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▶ **To cite this version:**

Jérôme de Henau, Sile O'dorchai, Danièle Meulders, Hélène Périvier. The relative generosity of the EU-15 member states' child policies. [Research Report] Office des publications de l'Union européenne. 2004, pp.43 - 68. hal-03614742

HAL Id: hal-03614742
https://sciencespo.hal.science/hal-03614742

Submitted on 21 Mar 2022

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Chapter II

The relative generosity of the EU-15 member states' child policies

Jérôme de Henau, Danièle Meulders, Síle O'Dorchai, Hélène Périvier

2.1. Introduction

In order to investigate the influence of social policies on parenthood choices, we have analyzed those state interventions that are likely to affect women's fertility decisions: provisions supportive of maternal employment such as public childcare and early childhood education but also more general family policies such as child allowances, tax deductions. Moreover, the specter of policies regarding maternity as well as opportunities to take parental leave have also been studied.
This chapter summarizes all of the information that was gathered and treated throughout this research. It is based on a detailed and in-depth collection and analysis of available accurate quantitative and qualitative data covering the former 15 European countries. These data have given rise to an extremely rich data base which we have consequently used in order to build synthetic indicators.
Based on a large number of underlying criteria which describe the systems in place we have aggregated information in order to compute summarizing indicators that measure each EU-15 member state's generosity in each of the three fields of family-friendly policies. Based on their respective scores, countries were then ranked to allow for a better comparison.
Taken together, the three country rankings shed important insight into the way public policy facilitates today's families' choices as to time allocation, labor participation, leisure, etc. Note also that in evaluating a country's efforts we have particularly paid attention to the implications for gender equality that result from the existing support schemes.
In this paper, the aim is to present the indicators and country rankings obtained in the three fields of public childcare, parental leave and child tax and cash benefits first separately and next, put together in order to get a final global view on the EU-15 member states' generosity towards families with children. See Appendix figure A.1. for the steps of the index construction.
The outline of this chapter is the following. The first section summarizes the analysis of existing welfare state typologies that will serve as the reference point to which we will confront our results.
The following sections present the data that were gathered as well as the synthetic indicators that were derived from these in the following order. We start with the analysis of public child care systems in Europe, for children aged 0-3 and 3-6 respectively, taking into account the availability of places, the quality of the services and their cost. Secondly, we present our analysis of child cash allowances for working families at different income levels and put forward the particular features of the different systems in terms of the variation of benefits according to family type and the child's rank in the family. Thirdly, we analyze tax advantages according to criteria such as the level of parents' income, the family size , etc. Fourthly, we investigate the systems of maternity leave focusing on the wage replacement rate and the conditions involved in the take-up of this leave. Finally, we objectively outline the systems of parental leave that are implemented throughout the 15 countries studied. Note, however, that, in our opinion, these systems should be assessed very cautiously given the negative effects they entail for female employment.
The conclusion of this chapter confronts our results to existing welfare state typologies. We find that our methodology of looking into a very wide range of different elements that are likely to

affect parenthood choices and summarizing this information into synthetic indicators as well as the fact that we essentially use very precise quantitative data or quantify qualitative information produces results that are considerably more subtle than those put forward by less targeted and less detailed studies that risk giving a false picture of the real-life situation of working mothers throughout Europe.

2.2. Overview of welfare states and gender regimes typologies

In recent decades, several typologies of welfare states were established in order to provide an answer to the question whether real welfare states are quite similar to others or whether instead they are rather unique specimens. Welfare state typologies have needed to develop or, in other words, typology-builders have gradually needed to incorporate an ever increasing number of variables into their analysis of welfare states in order to stay in line with social attitudes and ideas as well as with political and economic reality.

Until the seminal contribution of Esping-Andersen (1990), typologies were built around the concept of redistribution, ranking countries according to measures such as the state's level of social expenditures, the proportion of transfers to GDP, the proportion of tax receipts to GDP, etc. (Mac Farlan and Oxley, 1996 and Adema, 1996) This first generation of typologies already unraveled a clear dichotomy between the very redistributive welfare systems of the Scandinavian countries and the underdeveloped welfare states of the South of Europe.

With Esping-Andersen (1990) the central object of analysis is broadened to the state-market nexus or the relationship between paid work and welfare. His threefold typology of conservative-corporatist (AT, BE, FR, GE, EL, IT, LUX, NL and ES), liberal (IE and the UK), and social-democratic (DK, FI and SE) welfare state regimes is based on the criteria of decommodification, social stratification, and the state-market nexus (Esping-Andersen, 1990). Esping-Andersen has been the catalyst for a new vague of typologies centered around the respective welfare roles of the state and the market. However, the omission of the gender dimension in these typologies has triggered a fierce reaction in the feminist literature.

Indeed, feminists have pointed out that, in comparative welfare state research, women only enter the analysis as they become more visible as paid workers. Unfortunately, they are just granted a place within the same paid work/welfare schedule that was primarily designed with male breadwinners in mind. The concept of decommodification presupposes that individuals are commodified. Therefore, it may adequately describe the relationship between welfare states and the standard, full-career male worker, but it is not easily applicable to women, considering that their economic role is often non-commodified. Much of the welfare work undertaken by women within the household has never been part of the market, and continues to be performed outside the purview of the welfare state (Sainsbury, 1994) The concept of decommodification is inoperable for women unless welfare states, to begin with, help them become commodified. The concept of familialism has received special attention, particularly in Esping-Andersen's later work (Esping-Andersen, 1999). According to Esping-Andersen (1999), a familialistic welfare regime is one that assigns a maximum of welfare obligations to the household. As a consequence, the concept of 'de-familialization' serves to capture policies that lessen individuals' reliance on the family, that maximize individuals' command over economic resources independently of familial or conjugal reciprocities. Given that women's, or at least mothers', family responsibilities easily restrict their ability to gain full economic independence solely via work, their de-familialisation depends uniquely on the welfare state. Women carefully weigh the gains and losses of work given their time-consuming childcare responsibilities. Part-time employment, although enabling women to deal with their double burden, is hardly ever enough to guarantee full economic independence. In other words, it was feminist critique that led Esping-Andersen (1999) to realize that female independence necessitates 'de-familializing' welfare obligations rather than 'de-commodifying'

them.

These reflections have marked an important step in comparative welfare state research. A new generation of typologies has been far more open to gendered dimensions of the welfare state as well as to women's multiple welfare roles. (Lewis and Ostner, 1994; Gornick, Meyers and Ross, 1997; Letablier, 1998; Forssén and Hakovirta, 2000; Walby, 2001; Pfau-Effinger, 2000) An analysis of this more recent wave of welfare state research shows that when the specific situation of mothers is considered, welfare states are hardly ever pure types and are usually hybrid cases that foster mothers' welfare in different forms and to different extents. Some degree of abstraction needs to be made to retrieve groups of countries with similar welfare systems. The closest to our object of analysis are the typologies by Lewis and Ostner (1994), Gornick, Meyers and Ross (1997), Letablier (1998) and Forssén and Hakovirta (2000). We will therefore confront our results to theirs.

Regardless of the typology considered, several countries are always found in the top category: Sweden, Finland, Denmark, Belgium and France. In these countries, family life and employment seem to be more compatible thanks to supportive public policies. Northern European states first and foremost pursue gender equality as the main policy objective and within this framework do not distinguish between women with or without children. Therefore, generous state provision of child care has to be understood as a measure to support women's access to the labor market besides its role to increase child well-being. Day care coverage and state subsidies for day care costs are both relatively high in those countries, especially in Denmark. In France and Belgium, the focus tends to be more hybrid combining both elements of gender equality and familialism, thus addressing the specific situation of women as mothers.

