variable, but it is still as high as 0.34. The box-plot show one large residual (Austria) (2<sup>nd</sup> figure)

#### 4. Homoscedastisity

White's chi-square test indicates that there is no problem with heteroscedastisity.

$$R^2 = 0.24 \quad X^2 = n * r^2 = 16 * 0.24 = 3.8$$

$$Df = 6 \text{ (constant + x-variables)}, p > 0.05$$

#### 5. Multicollinearity

Tests of Tolerance and bivariate correlations show no sign of multicollinearity.

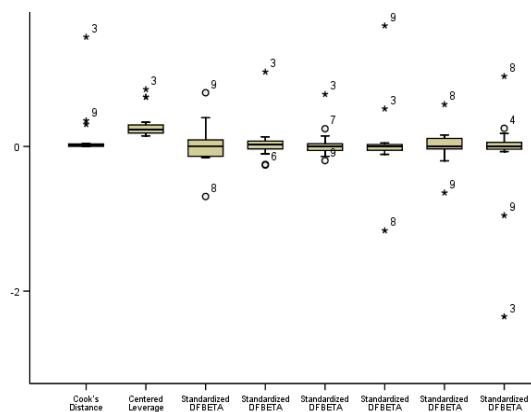
	Tolerance
Social Democratic	0.45
Conservative	0.43
Liberal	0.47
GDP per capita	0.54
Share of old people in the population	0.40

	X1	X2	X3	X4	X5
X1	1	-0.26	-0.46	0.10	-0.25
X2		1	-0.26	0.05	-0.49
X3			1	0.33	0.12
X4				1	-0.52
X5					1
X6					1

X1 = Social Democratic, X2 = Liberal, X3= Conservative, X4 = GDP per capita, X5 = Share of old people in the population.

#### 6. Influential cases

The box plot detects influential cases (Cook's D, Leverage and Dfbetas).



X1 = Social Democratic, X2 = Liberal, X3 = Conservative, X4 = GDP per capita, X5 = Share of old people in the population

The United Kingdom is a particular influential case. A regression model without the UK can be compared to the OLS model in Section 4.2.2.

Model without the United Kingdom

	B	SE
(Constant)	5.57 ***	1.07
Share of old people in the population	0.10 *	0.06
Social Democratic	0.41 **	0.17
Conservative	0.36 **	0.15
Liberal	-0.30	0.39
GDP per capita	9.6E-006	0.00
<b>Adjusted R<sup>2</sup></b>	<b>0.73</b>	

Reference category: Southern European regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

Without the UK, the adjusted R<sup>2</sup> increases to 0.73. The variables Social Democratic and Conservative are still significant, whilst the Liberal regime (only Ireland) has a negative value. At the same time, both GDP per capita and share of old people in the population are less influential.

## 7. Robust results

Robust regression is used to critique OLS. I use iterations with the Huber function.

Transformed dependent variable applying weights (Weighted Least Squares).

	B	SE
(Constant)	4.11 ***	0.86
Share of old people in the population	0.18 ***	0.04
Social Democratic	0.54 ***	0.16
Liberal	0.32	0.23
Conservative	0.38 **	0.16
GDP per capita	1.5E-005 *	0.00
<b>Adjusted R<sup>2</sup></b>	<b>0.65</b>	

Reference category: Southern European regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

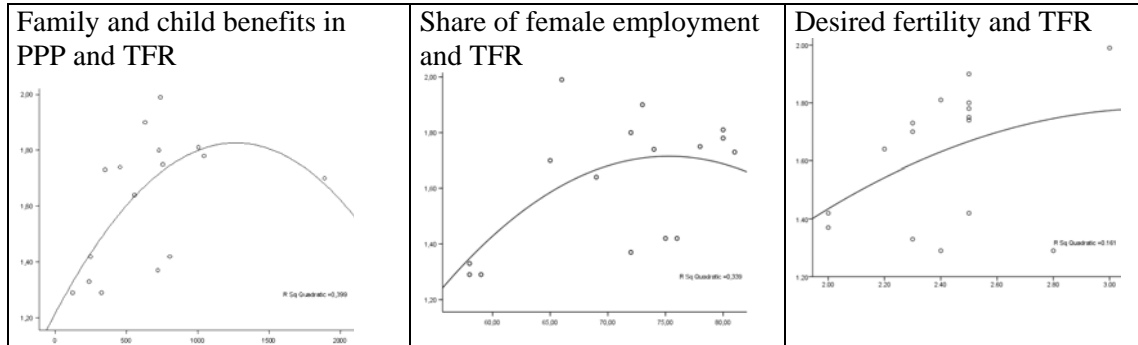
B = Unstandardized coefficients, SE = Standard error

As is seen, both unstandardized coefficients and standard errors are quite alike in the Robust model and in the OLS model. Accordingly, the adjusted R<sup>2</sup> is also very similar.



## C. Total fertility rate

### 1. Linearity



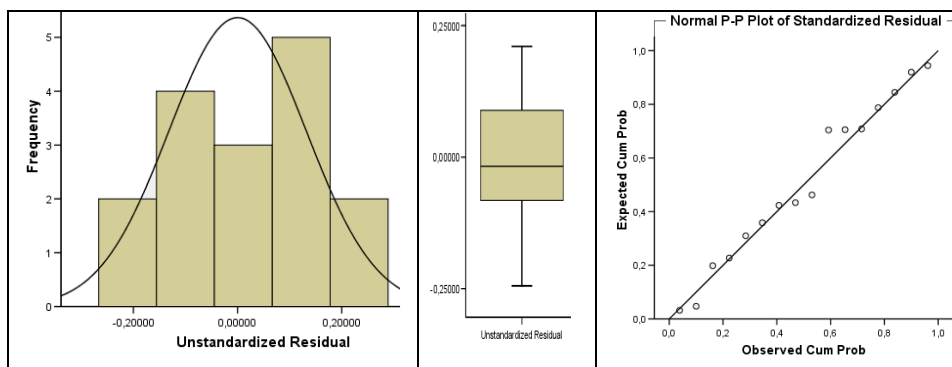
The variables *Family and child benefits* and *Share of female employment* break with the assumption about linearity. To catch nonlinearities it is worth considering additional variables;  $(\text{Family and child benefits})^2$  and  $(\text{Share of female employment})^2$ .