A middle group of countries includes Germany, Austria and Luxembourg. Rather than combine family and professional responsibilities women in these countries alternate child care and employment meaning that they drop out of the labor market completely during their child's first years of life. These countries are considered strong male breadwinner states confining women to the home. Public policies therefore focus on long maternity and parental leaves but limited public child care provision for very young children. Although they also belong to this groups of countries, the Netherlands form an important exception to this general pattern of female activity. Indeed, the substantial increase in their activity rates over recent years is entirely due to the growth in part-time employment. In this country the male breadwinner/female part-time carer model prevails (Pfau-Effinger, 2000).

Finally, the Southern European countries and the liberal welfare states of the United Kingdom and Ireland are ranked lowest. In the liberal countries, child care is considered a private matter in which the state should not intervene. Public child care is aimed at protecting children in need but should not be concerned with allowing mothers to engage in paid work. As a result, these countries are characterized by numerous movements in and out of employment around childbirth. In the Mediterranean countries, family life and employment are in fierce competition. Women face a trade-off between having children or pursuing a career, a combination of both being generally quite difficult. Financial constraints put heavy pressure on public support forcing the enlarged family to substitute for the state. Fertility rates significantly decline in the South as more women choose to enter the labor force.

Table 2.1. briefly presents an overview of existing typologies most relevant to working women and therefore most appropriate for comparison with the outcome of our country classification.

Table 2.1. Summary of related welfare state typologies

ANALYSIS	FIRST GROUP	SECOND GROUP	THIRD GROUP
Esping-Andersen (1990, 1999) « decommodification, social stratification and state-market-family nexus »	DK, FI, SE	AT, BE, FR, GE, EL, IT, LUX, NL, ES	IE, UK
Lewis and Ostner (1994) « strong-modified-weak male breadwinner »	SE, DK	FR	GE, IE, UK, NL
Walby (2001) « gender regimes »	DK, FI, SE, USA, UK, CA, CZ, HU, PL	AT, BE, FR, GE, CH, LUX	EL, IT, ES, PT, (IE)
Letablier (1998) a « family policy models : explicitly family-oriented, less explicitly family-oriented, implicit state support »	FR, BE, LUX	DK, SE, GE, NL	UK, ES, IT
Korpi (2000) « gender policy models (services/transfers balance) and political tendencies »	NO, DK, FI, SE	IE, IT, NL, BE, GE, AT, FR	CH, CA, USA, JP, NZ, UK, AU
Gornick, Meyers and Ross (1997) « policies supportive of the employment of mothers of small children »	SE, DK, FI, FR, BE	AT, AU, W-GE, IT, NL, NO	CA, EL, IE, LUX, PT, ES, UK, USA
Forssén and Hakovirta (2000) « family policy index »	FI, SE, BE, IT	DK, FR, NO, GE, ES	NL, UK, USA, AU

	FIRST GROUP	SECOND GROUP	THIRD GROUP	FOURTH GROUP
Letablier (1998) b « family-employment relationship»	FR, BE, SE, DK, FI	AT, GE, LUX, NL	IE, UK	IT, ES, PT, EL

2.3. Building a child care indicator

The Barcelona European Council of March 2002 put forward the improvement of childcare provisions as an important instrument within the set of active policies aimed at full employment. The Council acknowledged the need to improve public and private childcare provisions in order to increase female participation rates in order to meet the Lisbon targets. Moreover, accessible and high-quality childcare is considered of prime importance to enhance social inclusion of all vulnerable groups in society. Two very precise targets were adopted: by 2010, member states should provide care facilities to cover, first, at least 90% of children aged between three and the age at which compulsory schooling begins and, second, at least 33% of children below three years of age. These objectives have appealed to governments to substantially improve their childcare systems.

As far as outside childcare options are concerned, countries have generally implemented a two-fold system:

Collective childcare systems (crèches, kindergartens, play-schools) : these are public or private

reception facilities with skilled staff providing care for young children during the day.
Subsidized professional childminders who receive children at their home (family day care).
Moreover, most countries distinguish two periods of pre-primary care and education, an earlier period being more related to care (from birth to the child's third birthday) and a later one to education (from three years of age until the age of compulsory education). The locus of authority usually shifts from one period to the other: infants fall under the auspices of the Ministry of Social Affairs while pre-school children are the responsibility of the Ministry of Education. The institutional aspects of childcare tend to be different across and within both age groups. The differences across groups have been accounted for in our analysis by the systematic breakdown of all indicators by age group whereas within the age groups we have been cautious so as to harmonize the different institutional childcare settings.
The criteria on the ground of which we have assessed the different countries' family support systems have been grouped into two main categories that adequately and exhaustively describe a public childcare system. These categories are: (i) the coverage rate of the childcare system measured by four indicators (proportion of children covered, opening hours, public share in the costs, and the child/staff ratio) and (ii) criteria of a financial nature, the cost of childcare for parents with infants and public spending on education for children aged three to six.
The assumptions underlying each of the childcare components are the following: (i) the higher the coverage rate, the longer the opening hours and the larger the public share of the cost, the greater the proportion of children in public (and publicly funded) full-time free care and therefore the easier it is for parents to engage in paid work even at atypical hours, (ii) the smaller the number of children per trained carer, the higher the level of professionalism of a country's public childcare system and the better its quality (iii) the lower the cost of childcare and the more advantages available for lower-income families, the more universal the system and, finally, (iv) the higher the level of public spending per child in education, the better the system's infrastructure, the more attractive employment in this branch, and the higher the quality of child development.

2.3.1. Coverage rate

First we focused on the coverage rate of public childcare systems. Three indicators were combined to evaluate the coverage rate, each broken down by age groups. First, what is commonly denoted as the "coverage rate": it measures the proportion of children of a given age group receiving some form of public or publicly-funded childcare. A second element determining overall coverage of the childcare system is "daily coverage": it refers to the spread of opening hours of formal childcare arrangements. Finally, a third important element to measure public commitment to offer quality childcare is the way in which the cost of childcare is shared between public funds and parent or employer fees. All three components were considered to be equally essential in measuring the actual degree of coverage of a country's childcare system.

2.3.2. Child/staff ratio

In order to evaluate the quality of public childcare provisions, the child/staff ratio was chosen as our next criterion (given that qualifications are difficult to harmonize and that staff generally have some degree of higher education in care or education fields). Since for children of both age groups different forms of formal care exist in different contexts (such as kindergartens, play groups, crèches, nursery schools, and so on...), our indicator is often a weighted average number of children per childminder over the different types of care solutions.
For infants, according to Fiene (2002) there should ideally be three or four children per childminder in centers (crèches or family day care centers) and two staff members per group. For older children, aged three to six, the preferred ratio increases to eight children per carer, but this is still not attained in many European countries.

2.3.3. The cost of childcare for infants (0-3 year-olds)

Countries can apply different mechanisms to subsidize the market cost of childcare. First, they may subsidize childcare itself so that charges fall below market costs for all parents. Second, they may reduce or rebate charges for childcare according to income, family type, age, or number of children in childcare. Charges for childcare exist everywhere for couples, but for single parents most countries provide free or heavily subsidized childcare places. Third, the extra costs of childcare in some countries are mitigated by higher cash benefits with respect to a child of pre-school age as compared to a school-age child . When all direct and indirect subsidies have been taken into account to adjust the household's childcare cost downwards and when all taxes and benefits have been considered, what do different types of households really pay for childcare? This criterion has been broken down by level of income and family type as was done by Bradshaw and Finch (2002).

2.3.4. Public spending for pre-school aged children (3-6 year-olds)

Another indicator of the financial aspects of childcare is the amount spent by governments on early childhood education and care. The goal is to compare countries according to their level of spending per child enrolled in an education program of any kind or form, whether private or public, in order to conclude on various elements such as the quality of care, the earnings level of care staff, capital investment in the sector, material issues, etc. Obviously, public spending per child depends on the public share in the costs of childcare (and also on the coverage rate in public and publicly-funded childcare) and, moreover on the child/staff ratio given that the largest share of expenditure on education and care goes to childminders' wages. In sum, public expenditure allows us to get a better picture of the level of earnings in the sector as well as of other aspects such as quality (material, infrastructure, etc.) and public involvement in the field.

2.3.5. The final childcare indicator and country ranking

We used two methods to compute a synthetic indicator for each of the two age groups considered for each country. First, we used the methodology applied by the UN to construct the Human Development Index (HDI) and rank countries according to their score on this index . Second, we compared this ranking of countries to the one obtained using a software called Decision Lab. Table 2.2. presents the results of this exercise.

Table 2.2. Final ranking of EU-15 member states according to the degree to which their childcare system is supportive of the dual-earner model and young child development

Final score 0-3 (UN)		*Final score 0-3 (DL)*		*Final score 3-6 (UN)*		*Final score 3-6 (DL)*		*Final score all (UN)*		*Final score all (DL)*	
DK	95.55	DK	1.00	DK	86.57	DK	0.80	DK	91.06	DK	0.67
SE	59.66	FI	0.73	SE	78.52	SE	0.66	SE	69.09	SE	0.53
FI	58.18	SE	0.68	FR	39.73	FR	0.57	FI	46.34	FI	0.41
FR	51.28	BE	0.57	IT	37.73	IT	0.52	FR	45.50	FR	0.38
BE	47.49	FR	0.51	FI	34.50	FI	0.38	IT	37.56	BE	0.23
LUX	39.60	GE	-0.02	LUX	33.75	AT	0.33	BE	36.94	IT	0.20
NL	38.41	LUX	-0.04	AT	32.73	BE	0.12	LUX	36.67	AT	0.06
IT	37.40	IT	-0.12	BE	26.39	LUX	0.07	AT	33.38	GE	0.05
GE	37.00	AT	-0.18	GE	23.03	GE	-0.01	GE	30.01	LUX	0.05
AT	34.02	NL	-0.25	UK	17.52	NL	-0.23	NL	27.97	NL	-0.22
PT	33.66	PT	-0.25	NL	15.51	UK	-0.26	UK	24.31	PT	-0.31
UK	33.10	UK	-0.44	PT	10.60	PT	-0.52	PT	22.13	UK	-0.32
EL	27.52	EL	-0.63	ES	8.46	ES	-0.70	ES	16.39	IE	-0.54
ES	24.32	IE	-0.64	IE	4.36	IE	-0.79	EL	14.03	ES	-0.58
IE	9.32	ES	-0.91	EL	0.54	EL	-0.94	IE	6.84	EL	-0.59

Note : "UN" for Human Development Index method, "DL" for Decision Lab method (see Appendix)
Source : own calculations based on most recent data (see Appendix).
Key to read the table : Concerning the final score for children aged zero to three, the UN method is explained as follows : on a scale from zero (worst performer on all variables) to 100 (best performer), Sweden is located at sixty on average for all variables. The DL method is somewhat more complex to interpret but the figures reflect the relative position of each country on a scale from –1 (no country scores worse) to 1(no country scores better).

Note that for each age category, four groups of countries can be distinguished although some countries change between groups according to the age category considered. Four countries are always to be found at the head of the ranking: Denmark, Sweden, Finland, and France. These countries consistently score well on all separate criteria, with Denmark at the very top. Belgium gives up its place in the top group to Italy when pre-school aged children instead of infants are looked at. This has everything to do with a better child/staff ratio and a higher level of public spending for three to six year olds in Italy.
A second group of countries includes Luxembourg, Germany, Austria (except for zero to three year olds in the UN ranking), and either Belgium or Italy as explained above. The Netherlands usually appear in the third group. The Dutch particularity of widespread part-time employment might explain the state's relative disinterest in the field of childcare. The fact that the Netherlands move up to the second group at one instance is probably due to the long opening hours of the few public care facilities that exist for infants. The UK and Portugal also form part of this third group of countries when we look at children aged zero to three although Portugal moves to the very bottom ranking when three to six year olds are considered. The mediocre rankings of these two countries should come as no surprise given that coverage of infants in public care is close to zero, at least in the UK where the emphasis is rather on granting cash benefits and tax credits to enable families to purchase private childcare solutions on the market (infra). In Portugal, although a larger share of children is covered, opening hours are very limited, especially for pre-primary children, and public spending for this age group is the lowest throughout Europe.
Finally, a bottom group of countries includes Spain, Greece, and Ireland for which no further explanation is needed given the poor performance of these countries in all the aspects analyzed within the framework of this section.
The global picture put forward by table 2.2. is in line with existing childcare-oriented welfare state

typologies (e.g. Gustafsson, 1994; Gornick, Meyers and Ross, 1997). The most noticeable exception is Luxembourg which in our ranking comes out as part of the upper middle group of countries whereas Gornick, Meyers and Ross rank it at the very bottom. Nevertheless, given that it ranks first in terms of public spending on child care, that public funds cover a large part of the cost of childcare for parents and that child/staff ratios as well as coverage rates of pre-school aged children are not so bad, in our analysis, Luxembourg deserves to be ranked in the middle. To conclude, it seems that our ranking is quite robust and adequately presents the relative positions of each country with respect to the first dimension of our analysis of public intervention, that is in the field of childcare.

2.4. Building a child cash benefit indicator

A second component, besides public childcare, has been proved to have a considerable impact on households' choices to have children at all or on their number, and that is the system of family support through child cash benefits (Gauthier and Hatzius, 1997; Letablier, 2003).
The amount of cash benefits varies according to the age and rank of the children in the household and to the type of family (lone parents, dual-earner and one-earner couples, etc.). There is a clear tendency towards universalism in all countries (lump-sum payments made for each family or for each child independently of parents' income) except for the Southern European countries of Italy, Spain and Portugal where they are means-tested and thus vary according to the family's income level. In those countries, family policy relies not on the idea of universalism but rather on that of vertical redistribution in order to concentrate means on the most needy. In Greece, most employers proportionally raise the wages of those employees who are heads of family.
The pursuit of universalism in their systems of family cash benefits by most countries serves an important cause. Indeed, universally granted cash benefits are considered an important tool in the fight against child poverty. Firstly, they avoid stigmatizing specific vulnerable groups, are easy to take up given the absence of eligibility conditions and, as a result, efficiently reach all families concerned. Secondly, since benefits are granted on a monthly basis, simultaneously with earnings, they are more easily perceived by parents as a regular financial aid to cover expenses of everyday life, whereas tax relief, given that it is collected with a year's time lag, is tied much less to the expenses that it is supposed to cover but seen more as a bonus. A third reason refers to the so-called wallet to purse phenomenon (Lundberg and Pollack, 1993; 1996). Tax relief is generally paid either to the household head or to the highest-earning working parent (in Belgium, for example), in many instances the father. However, it has been shown that fathers and mothers tend to spend very differently the benefits they receive thanks to their status as parents: mothers are more inclined to spend on behalf of the child while fathers often use the money for personal purposes, especially in the case of a yearly payment. On the contrary, cash benefits are directly linked to the child and mostly granted to the mother which increases the probability of an effective use (see Micklewright, 2003; Bradbury et alii, 2000; Unicef, 2000).

At the outset of our exercise to rank countries according to their score on a synthetic indicator representing the generosity of child cash benefits in a given country, note that we focused on children who are not disabled nor students above the standard age limit applied in the country. We studied the systems for different types of households in order to reflect all possible sources of variation in the benefit systems (according to age and number of children and to account for the presence of two versus one parent).