### 2. Original regression model

	B	SE
Constant	-8.51	6.14
Share of female employment (25-54)	0.18	0.12
$(\text{Share of female employment (25-54)})^2$	-0.0012	0.001
Desired fertility	0.44 **	0.17
Mean age at first childbirth	0.102	0.21
$(\text{Mean age at first childbirth})^2$	-0.0011	0.003
Share women with tertiary education	0.006	0.006
Family and child benefits in PPP	0.00014	0.00
<b>Adjusted R<sup>2</sup></b>	<b>0.61</b>	

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.  
B = Unstandardized coefficients, SE = Standard error

### 3. Normally distributed errors



The distribution of unstandardized residuals is quite good. There is some skewness, but the tails are approximately even in length (1<sup>st</sup> figure). This is also illustrated in the P-plot of standardized residuals (3<sup>rd</sup> figure). There are no outliers, as seen in the box plot (2<sup>nd</sup> figure).

#### 4. Homoscedastisity

White's chi-square test indicates that there is no problem with heteroscedastisity.

$$R^2 = 0.23$$

$$X^2 = n * r^2 = 16 * 0.23 = 3.7$$

$$Df = 4 \text{ (constant + x-variables)}, p > 0.05$$

#### 5. Multicollinearity

Tests of Tolerance and bivariate correlations show no sign of multicollinearity.

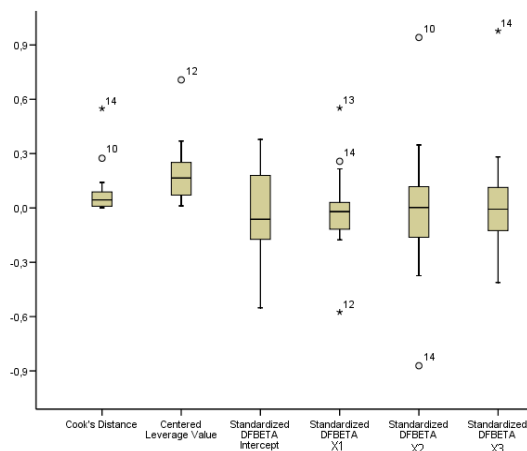
	Tolerance
Family and child benefits in PPP	0.94
Desired level fertility	0.94
Female employment (25-54 years of age)	0.91

	X1	X2	X3
X1	1	-0.13	0.23
X2		1	-0.23
X3			1

X1 = Family and child benefits in PPP, X2 = Desired level fertility, X3 = Female employment

#### 6. Influential cases

The box plot detects influential cases (Cook's D, Leverage and Dfbetas).



X1 = Family and child benefits in PPP, X2 = Desired level fertility, X3 = Female employment

Greece is a particular influential case. A regression model without Greece can be compared to the OLS model in Section 4.3.1.

Model without Greece

	B	SE
(Constant)	-0.86 *	0.48
Female employment (25-54 years of age)	0.012 **	0.01
Desired level fertility	0.63 ***	0.14
Family and child benefits in PPP	0.00019 **	0.00
<b>Adjusted R<sup>2</sup></b>	<b>0.68</b>	

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.  
B = Unstandardized coefficients, SE = Standard error

In comparison to the model including Greece, I find that the adjusted R<sup>2</sup> increases to 0.68. Furthermore, the effect of desired level of fertility increases, whilst the female employment variable is somewhat less important. There is no particular change in the effect for family and child benefits in PPP.

## 7. Robust results

Robust regression is used to critique OLS. I use iterations with the Huber function.

Applying weights (Weighted Least Squares)

	B	SE
(Constant)	-0.90	0.52
Female employment (25-54 years of age)	0.015 ***	0.005
Desired level fertility	0.55 ***	0.14
Family and child benefits in PPP	0.00021 **	0.000
<b>Adjusted R<sup>2</sup></b>	<b>0.68</b>	

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.  
B = Unstandardized coefficients, SE = Standard error

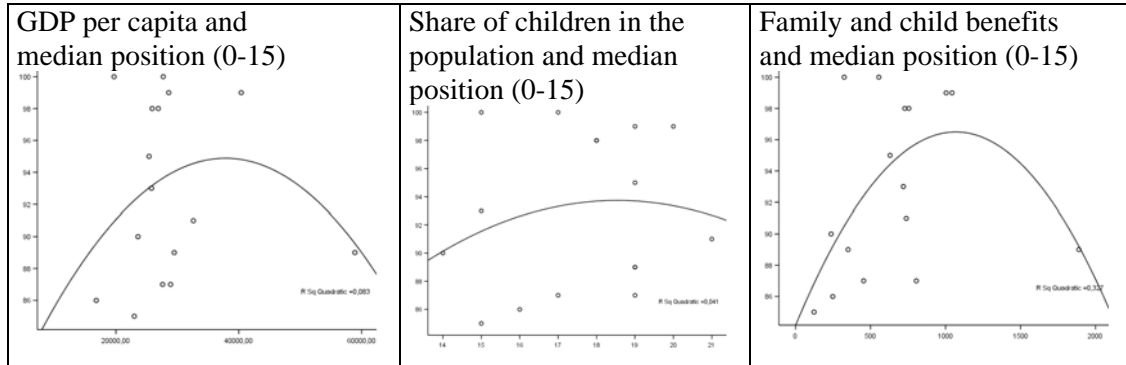
Compared to the OLS model (Section 4.3.1), the Robust regression does not change parameters drastically. Still, one should be aware that there are some differences in the two models. Of most importance is the strengthened influence of Desired level of fertility, which has become more important than female employment. Adjuster R<sup>2</sup> increases to 0.68 in the Robust model (compared to 0.59 in the OLS model).





## D. Children's median position

### 1. Linearity



The variables *GDP per capita*, *Share of children in the population* and *Family and child benefits* break with the assumption about linearity. To catch nonlinearities it is worth considering additional variables;  $(\text{GDP per capita})^2$ ,  $(\text{Share of children in the population})^2$  and  $(\text{Family and child benefits})^2$ .

### 2. Original regression model

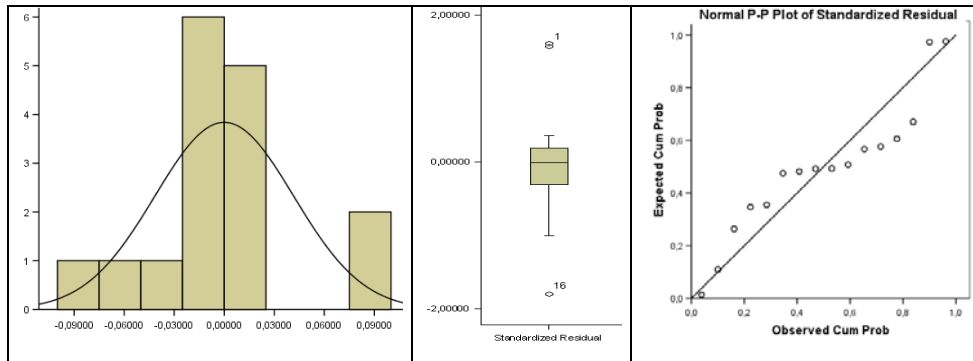
	B	SE
(Constant)	37.3	262
Family and child benefits	0.08	0.06
Family and child benefits <sup>2</sup>	-5.3E-05	0.00
Social Democratic	-11.1	19.1
Liberal	-20.11	20.0
Conservative	-15.0	18.3
GDP per capita	0.0014	0.004
GDP per capita <sup>2</sup>	-1.9E-8	0.00
Share of children	1.67	26.0
Share of children <sup>2</sup>	-0.033	0.75
<b>Adjusted R<sup>2</sup></b>	<b>-0.19</b>	

Reference category: Southern European regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

### 3. Normally distributed errors



A transformation of the dependent variable reduces skewness to 0.15. Still, the histogram of unstandardized residuals and the P-plot of standardized residuals clearly show that the assumption about non-normal error distributions is broken (1<sup>st</sup> and 3<sup>rd</sup> figures). The Box-plot demonstrates 2 outliers (2<sup>nd</sup> figure).

### 4. Homoscedastisity

White's chi-square test indicates that there is no problem with heteroscedastisity.

$$R^2 = 0.38 \quad X^2 = n * r^2 = 16 * 0.38 = 6.1$$

$$Df = 5 \text{ (constant + x-variables)}, p > 0.05$$

### 5. Multicollinearity

Tests of Tolerance and bivariate correlations diagnose multicollinearity. This time, the inevitable link between *Family and child benefits* and  $(\text{Family and child benefits})^2$  is detected.

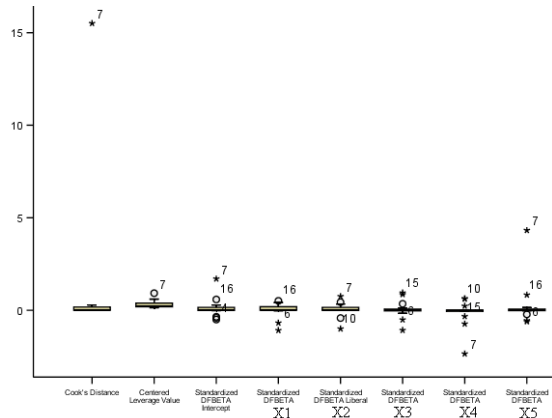
	Tolerance
Social Democratic	0.20
Liberal	0.42
Conservative	0.22
Family and child benefits	0.03
Family and child benefits <sup>2</sup>	0.04

	X1	X2	X3	X4	X5
X1	1	-0.26	-0.46	0.19	0.05
X2		1	-0.26	-0.06	-0.11
X3			1	0.42	0.39
X4				1	0.95
X5					1

X1 = Social Democratic, X2 = Liberal, X3 = Conservative, X4 = Family and child benefits, X5 = Family and child benefits<sup>2</sup>

## 6. Influential cases

The box plot detects influential cases (Cook's D, Leverage and Dfbetas).



X1 = Social Democratic, X2 = Liberal, X3 = Conservative, X4 = Family and child benefits, X5 = Family and child benefits<sup>2</sup>

The influence of Luxembourg is quite extreme. A regression model without Luxembourg can be compared to the OLS model in Section 5.1.1.