2.4.1. Income variation

Only Southern European countries are influenced by the level of household income. Portugal and Italy both provide lower amounts as income increases. Spanish policy is quite similar: only households with income below a fixed ceiling can receive benefits. This ceiling – although increasing with the number of children – is so low that only households earning at most half of average female earnings qualify for child benefits. They are granted just a mere 24.25 EUR per child. It follows that Spain holds a position at the lowest end of the ranking. Greece has adopted a flat rate benefit. Moreover, given that almost all employers grant gross wage rises to employed married fathers and lone parents, we have treated these wage supplements as taxable cash benefits that derive from the presence of children.

Table 2.3. Monthly amount of cash benefits per child for working females at 0.5 AFE (+ 0.5 AME for couples) (in % of the corresponding wage, 2003)

Lone parent with 1 child aged 11 months		*Lone parent with 1 child aged 6 years*		*Lone parent with 2 children aged 12 & 6 years*		*Couple with 1 child aged 11 months*		*Couple with 1 child aged 6 years*		*Couple with 2 children aged 12 & 6 years*		*Couple with 3 children aged 16, 12 & 6 years*	
PT	26.5%	AT	19.2%	AT	21.8%	PT	9.7%	AT	7.3%	AT	8.3%	LUX	9.5%
AT	18.4%	DK	15.1%	LUX	17.3%	AT	7.0%	LUX	6.3%	LUX	7.9%	AT	9.1%
DK	16.1%	IE	14.5%	IE	14.5%	GE	6.0%	GE	6.0%	GE	6.0%	BE	6.4%
IE	14.5%	GE	14.1%	GE	14.1%	LUX	5.8%	IE	5.8%	IE	5.8%	IE	6.2%
GE	14.1%	LUX	13.8%	FI	13.9%	IE	5.8%	SE	4.2%	BE	5.0%	GE	6.0%
FI	12.9%	FI	12.9%	DK	12.6%	DK	4.4%	FI	4.1%	FI	4.6%	FR	5.2%
LUX	12.7%	IT	11.9%	BE	11.2%	SE	4.2%	DK	4.0%	SE	4.2%	FI	5.1%
IT	11.9%	SE	9.6%	IT	11.1%	FI	4.1%	BE	3.8%	DK	3.6%	SE	4.6%
SE	9.6%	BE	8.4%	SE	9.6%	UK	3.4%	UK	3.4%	NL	3.3%	IT	4.4%
UK	8.0%	UK	8.0%	NL	8.4%	BE	3.2%	EL	2.9%	EL	3.2%	EL	3.7%
BE	7.2%	PT	8.0%	PT	8.0%	EL	2.9%	NL	2.9%	IT	3.1%	NL	3.6%
NL	6.0%	NL	7.2%	UK	6.7%	IT	2.4%	PT	2.6%	UK	2.9%	DK	3.4%
EL	5.5%	EL	5.5%	EL	6.2%	NL	2.4%	IT	2.4%	PT	2.6%	PT	3.0%
ES	3.6%	ES	3.6%	FR	5.7%	ES	0.0%	ES	0.0%	FR	2.5%	UK	2.7%
FR	0.0%	FR	0.0%	ES	3.6%	FR	0.0%	FR	0.0%	ES	0.0%	ES	0.0%

Source: own calculations based on MISSOC 2003.
Note: "AFE" for National Average Female Earnings and "AME" for National Average Male Earnings.

Table 2.4. Monthly amount of cash benefits per child for working females at 1 AFE (+ 1 AME for couples) (in % of the corresponding wage, 2003)

Lone parent with 1 child aged 11 months		*Lone parent with 1 child aged 6 years*		*Lone parent with 2 children aged 12 & 6 years*		*Couple with 1 child aged 11 months*		*Couple with 1 child aged 6 years*		*Couple with 2 children aged 12 & 6 years*		*Couple with 3 children aged 16, 12 & 6 years*	
PT	11.6%	AT	9.6%	AT	10.9%	AT	3.5%	AT	3.6%	AT	4.1%	LUX	4.8%
AT	9.2%	DK	7.6%	LUX	8.7%	GE	3.0%	LUX	3.1%	LUX	3.9%	AT	4.6%
DK	8.0%	IE	7.2%	IE	7.2%	LUX	2.9%	GE	3.0%	GE	3.0%	BE	3.2%
IE	7.2%	GE	7.0%	GE	7.0%	IE	2.9%	IE	2.9%	IE	2.9%	IE	3.1%
GE	7.0%	LUX	6.9%	FI	7.0%	EL	2.6%	EL	2.6%	EL	2.8%	GE	3.0%
FI	6.4%	FI	6.4%	DK	6.3%	PT	2.6%	SE	2.1%	BE	2.5%	EL	3.0%
LUX	6.4%	EL	4.9%	BE	5.6%	DK	2.2%	FI	2.1%	FI	2.3%	FR	2.6%
EL	4.9%	SE	4.8%	EL	5.2%	SE	2.1%	DK	2.0%	SE	2.1%	FI	2.5%
SE	4.8%	BE	4.2%	SE	4.8%	FI	2.1%	BE	1.9%	DK	1.8%	SE	2.3%
UK	4.0%	UK	4.0%	NL	4.2%	UK	1.7%	UK	1.7%	NL	1.7%	NL	1.8%
BE	3.6%	NL	3.6%	UK	3.3%	BE	1.6%	NL	1.4%	UK	1.4%	DK	1.7%
NL	3.0%	PT	3.1%	PT	3.1%	NL	1.2%	PT	1.0%	FR	1.3%	UK	1.3%
IT	1.4%	IT	1.4%	IT	3.1%	ES	0.0%	ES	0.0%	PT	1.0%	PT	1.1%
ES	0.0%	ES	0.0%	FR	2.8%	FR	0.0%	FR	0.0%	IT	0.3%	IT	0.7%
FR	0.0%	FR	0.0%	ES	0.0%	IT	0.0%	IT	0.0%	ES	0.0%	ES	0.0%

Source: own calculations based on MISSOC 2003.
Note: "AFE" for National Average Female Earnings and "AME" for National Average Male Earnings.

Table 2.5. Monthly amount of cash benefits per child for working females at 1.5 AFE (+ 1.5 AME for couples) (in % of the corresponding wage, 2003)

Lone parent with 1 child aged 11 months		*Lone parent with 1 child aged 6 years*		*Lone parent with 2 children aged 12 & 6 years*		*Couple with 1 child aged 11 months*		*Couple with 1 child aged 6 years*		*Couple with 2 children aged 12 & 6 years*		*Couple with 3 children aged 16, 12 & 6 years*	
PT	7.7%	AT	6.4%	AT	7.3%	EL	2.5%	EL	2.5%	AT	2.8%	LUX	3.2%
AT	6.1%	DK	5.0%	LUX	5.8%	AT	2.3%	AT	2.4%	EL	2.6%	AT	3.0%
DK	5.4%	IE	4.8%	EL	4.9%	GE	2.0%	LUX	2.1%	LUX	2.6%	EL	2.8%
IE	4.8%	GE	4.7%	IE	4.8%	LUX	1.9%	GE	2.0%	GE	2.0%	BE	2.1%
GE	4.7%	EL	4.7%	GE	4.7%	IE	1.9%	IE	1.9%	IE	1.9%	IE	2.1%
EL	4.7%	LUX	4.6%	FI	4.6%	PT	1.7%	SE	1.4%	BE	1.7%	GE	2.0%
FI	4.3%	FI	4.3%	DK	4.2%	DK	1.5%	FI	1.4%	FI	1.5%	FR	1.7%
LUX	4.2%	SE	3.2%	BE	3.7%	SE	1.4%	DK	1.3%	SE	1.4%	FI	1.7%
SE	3.2%	BE	2.8%	SE	3.2%	FI	1.4%	BE	1.3%	DK	1.2%	SE	1.5%
UK	2.7%	UK	2.7%	NL	2.8%	UK	1.1%	UK	1.1%	NL	1.1%	NL	1.2%
BE	2.4%	NL	2.4%	UK	2.2%	BE	1.1%	NL	1.0%	UK	1.0%	DK	1.1%
NL	2.0%	PT	2.1%	PT	2.1%	NL	0.8%	PT	0.7%	FR	0.8%	UK	0.9%
ES	0.0%	ES	0.0%	FR	1.9%	ES	0.0%	ES	0.0%	PT	0.7%	PT	0.7%
FR	0.0%	FR	0.0%	IT	0.7%	FR	0.0%	FR	0.0%	ES	0.0%	ES	0.0%
IT	0.0%	IT	0.0%	ES	0.0%	IT	0.0%	IT	0.0%	IT	0.0%	IT	0.0%

Source: own calculations based on MISSOC 2003.
Note: "AFE" for National Average Female Earnings and "AME" for National Average Male Earnings.

2.4.2. Lone parent allowances

Supplements for lone parents are explicitly granted only in Denmark and Finland, i.e. an additional amount of benefits per household in the former country and per child in the latter one. Given that Italy has an income-related system that is based on the number of household members, lone parents necessarily receive different amounts of benefit than couples. In Ireland, it is possible for lone parents to draw extra money from social assistance although, properly speaking, this is not a supplement for lone parents since the main goal of this measure is to guarantee a minimum income for families in need. A similar point of view is reflected in the French system which guarantees a minimum of 521.52 EUR per lone parent plus 173.54 EUR per child. The Single Parent Allowance (API) is paid out if the beneficiary's income is below this threshold and it covers the observed difference between the guaranteed minimum and his/her income.

2.4.3. Variation with child's age

Some countries have opted to grant a supplement (or lower the amount) according to the child's age (applied either to all children or only to the first qualified child, like in Belgium). A cross-country comparison is quite difficult because of both the differences in the systems that are in place and the reforms that are occurring. For example in France, the age supplement depends on the number of children since it is granted for the 1st child but only if there are at least three children in the family. In the Netherlands and in Belgium, the amount of child benefits is gradually changed according to children's birth date.
In order to reflect these differences in the design of systems across the countries considered we have focused on four ages that separate the age groups within which all first, second and consecutive age-specific adjustments of the amount of child benefits take place in all countries. Although most countries that apply variation with age (AT, BE, NL, FR and LUX) raise the amount with the age of the child, Denmark and Portugal do the opposite, privileging the youngest children.

2.4.4. Combined effect of number and age of children

The greatest changes in family cash benefits are induced by the number of children, not only because of proportionally increasing amounts but also because in most countries, an additional child (until or from a certain rank) provides an extra amount of benefit. Our tables show the total amount per family, divided by the number of children, and take into account the age supplement for those countries that apply it. It can be seen that countries' rankings change dramatically as the number of children (and therefore the age of the eldest) rises. Belgium and Denmark are opposite cases as the former sees its rank improved as number and age of children rise while the latter drops (due to age variation only). Note also that although France grants benefits only from the 2nd child onwards, it becomes quite generous from the 3rd child. This special feature of the French system was inherited from the past when the key issue was not to encourage women to have their first child but rather to provide them with incentives to have three children or more. As a result, family allowances in France are conceived so as to cover the cost of children. This conception contrasts sharply with what is now being put forward as the main objective of family cash support by numerous experts: the fight against child poverty, starting with the first child. Moreover, nowadays it has indeed become an important challenge to provide women with enough incentives to have at least one or preferably two children.

2.4.5. Final score for cash benefits

In order to build a final indicator that summarizes the information for the seven types of families we studied, we have weighted these types according to their share in the overall population of each country.

Table 2.6. shows the final scores. Except for the Southern European countries and especially Greece, rankings do not change according to the level of family income given that cash benefits are mostly universal. At the top we find Austria and Luxembourg which are very generous for all types of families , as are Germany and Ireland, although to a lesser extent (the benefit amount per child is lower for larger German families). A second group of fairly generous countries includes Belgium and Finland, both of which grant supplements to larger families and Finland also to lone parents. Denmark and Sweden follow, with lower amounts quite constants across family types, the former giving supplement for lone parent's families and the latter for larger families. The amount granted by the UK is low compared to the average level of earnings in this country. France lags behind because benefits are granted only from the second child onwards and become very generous only from fourth child onwards.

Table 2.6. Final indicator for cash benefits according to 3 income levels (family-type weighted by country) and overall

Final score 0.5 AFE + 0.5 AME (population weighted)		*Final score 1 AFE + 1 AME (population weighted)*		*Final score 1.5 AFE + 1.5 AME (population weighted)*		*Final indicator all incomes (non income weighted)*	
AT	92.6	AT	98.9	AT	96.2	AT	95.9
LUX	87.0	LUX	91.2	EL	94.6	LUX	89.2
GE	70.0	GE	74.2	LUX	89.4	GE	72.2
IE	67.2	IE	69.3	GE	72.5	IE	68.3
BE	56.3	EL	67.6	IE	68.6	EL	66.4
FI	54.0	BE	58.4	BE	57.7	BE	57.4
SE	47.5	FI	56.3	FI	55.5	FI	55.2
DK	44.6	SE	50.5	SE	49.8	SE	49.3
PT	41.7	DK	47.5	DK	46.4	DK	46.2
EL	37.1	NL	38.5	NL	38.0	NL	37.7
NL	36.6	UK	36.7	UK	35.9	UK	35.3
IT	35.6	PT	31.5	PT	30.5	PT	34.6
UK	33.4	FR	26.0	FR	26.0	FR	25.8
FR	25.4	IT	6.1	IT	0.1	IT	14.0
ES	0.3	ES	0.0	ES	0.0	ES	0.1

Source: own calculations based on MISSOC 2003. See appendix for details on the linear scaling technique used
Note: "AFE" for National Average Female Earnings and "AME" for National Average Male Earnings.

The most relevant typologies to compare our results with are those established by Forssén and Hakovirta (2000) and Letablier (1998). A comparison of table 2.6. with these typologies shows that our results are much more in line with those obtained by Letablier (1998) than with Forssén and Hakovirta (2000). A few countries are nevertheless ranked differently and merit some attention. France, for example, is ranked at the very top by Letablier whereas we find it scores particularly low on the child cash indicator. This is probably due to the penalty that we have given to France for not granting any benefits to the first child in the family thus continuing to adhere to an outdated conception that women need not be encouraged to have a first child and that family allowances serve to cover the cost of children.
On the contrary, in our ranking, Germany comes out at the top whereas it is ranked in the middle by Letablier (1998), probably due to our distinction between cash and tax benefits in this country (infra). The German system appears to be generous over the whole line although slightly less for larger families. We suspect differences in the methodologies used as well as in the criteria

considered to be at the source of the different positions of Germany and the Netherlands in both of the rankings, while the positions of Denmark and Sweden remain the same.

2.5. Building a child tax benefit indicator

For some countries, cash benefits are not the only form of financial public support for families with children. Even though they do not immediately increase the amount of cash available to families and they do not have the same universal character as standard family allowances, we have been careful not to neglect tax benefits as part of our analysis of cash transfers to families with children. Tax benefits are granted by either one of two means: tax allowances or tax credits. Tax allowances allow for deductions to be made from taxable income thus reducing the final amount of taxes to be paid. Tax credits directly affect the amount of tax due. They are subtracted after gross tax has been assessed.