Model without Luxembourg

	B	SE
(Constant)	4.36 ***	0.08
Family and child benefits	0.001 *	0.000
(Family and child benefits) <sup>2</sup>	-0.00000046	0.000
Social Democratic	-0.05	0.06
Liberal	-0.13 *	0.07
Conservative	-0.10	0.07
<b>Adjusted R<sup>2</sup></b>	<b>0.31</b>	

Reference category: Southern European regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

The adjusted R<sup>2</sup> is 0.31. This is higher compared to the model with Luxembourg, but the result is still quite poor. There are also some changes in the unstandardized coefficients. The overall picture is the same, with few variables with significant effects.

## 7. Robust regression

Robust regression is used to critique OLS. I use iterations with the Huber function.

Regression applying weights (Weighted Least Squares)

	B	SE
(Constant)	4.42 ***	0.04
Family and child benefits	0.00 **	0.00
Family and child benefits <sup>2</sup>	-1.6E-007 **	0.00
Social Democratic	-0.02	0.05
Liberal	-0.09	0.05
Conservative	-0.04	0.05
<b>Adjusted R<sup>2</sup></b>	<b>0.43</b>	

Reference category: Southern European regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

The variables on family and child benefits have increased their significance, whilst the importance of the welfare regime variables are at the same level. Changes in the importance of family and child benefit variables create a problem considering results from OLS regression. On the other hand, this test does nothing more than add to the picture; the regression model is quite poorly specified.

## 8. Regression with Family and child benefits in cash

In this model Family and child benefits (cash + kind) is substituted with Family and child benefits in cash.

Regression applying cash benefits

	B	SE
(Constant)	4.45 ***	0.04
Family and child benefits in cash	0.00035	0.00
(Family and child benefits in cash) <sup>2</sup>	-1.8E-7	0.00
Social Democratic	0.05	0.05
Liberal	-0.09	0.07
Conservative	-0.05	0.07
<b>Adjusted R<sup>2</sup></b>	<b>0.19</b>	

Reference category: Southern European regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

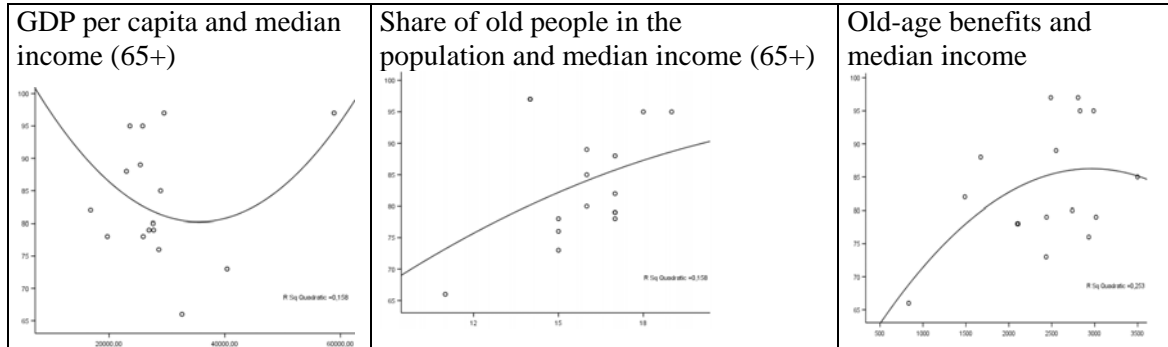
B = Unstandardized coefficients, SE = Standard error

Although there are some minor changes, unstandardized coefficients are very similar.

The explanatory power is reduced to 0.19 when cash transfers are included in the model (and not transfers in kind). I expected a better model when separating cash transfer, but this did not happen.

## E. Old people's median position

### 1. Linearity



The variables *GDP per capita* and *Old-age benefits* break with the assumption about linearity. To catch nonlinearities it is worth considering additional variables;  $(\text{GDP per capita})^2$  and  $(\text{Old-age benefits})^2$ .

### 2. Original regression model

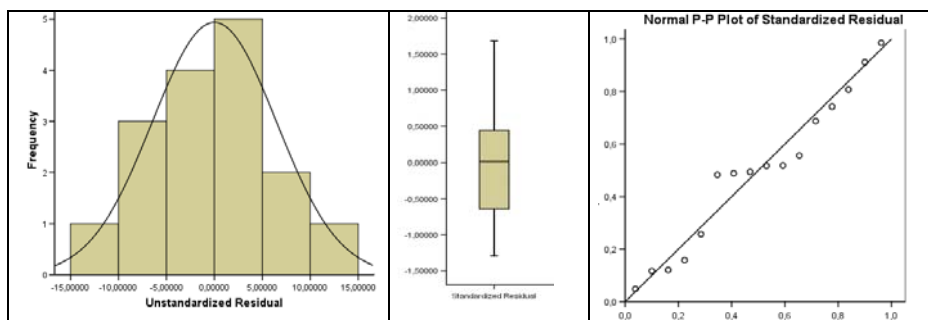
	B	SE
(Constant)	82.9	60.9
Social Democratic	-11.9	14.3
Liberal	-11.9	14.7
Conservative	-3.5	10.9
Share of old people in the population	-1.5	3.4
Old-age benefits in PPP	0.03	0.03
$(\text{Old-age benefits in PPP})^2$	-4.4E-006	0.00
GDP per capita	-0.00	0.00
$(\text{GDP per capita})^2$	7.1E-009	0.00
<b>Adjusted R<sup>2</sup></b>	<b>-0.04</b>	

Reference category: Southern European regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

### 3. Normally distributed errors



The distribution of unstandardized residuals shows some skewness (1<sup>st</sup> and 2<sup>nd</sup> figures). Even if the transformation has helped, it seems from the P-plot of standardized residuals that the assumption about non-normal error distributions is broken (3<sup>rd</sup> figure).