Tax benefits raise a very important redistributive question. Households not paying taxes because they do not have sufficient resources are excluded from any public support the government decides to offer through the tax system and as a result, only better-off families take advantage of such measures. For example, a tax allowance to cover childcare costs is of no use to parents who although active do not pay taxes (or not enough). Such parents cannot or not entirely benefit from any government support of this form. On the contrary, refundable tax credits, such as the ones implemented in the UK and Belgium, function as negative taxes and do allow to expand help to families not liable to pay taxes. Indeed, in this case, if the amount of support offered turns out to be greater that the amount of taxes due by the household in question then not only are no taxes paid but the tax administration reimburses the difference to this household. The tax system is thus effectively used to pass on support to families. Moreover, in the UK, the tax credit is paid out monthly at the same time as family allowances.
Tax benefits in the form of tax allowances raise another problem in terms of fairness, especially in France, Spain and Germany. They tend to increase with family income although this is limited thanks to the existence of ceilings on support offered. However, this means that the richer the family the more help it receives. Such a system based on the questionable principle of horizontal fairness – which requires a household's standard of living to be constant regardless of the presence of children – has therefore been the subject of fierce criticism (Atkinson, 1999). The French family ratio system ('quotient familial') was designed completely in line with this idea that the cost of children stricto sensu increases with family income: better-off children receive more and more expensive leisure and consumption goods compared to children from less well-off families (Ollier, 1999).

Family allowances present a number of clear advantages compared to tax benefits. They are direct and simultaneous whereas tax measures necessarily refer to last year's income and thus can only have a lagged effect. Moreover, a system entirely based on family allowances offers a very high level of transparency compared to the more complicated nature of mixed systems or those transiting by the tax system. It is also important to note that family allowances can be conceived as deriving from the child's own right rather than from that of the surrounding family. Welfare states of the Nordic countries hold high the principle of individual rights. Each person is individually granted a set of social rights. Moreover, the fact that the child does not depend on its parents but is itself entitled to benefits safeguards its rights in case of divorce, shared custody, etc. On the contrary, on the old continent, for example in France, the family is considered to be the unit opening up the right to public support.

In sum, direct cash allowances seem to be the most appropriate, transparent and just means for

the state to financially help families with children.

The tables below present the amounts of tax benefits that are granted to couples with children (lone parents) as compared to the amount of tax due by couples without children (singles): a positive (negative) amount means that taxes are lower (higher) for a given family type than for a couple (or single) without children. We have considered only those tax elements that are likely to influence differently all of our family types (see appendix for more details). Again amounts are expressed in percentage of the corresponding level of mean gross earnings.

The tax system in the three Northern European countries does not distinguish between different types of families. Therefore, the tables below show no tax benefit at any level of income for these countries.
Austria and Ireland make a distinction only between singles and lone parents, whatever the number of children, granting a non wastable tax credit of 364 EUR per family for the former and a wastable credit of 1520 EUR for the latter. In the Netherlands, there is no distinction between couples and singles but for parents, regardless of the number of children they have, a wastable (means-tested) credit is granted. The fact that the amount of the benefit does not vary with family size clearly presents a disadvantage for larger families.

2.5.1. Low earner families

Table 2.7. Monthly amount of tax benefits per child for working females at 0.5 AFE (+ 0.5 AME for couples) (in % of the corresponding wage, 2003)

Lone parent with 1 child aged 11 months		*Lone parent with 1 child aged 6 years*		*Lone parent with 2 children aged 12 & 6 years*		*Couple with 1 child aged 11 months*		*Couple with 1 child aged 6 years*		*Couple with 2 children aged 12 & 6 years*		*Couple with 3 children aged 16, 12 & 6 years*	
UK	82.7%	UK	32.2%	UK	22.8%	UK	14.2%	IT	2.4%	IT	2.3%	BE	2.6%
BE	10.1%	BE	5.3%	BE	5.0%	BE	5.7%	UK	2.1%	BE	1.5%	IT	1.9%
ES	7.4%	IT	4.7%	IT	2.3%	ES	4.2%	NL	1.6%	UK	1.1%	UK	1.3%
IT	4.7%	AT	3.6%	AT	1.8%	IT	2.4%	BE	1.1%	ES	0.8%	ES	0.8%
AT	3.6%	LUX	1.3%	LUX	0.6%	NL	1.6%	ES	1.0%	NL	0.8%	NL	0.5%
LUX	1.3%	ES	1.1%	ES	0.5%	FR	1.3%	FR	1.0%	FR	0.7%	FR	0.5%
FR	0.6%	FR	0.6%	FR	0.4%	LUX	0.7%	LUX	0.7%	LUX	0.4%	LUX	0.2%
DK	0.0%	DK	0.0%	DK	0.0%	PT	0.5%	PT	0.5%	PT	0.2%	PT	0.2%
GE	0.0%	GE	0.0%	GE	0.0%	DK	0.0%	DK	0.0%	DK	0.0%	DK	0.0%
EL	0.0%	EL	0.0%	EL	0.0%	GE	0.0%	GE	0.0%	GE	0.0%	GE	0.0%
IE	0.0%	IE	0.0%	IE	0.0%	EL	0.0%	EL	0.0%	EL	0.0%	EL	0.0%
NL	0.0%	NL	0.0%	NL	0.0%	IE	0.0%	IE	0.0%	IE	0.0%	IE	0.0%
PT	0.0%	PT	0.0%	PT	0.0%	AT	0.0%	AT	0.0%	AT	0.0%	AT	0.0%
FI	0.0%	FI	0.0%	FI	0.0%	FI	0.0%	FI	0.0%	FI	0.0%	FI	0.0%
SE	0.0%	SE	0.0%	SE	0.0%	SE	0.0%	SE	0.0%	SE	0.0%	SE	0.0%

Source: own calculations based on OECD (2004), Bradshaw and Finch (2002), Inland Revenue (2002) for UK, Ministère des Finances (2004) for Belgium, Administration des contributions directes (2004) for Luxembourg, Ministère des Finances (2004) for France and Law 46/2002 of January 18th for Spain.
Note: "AFE" for National Average Female Earnings and "AME" for National Average Male Earnings.

At this level of income, the UK clearly stands out from the other countries because of its exceptionally generous child and working tax credits, both of which are refundable. Note that the huge advantage for lone parents with very young children stems from the generous child care element of the working tax credit. This element amounts to maximum 7126 EUR a year for one child if registered forms of child care are used, compared to the similar credit of max. 575 EUR in France.
The tax allowance for young children (care) in Spain and Belgium explains why, at the same income level, families with a single child aged 11 months receive a more substantial tax benefit than families with one child aged 6. Note, however, that this child care allowance is highly regressive: it increases with income (infra).
Table 2.7. also shows that most countries do not grant any tax benefits at this low level of income. Families in Greece, Ireland, the Netherlands and Portugal do not earn enough to benefit from the wastable child tax credits applied in those countries.
In Germany the explanation is different : the 154 EUR cash benefit per child is the only benefit granted to families with children, at least up to a certain level of income. In fact, in the German system a trade-off continuously takes place between this cash benefit (formally it is a tax credit) and a tax allowance which is computed according to the number of children and parents' marital status. Both types of support are confronted and the most advantageous is retained and offered to the family in question. As already mentioned, up until a very high level of income, the cash benefit always wins the plead. However, at a certain income threshold the reduction in payable taxes due to the tax allowance becomes greater than the 154 EUR cash benefit. As soon as this becomes the case, parents can choose to trade in their cash benefits for this new form of support, a tax allowance that reduces their taxable income. Keep to mind that this concerns only the richest families though, in all other cases the standard cash benefit remains the most generous option. Only couples in which both partners earn 1.5 times the corresponding average wage begin to reach the point where it becomes genuinely interesting to trade in their cash benefits for the existing tax allowance.

2.5.2. Average earner families

Table 2.8. Monthly amount of tax benefits per child for working females at 1 AFE (+ 1 AME for couples) (in % of the corresponding wage, 2003)

Lone parent with 1 child aged 11 months		*Lone parent with 1 child aged 6 years*		*Lone parent with 2 children aged 12 & 6 years*		*Couple with 1 child aged 11 months*		*Couple with 1 child aged 6 years*		*Couple with 2 children aged 12 & 6 years*		*Couple with 3 children aged 16, 12 & 6 years*	
UK	22.9%	LUX	8.9%	LUX	4.4%	ES	4.4%	FR	1.5%	FR	1.4%	FR	1.7%
ES	13.5%	IE	7.8%	IE	3.9%	BE	3.4%	LUX	1.3%	LUX	1.3%	BE	1.3%
LUX	8.9%	ES	5.3%	ES	3.8%	FR	2.6%	IT	1.2%	IT	1.2%	LUX	1.3%
IE	7.8%	FR	3.1%	FR	2.6%	UK	2.0%	UK	1.0%	ES	0.9%	IT	1.2%
BE	7.2%	BE	2.7%	IT	2.6%	LUX	1.3%	ES	0.9%	BE	0.7%	ES	1.1%
FR	5.5%	PT	2.6%	BE	2.5%	IT	1.2%	PT	0.7%	PT	0.7%	PT	0.7%
PT	2.6%	IT	2.6%	PT	2.2%	PT	0.7%	NL	0.7%	UK	0.5%	EL	0.4%
IT	2.6%	UK	2.5%	UK	2.1%	NL	0.7%	BE	0.5%	NL	0.4%	UK	0.3%
AT	1.8%	AT	1.8%	AT	0.9%	EL	0.3%	EL	0.3%	EL	0.3%	NL	0.2%
NL	0.9%	NL	0.9%	NL	0.5%	GE	0.1%	GE	0.1%	DK	0.0%	DK	0.0%
DK	0.0%	DK	0.0%	DK	0.0%	DK	0.0%	DK	0.0%	GE	0.0%	GE	0.0%
GE	0.0%	GE	0.0%	GE	0.0%	IE	0.0%	IE	0.0%	IE	0.0%	IE	0.0%
EL	0.0%	EL	0.0%	EL	0.0%	AT	0.0%	AT	0.0%	AT	0.0%	AT	0.0%
FI	0.0%	FI	0.0%	FI	0.0%	FI	0.0%	FI	0.0%	FI	0.0%	FI	0.0%
SE	0.0%	SE	0.0%	SE	0.0%	SE	0.0%	SE	0.0%	SE	0.0%	SE	0.0%

Source: own calculations based on OECD (2004), Bradshaw and Finch (2002), Inland Revenue (2002) for UK, Ministère des Finances (2004) for Belgium, Administration des contributions directes (2004) for Luxembourg, Ministère des Finances (2004) for France and Law 46/2002 of January 18th for Spain.
Note: "AFE" for National Average Female Earnings and "AME" for National Average Male Earnings.

This average income level falls within the brackets within which the UK's child tax credit no longer varies with income or remains constant (family element). As a result, without the child element of the tax credit which is paid according to the number of children and the family supplement paid in case there is a child under 1 year of age and in the absence of extra advantages for lone parents, the UK's system for couples is no longer the most generous (also because the number of children is no longer taken into account). Spain, Belgium, Ireland, Italy, France and especially Luxembourg (despite its relatively higher level of average earnings) turn out to offer substantial support to couples with children and lone parents. Austria, the Netherlands, Ireland and Luxembourg grant an equal amount for lone parents with one or two children. With a system mostly based on tax allowances, Spain and France become very generous as the income increases (and number of children), while Italy and the UK whose system is based on means-tested tax credits follow the opposite trend, although in our range of earnings, Italy keeps its generous position (maximum credit threshold based on individual income as opposed to UK, based on joint income).

2.5.3. Higher earner families

Table 2.9. Monthly amount of tax benefits per child for working females at 1.5 AFE (+ 1.5 AME for couples) (in % of the corresponding wage, 2003)

Lone parent with 1 child aged 11 months		*Lone parent with 1 child aged 6 years*		*Lone parent with 2 children aged 12 & 6 years*		*Couple with 1 child aged 11 months*		*Couple with 1 child aged 6 years*		*Couple with 2 children aged 12 & 6 years*		*Couple with 3 children aged 16, 12 & 6 years*	
ES	10.2%	LUX	5.8%	LUX	3.8%	ES	3.5%	FR	1.7%	FR	1.7%	EL	2.1%
LUX	5.8%	IE	5.2%	ES	2.8%	FR	2.4%	LUX	0.9%	LUX	0.9%	FR	1.9%
IE	5.2%	ES	4.0%	FR	2.8%	BE	2.3%	IT	0.8%	IT	0.8%	BE	0.9%
FR	5.1%	FR	3.5%	IE	2.6%	LUX	0.9%	ES	0.7%	ES	0.7%	LUX	0.9%
BE	4.8%	BE	1.8%	IT	1.7%	IT	0.8%	GE	0.6%	GE	0.5%	ES	0.9%
UK	3.4%	PT	1.8%	BE	1.7%	GE	0.6%	PT	0.5%	BE	0.5%	IT	0.8%
PT	1.8%	IT	1.7%	PT	1.5%	PT	0.5%	NL	0.5%	PT	0.5%	PT	0.5%
IT	1.7%	UK	1.7%	UK	0.8%	NL	0.5%	BE	0.4%	NL	0.2%	GE	0.5%
AT	1.2%	AT	1.2%	AT	0.6%	EL	0.1%	EL	0.1%	EL	0.1%	NL	0.2%
NL	0.6%	NL	0.6%	NL	0.3%	DK	0.0%	DK	0.0%	DK	0.0%	DK	0.0%
DK	0.0%	DK	0.0%	DK	0.0%	IE	0.0%	IE	0.0%	IE	0.0%	IE	0.0%
GE	0.0%	GE	0.0%	GE	0.0%	AT	0.0%	AT	0.0%	AT	0.0%	AT	0.0%
FI	0.0%	FI	0.0%	FI	0.0%	FI	0.0%	FI	0.0%	FI	0.0%	FI	0.0%
SE	0.0%	SE	0.0%	SE	0.0%	SE	0.0%	SE	0.0%	SE	0.0%	SE	0.0%
EL	-1.1%	EL	-1.1%	EL	-1.2%	UK	0.0%	UK	0.0%	UK	0.0%	UK	0.0%

Source: own calculations based on OECD (2004), Bradshaw and Finch (2002), Inland Revenue (2002) for UK, Ministère des Finances (2004) for Belgium, Administration des contributions directes (2004) for Luxembourg, Ministère des Finances (2004) for France and Law 46/2002 of January 18th for Spain.
Note: "AFE" for National Average Female Earnings and "AME" for National Average Male Earnings.

Nothing has changed in the amount of the benefits as compared to the previous level for a certain number of countries, whose credits have reached their full effect (LUX, NL, BE, AT, PT). Italy is in the same situation but only because this level of income is under the first threshold after which credit is reduced. France and Spain keep their rising of benefits while German couples start to benefit from the tax allowance for children. British couples do no longer benefit from the child credit and lone parents in this country have reached the family element floor of this same credit. Finally, Greece stands out as very atypical at this level (in fact, already at the previous level) : while the effect of the taxation of the benefits granted by employers to heads of family is negative for singles with one or two children, despite the tax exemption applied to their income (the same holding for couples with less than three children but still around zero), couples with at least three children greatly benefit from the tax exemption applied individually on earned incomes which is much higher than for 2 children (see Appendix table A.2.8).

The final scores in Table 2.10. (column 4) show a relatively clear picture: only a few countries rely on the tax system to support families with children (the UK, BE, IT, FR, ES and to a lesser extent, LUX). The UK, Italy and Belgium by far outnumber the other countries as far as families at lower income levels are concerned but they have to clear way to other countries like Spain, Luxembourg and especially France regarding higher income families.