#### 4. Homoscedastisity

White's chi-square test indicates that there is no problem with heteroscedastisity.

$$R^2 = 0.23, \quad X^2 = n * r^2 = 16 * 0.23 = 3.7$$

$$Df = 7 \text{ (constant + x-variables)}, p > 0.05$$

#### 5. Multicollinearity

Tests of Tolerance and bivariate correlations diagnose multicollinearity. The inevitable multicollinearity between *Old-age benefits* and  $(Old-age benefits)^2$  is detected.

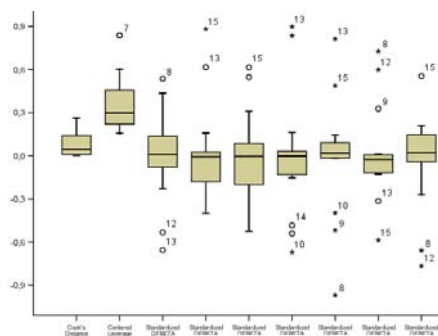
	Tolerance
Social Democratic	0.23
Liberal	0.38
Conservative	0.29
Share of old people in the population	0.26
Old-age benefits in PPP	0.02
Old-age benefits in PPP <sup>2</sup>	0.02

	X1	X2	X3	X4	X5	X6
X1	1	-0.26	-0.46	-0.25	0.17	0.12
X2		1	-0.26	-0.49	-0.38	-0.30
X3			1	0.12	0.41	0.42
X4				1	0.42	0.35
X5					1	0.98

X1 = Social Democratic, X2 = Liberal, X3 = Conservative, X4 = Share of old people in the population, X5 = Old-age benefits in PPP, X6 = Old-age benefits in PPP<sup>2</sup>

#### 6. Influential cases

The box plot detects influential cases (Cook's D, Leverage and Dfbetas).



X1 = Social Democratic, X2 = Liberal, X3 = Conservative, X4 = Share of old people in the population, X5 = Old-age benefits in PPP, X6 =  $(Old-age benefits in PPP)^2$

In this model, Ireland and the United Kingdom constitute the most influential cases. A model without Ireland and the UK can be compared to the model in Section 5.1.1.

Model without Ireland and the UK

	B	SE
(Constant)	74.5	56.8
Social Democratic	-14.8	10.3
Conservative	-5.1	9.3
Old-age benefits in PPP	0.034	0.04
(Old-age benefits in PPP) <sup>2</sup>	-5.7E-006	0.00
Share of old people in the population	-1.9	2.4
Adjusted R <sup>2</sup>	-0.11	

Reference category: Southern European regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

In comparison to the model in Section 5.1.2, the adjusted R<sup>2</sup> decreases to -0.11. In both models, no variables are significant. Unstandardized coefficients do not change very much, so the main reason for lower explanatory power is the lack of the Liberal variable (and fewer cases).

## 7. Robust regression

Robust regression is used to critique OLS. I use iterations with the Huber function.

Regression analysis applying weights (Weighted Least Squares)

	B	SE
(Constant)	75.3 ***	29.3
Social Democratic	-15.1	8.9
Liberal	-13.7	9.6
Conservative	-4.4	7.9
Old-age benefits in PPP	0.028	0.022
(Old-age benefits in PPP) <sup>2</sup>	-4.5E-006	0.000
Share of old people in the population	-1.5	2.1
<b>Adjusted R<sup>2</sup></b>	<b>0.27</b>	

Reference category: Southern European regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

There are few differences between the OLS model and the Robust model with regard to unstandardized coefficients. These small changes increase the explanatory power slightly (to 0.27). Still, the Robust regression tells the same story as the OLS regression: The model is quite poorly specified.

## 8. Regression with Old-age benefits in cash

In this model Old-age benefits (cash + kind) is substituted with Old-age benefits in cash.

Regression analysis applying cash benefits

	B	SE
(Constant)	73.8 **	26.4
Social Democratic	-12.9	7.6
Liberal	-14.8	9.0
Conservative	-6.0	7.4
Old-age benefits in Cash	0.027	0.023
(Old-age benefits in Cash) <sup>2</sup>	-4.2E-6	0.000
Share of old people in the population	-1.3	1.9
<b>Adjusted R<sup>2</sup></b>	<b>0.34</b>	

Reference category: Southern European regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

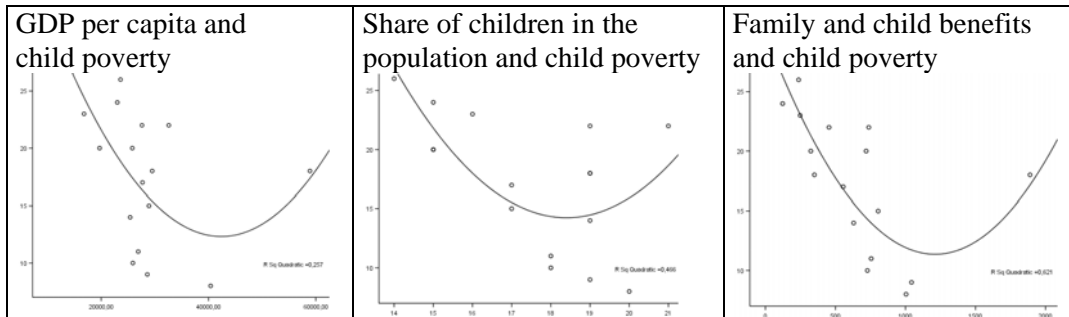
B = Unstandardized coefficients, SE = Standard error

There are some minor changes with regard to unstandardized coefficients; Social Democratic and Share of old people have smaller coefficients, whilst Conservative has a more negative coefficient. The explanatory power increases to 0.34 when cash transfer variables are included (as opposed to 0.18).



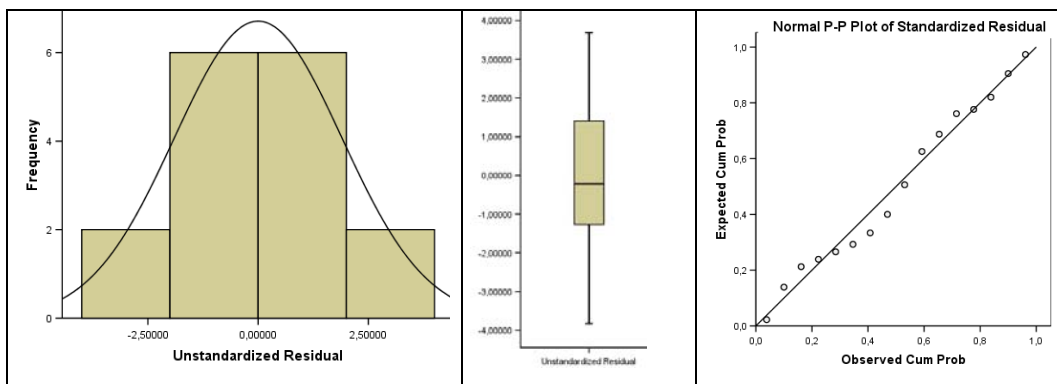
## F. Child poverty

### 1. Linearity



The variables *GDP per capita*, *Share of children in the population* and *Family and child benefits* break with the assumption about linearity. To catch nonlinearities it is worth considering additional squared variables. Still, a model with no square variables seems to be the best model.

### 2. Normally distributed residuals



The distribution of errors is approximately normal, as seen in the histogram of unstandardized residuals and the p-plot of Standardized residuals (1<sup>st</sup> and 3<sup>rd</sup> figures). Skewness is as low as 0.03. The box plot shows no outliers and similar length on tails.

### 3. Homoscedastisity

White's chi-square test indicates that there is no problem with heteroscedastisity.

$$R^2 = 0.00 \quad X^2 = n * r^2 = 16 * 0.48 = 7.7$$

$$Df = 6 \text{ (constant + x-variables), } p > 0.05.$$

#### 4. Multicollinearity

Tests of Tolerance and bivariate correlations diagnose multicollinearity. The inevitable multicollinearity between *Old-age benefits* and  $(Old-age\ benefits)^2$  is detected.

	Tolerance
Social Democratic	0.21
Liberal	0.25
Conservative	0.31
Share of children in the population	0.21
GDP per capita	0.18
Family and child benefits	0.15

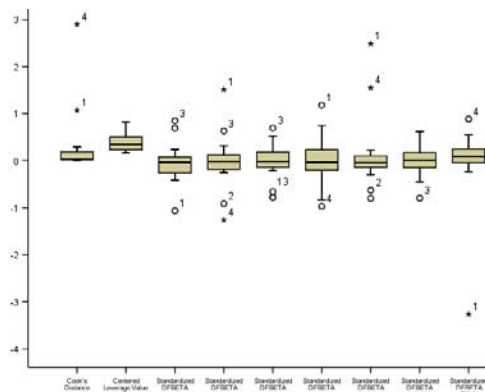
	X1	X2	X3	X4	X5	X6
X1	1	-0.26	-0.46	0.42	0.10	0.19
X2		1	-0.26	0.46	0.05	-0.06
X3			1	-0.06	0.33	0.42
X4				1	0.54	0.53
X5					1	0.89
X6						1

X1 = Social Democratic, X2 = Liberal, X3 = Conservative, X4 = Share of children in the population, X5 = GDP per capita, X6 = Family and child benefits.

The test of Tolerance shows that none of the variables are close to 0. But tests of bivariate correlations show a very high correlation between GDP per capita and Family and child benefits. The question is whether or not to include GDP per capita in the model. I find that GDP per capita adds to the adjusted  $R^2$  and therefore decide to include it in the final model.

#### 5. Influential cases

The box plot detects influential cases (Cook's D, Leverage and Dfbetas).



X1 = Social Democratic, X2 = Liberal, X3 = Conservative, X4 = Share of children in the population, X5 = GDP per capita, X6 = Family and child benefits

Luxembourg and the Netherlands are influential cases. A model without Luxembourg and the Netherlands can be compared to the model in Section 5.1.2.

Model without Luxembourg and the Netherlands

	B	SE
(Constant)	40.9	6.9
Social Democratic	-8.2 **	3.0
Liberal	5.2	2.8
Conservative	-3.6	2.2
Family and child benefits	-0.003	0.005
Share of children in the population	-1.3 **	0.48
GDP per capita	8.4E-005	0.00
<b>Adjusted R<sup>2</sup></b>	<b>0.92</b>	

Reference category: Southern European regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

In comparison to the model presented in Section 5.1.2, I find that the effects of Family and child benefits and GDP per capita are much smaller. At the same time, the effects of Share of children in the population, Social Democratic and Liberal are stronger. The adjusted R<sup>2</sup> increases from 0.81 (in Section 5.1.2) to 0.92.

## 6. Robust regression

Robust regression is used to critique OLS. I use iterations with the Huber function.

Regression applying weights (Weighted Least Squares)

	B	SE
(Constant)	33.8	8.8
Social Democratic	-7.4 **	2.6
Liberal	3.5	3.3
Conservative	-3.2	2.2
Family and child benefits	-0.0074 *	0.004
GDP per capita	0.00036 **	0.000
Share of children in the population	-1.1	0.6
<b>Adjusted R<sup>2</sup></b>	<b>0.83</b>	

Reference category: Southern European regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

There are some smaller differences between the Robust model and the OLS model. The variables Social Democratic and Liberal show somewhat stronger effects, whilst Family and child benefits lose some of its effect. The explanatory power of the model is about

the same (Robust = 0.83 and OLS = 0.81). The two models are in other words quite alike, and this enhances confidence in the results.

## 7. Regression with Family and child benefits in cash

In this model Family and child benefits (cash + kind) is substituted with Family and child benefits in cash.

Regression applying cash benefits

	B	SE
(Constant)	33.6 ***	10.4
Social Democratic	-9.3 **	2.9
Liberal	4.0	3.8
Conservative	-3.2	2.6
Family and child benefits Cash	-0.0086	
GDP per capita	0.00039	
Share of children in the population	-1.1	
<b>Adjusted R<sup>2</sup></b>	<b>0.80</b>	

Reference category: Southern European regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

Unstandardized coefficients for GDP per capita, Share of children and Conservative in the two models are quite much alike. The most notable changes are found in the variables Social Democratic (stronger effect) and Liberal (now a positive value), as well as the fact that the effect of Family and child benefits is the same. As such, it seems that the effect of benefits is weaker when just exploring cash transfers. The explanatory power is the same when cash transfers are included in the model.

## 8. Regression model including Pre-tax child poverty

In this model (on the next page), I include Pre-tax child poverty. This is commented upon in the Conclusion (see footnote 65). The model shows that the Social Democratic regime still is more effective compared to the Southern European regime with regard to reducing child poverty. It is also worth noting that the effect of Family and child benefits is reduced in this model. The explanatory power of the model is the same as the one in Section 5.2.2.

Regression including Pre-tax child poverty

	B	SE
(Constant)	32.8 **	11.5
Social Democratic	-7.5 **	3.0
Liberal	3.1	4.5
Conservative	-3.5	2.7
Family and child benefits	-0.007	0.004
GDP per capita	0.00036 *	0.000
Share of children in the population	-1.1	0.67
Pre-tax poverty (pensions excluded from social benefits)	0.032	0.20
<b>Adjusted R<sup>2</sup></b>	<b>0.81</b>	

Reference category: Southern European regime.

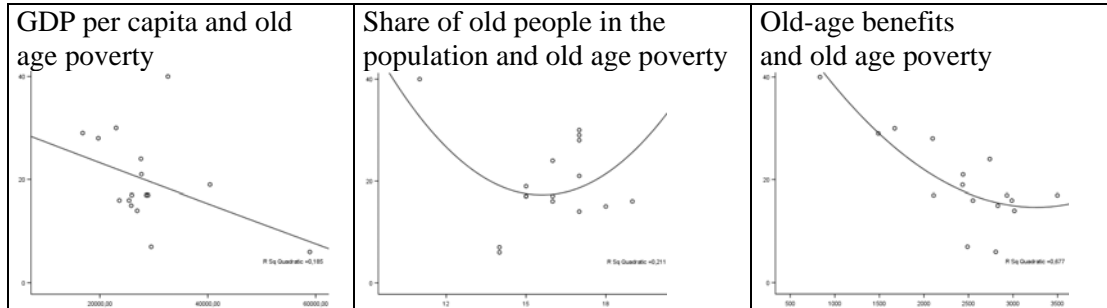
\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error



## G. Old age poverty

### 1. Linearity



The variables *Share of old people in the population* and *Old-age benefits* break with the assumption about linearity. To catch nonlinearities it is worth considering additional squared variables. Still, a model with no square variables seems to be the best model.

### 2. Original regression model

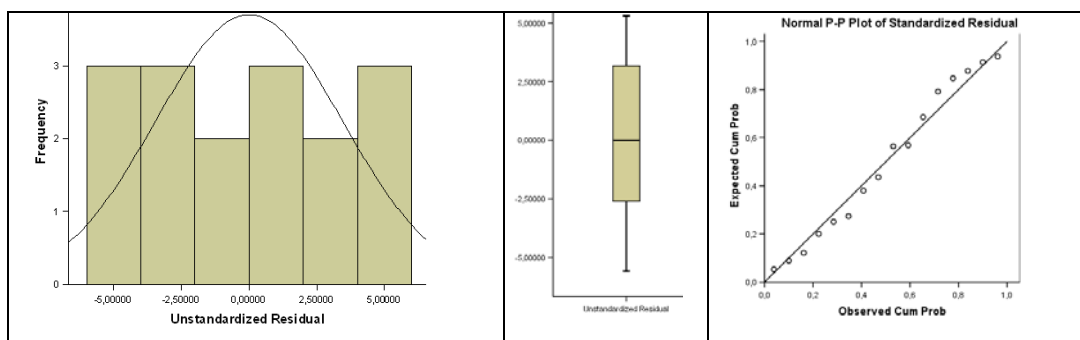
	B	SE
(Constant)	-46.1	75.2
Old-age benefits in PPS	-0.041 **	0.017
(Old-age benefits in PPS) <sup>2</sup>	6.8E-006 *	0.000
Social Democratic	-9.9 *	4.6
Conservative	-10.0 *	4.8
Southern European	-8.5	5.6
Share of old people in the population	15.4	10.7
Share of old people in the population <sup>2</sup>	-0.44	0.32
GDP per capita	-6.6E-005	0.000
<b>Adjusted R<sup>2</sup></b>	<b>0.74</b>	

Reference category: Liberal regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

### 3. Normally distributed residuals



The distribution of errors is approximately normal. This is seen in the histogram of unstandardized residuals and the p-plot of Standardized residuals (1<sup>st</sup> and 3<sup>rd</sup> figures). Skewness is as low as 0.03, and in the box plot shows no outliers (2<sup>nd</sup> figure).

#### 4. Homoscedastisity

White's chi-square test indicates that there is no problem with heteroscedastisity.

$$R^2 = 0.47 \quad X^2 = n * r^2 = 16 * 0.60 = 9.6$$

$$Df = 7 \text{ (constant + x-variables)}, p > 0.05$$

#### 5. Multicollinearity

Multicollinearity is diagnosed by Tolerance and/or bivariate correlations. The inevitable multicollinearity between *Old-age benefits* and  $(Old-age\ benefits)^2$  is detected.

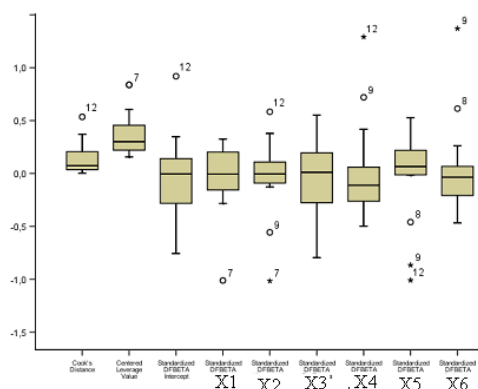
	Tolerance
Social Democratic	0.27
Liberal	0.27
Conservative	0.22
Share of old people in the population	0.26
Old-age benefits in PPP	0.02
Old-age benefits in PPP <sup>2</sup>	0.02

	X1	X2	X3	X4	X5	X6
X1	1	-0.46	-0.39	-0.25	0.17	0.12
X2		1	-0.39	0.12	0.41	0.42
X3			1	0.51	-0.33	-0.36
X4				1	0.42	0.35
X5					1	0.98

X1 = Social Democratic, X2 = Conservative, X3 = Southern European, X4 = Share of old people in the population, X5 = Old-age benefits, X6 = Old-age benefits<sup>2</sup>

#### 6. Influential cases

The box plot detects influential cases (Cook's D, Leverage and Dfbetas).



X1 = Social Democratic, X2 = Conservative, X3 = Southern European, X4 = Share of old people in the population, X5 = Old-age benefits, X6 = Old-age benefits<sup>2</sup>



There are some influential cases in this model, and the most problematic is Austria. A model without Austria can be compared to the model in Section 5.1.2.

Model without Austria

<b>Revised model</b>	<b>B</b>	<b>SE</b>
(Constant)	30.2 *	14.8
Social Democratic	-9.8 *	4.4
Conservative	-11.7 **	4.7
Southern European	-10.5 *	5.5
Share of old people in the population	2.2 *	1.1
Old-age benefits in PPS	-0.02	0.014
Old-age benefits in PPS <sup>2</sup>	1,8E-006	0.000
<b>Adjusted R<sup>2</sup></b>	<b>0.87</b>	

Reference category: Liberal regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

In comparison to the model presented in Section 5.1.2 I find these changes: a) The model without Austria has a higher explained variance (0.87); b) the variables Share of old people in the population and Social Democratic and the Conservative regime increases their effects; and c) old-age benefits loose its explanatory power.

## 7. Robust regression

Robust regression is used to critique OLS. I use iterations with the Huber function.

Regression applying weights (Weighted Least Squares)

	<b>B</b>	<b>SE</b>
(Constant)	42.2 ***	12.9
Old-age benefits in PPS	-0.032 **	0.012
Old-age benefits in PPS <sup>2</sup>	0.0000049 *	0.000
Social Democratic	-8.1 *	4.4
Conservative	-9.1 *	4.4
Southern European	-7.9	5.3
Share of old people in the population	1.9	1.1
<b>Adjusted R<sup>2</sup></b>	<b>0.76</b>	

Reference category: Liberal regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

There are quite many small changes in the unstandardized coefficients in the Robust model compared to the OLS model. The Old-age benefit variables have increased their effects slightly, whilst the other variables have experienced slight decreases in their effects. Thus, the explanatory powers of the models are very similar (Robust = 0.76 and

OLS = 0.74). All in all, the two models are very similar, and this enhances confidence in the results.

## 8. Regression with Old-age benefits in cash

In this model Old-age benefits (cash + kind) is substituted with Old-age benefits in cash.

Regression analysis applying cash benefits

	B	SE
(Constant)	47.3 ***	12.2
Old-age benefits in Cash	-0.030 **	0.013
(Old-age benefits in Cash) <sup>2</sup>	0.0000045 *	0.000
Social Democratic	-12.3 **	4.0
Conservative	-9.0 *	4.3
Southern European	-8.0	5.0
Share of old people in the population	1.5	1.0
<b>Adjusted R<sup>2</sup></b>	<b>0.77</b>	

Reference category: Liberal regime.

\*\*\* Significant at the 0.01-level, \*\* Significant at the 0.05-level, \* Significant at the 0.1-level.

B = Unstandardized coefficients, SE = Standard error

There are some changes with regard to unstandardized coefficients. Most importantly, the Social Democratic variable increases its effect. Share of old people in the population also decreases its effect. The benefit variables have approximately the same effects (since almost all old-age benefits are given in cash). The explanatory power is the same.