Table 2.10. Final indicator for tax benefits, in general and according to 3 income levels (family-type weighted by country)

Final score 0.5 AFE + 0.5 AME (population weighted)		*Final score 1 AFE + 1 AME (population weighted)*		*Final score 1.5 AFE + 1.5 AME (population weighted)*		*Final indicator all incomes (non income weighted)*		*Final indicator all incomes + regressivity index (non income weighted)*	
IT	75.4	FR	89.0	FR	90.3	FR	67.9	IT	63.8
UK	69.4	LUX	75.3	ES	53.9	IT	60.6	BE	58.3
BE	65.4	ES	71.7	LUX	45.7	BE	54.0	FR	52.1
ES	35.1	IT	66.5	IT	39.9	ES	53.6	UK	52.0
NL	28.7	BE	58.7	BE	37.8	LUX	45.1	ES	49.5
FR	24.3	PT	44.4	GE	26.4	UK	38.7	LUX	39.0
LUX	14.4	UK	39.9	PT	26.3	PT	26.6	NL	29.7
PT	9.1	NL	22.3	EL	22.8	NL	22.1	PT	27.2
AT	0.6	EL	18.1	NL	15.3	EL	13.6	EL	15.7
DK	0.0	IE	5.1	UK	6.8	GE	9.1	IE	12.8
GE	0.0	AT	1.3	IE	5.2	IE	3.4	GE	11.3
EL	0.0	GE	0.8	SE	3.9	AT	1.4	FI	9.7
IE	0.0	DK	0.0	AT	2.4	SE	1.3	SE	9.2
FI	0.0	FI	0.0	FI	1.6	FI	0.5	DK	9.0
SE	0.0	SE	0.0	DK	1.0	DK	0.3	AT	8.6

Source: own calculations based on OECD (2004), Bradshaw and Finch (2002), Inland Revenue (2002) for UK, Ministère des Finances (2004) for Belgium, Administration des contributions directes (2004) for Luxembourg, Ministère des Finances (2004) for France and Law 46/2002 of January 18th for Spain. See appendix for details on the linear scaling technique used.
Note: "AFE" for National Average Female Earnings and "AME" for National Average Male Earnings.

However, the main problem with our aggregated indicator in column four is that it does not account for the strong degree of regressivity that is built into the tax systems of some countries (mostly Spain and France but also Germany) given that it is a simple average over all income levels (first three columns). Therefore, we have built a second indicator that does take into consideration the regressive character of the system in those countries that rely on tax allowances or wastable tax credits. The UK comes out at the top of this new ranking while France and Luxembourg, due to their tax allowances for lone parents, move slightly downwards. At the opposite end of the ranking, countries like Austria, Ireland and Nordic countries, given that they do not distinguish between income levels, obtain improved scores.

Again we think it is most appropriate to compare our results with those obtained by Letablier (1998). As regards the continental European countries, both typologies are exactly the same. On the contrary, the Scandinavian countries as well as Germany are better ranked in Letablier's study. This is probably due to the fact that we specifically looked at the difference in tax benefits between families with and without children and that neither Denmark nor Sweden apply tax advantages related to parenthood. As regards Germany, our indicator has penalized the high rate of regressivity of its child tax benefits which are far more advantageous for richer families. Finally, the sharpest contrast between our typology and Letablier's concerns Spain and Italy, ranked at the very bottom by Letablier, while we find Italy to come in third and Spain fifth. Italy's high rank is due to its particular generosity towards low-earners. Spain on the other hand, implements extremely generous tax benefits all along but is somewhat penalized because of the regressivity of its system. In order to get a clearer picture of the joint impact of cash and tax benefits, and knowing that amounts of cash benefits are generally higher than tax relief in most countries, we should compare Letablier's typology to the one that results from a combination of our tax and cash indices.

2.5.4. Combined indicator of cash and tax benefits

Table 2.11. Final indicator for cash and tax benefits, in general and according to 3 income levels (family-type weighted by country)

Final score 0.5 AFE + 0.5 AME (population weighted)		*Final score 1 AFE + 1 AME (population weighted)*		*Final score 1.5 AFE + 1.5 AME (population weighted)*		*Final indicator all incomes (non income weighted)*		*Final indicator all incomes + regressivity index (non income weighted)*	
LUX	84.0	LUX	95.6	LUX	91.3	LUX	90.3	LUX	80.3
AT	81.3	AT	70.5	EL	78.2	AT	73.3	AT	67.1
BE	71.8	BE	60.6	AT	68.0	BE	62.9	BE	64.0
UK	61.8	EL	48.1	GE	61.6	GE	56.1	GE	50.6
GE	59.6	GE	46.9	FR	59.9	EL	51.4	IE	47.6
IE	59.0	IE	45.9	BE	56.2	IE	48.7	EL	47.2
IT	51.4	FR	39.7	IE	41.3	FR	41.9	UK	43.3
FI	44.3	UK	32.2	FI	26.5	UK	35.2	FR	36.6
NL	37.5	FI	29.6	SE	21.3	FI	33.5	FI	34.0
SE	36.7	PT	23.2	PT	20.7	SE	27.0	NL	30.3
DK	33.7	SE	22.9	ES	19.9	NL	26.5	IT	28.4
PT	30.9	NL	22.2	NL	19.9	PT	24.9	SE	27.8
EL	27.9	DK	21.0	DK	18.8	DK	24.5	DK	26.0
FR	26.1	ES	16.5	UK	11.7	IT	20.9	PT	25.5
ES	3.8	IT	9.5	IT	1.7	ES	13.4	ES	16.8

Source: own calculations based on OECD (2004), Bradshaw and Finch (2002), Inland Revenue (2002) for UK, Ministère des Finances (2004) for Belgium, Administration des contributions directes (2004) for Luxembourg, Ministère des Finances (2004) for France and Law 46/2002 of January 18th for Spain. See appendix for details on the linear scaling technique used.
Note: "AFE" for National Average Female Earnings and "AME" for National Average Male Earnings.

A combined comparison of tax and cash benefit systems across the EU-15 allows us to confront countries as to their financial generosity towards families with children, keeping to mind that both systems have different advantages and drawbacks, as discussed above. It follows that the result of this assimilation should be interpreted with great caution (for example, by adding both indicators we obtain a total amount which ignores the time lag which necessarily affects most tax benefits). A final indicator accounting for all family types at different income levels has been computed in the exact same way, based on total monthly amounts of benefits (cash + tax) paid out in the different countries.

Three countries lead the overall ranking (fifth column), Luxembourg, Austria and Belgium, all of which offer very generous cash benefits or tax reductions (child care relief or support specifically targeting lone parents). The UK, Germany, Ireland and Greece form part of a second group, the UK offering extremely generous tax cuts to low and average earners (and lone parents) while the other three focus more on cash benefits. Note that France is penalized since it does not grant cash benefits to families with only one child. Southern European countries except for Greece systematically hold positions at the bottom end of the ranking. And as far as low income families are concerned, France scores no better. Italy on the other hand turns out to be much more generous at their account thanks to the means-tested cash benefits. Finally, Northern European countries do not score particularly well, neither do the Netherlands, because of the absence of tax relief and the lower average benefit amount compared to the relatively high level of average earnings (especially Denmark and Sweden).

2.6. Building a maternity leave indicator

Table 2.12. Maternity and paternity leave duration and payment

Qualification period (days)		*Maternity leave period (weeks)*		*Average replacement rate (%)*		*Paternity leave period (days)*		*Average replacement rate (%)*	
AT	0	IT	21.7	GE	100%	FI	18	EL	100%
FI	0	DK	18	ES	100%	FR	14	ES	100%
IT	0	IE	18	FR	100%	BE	10	FR	100%
NL	0	UK	18	LUX	100%	DK	10	LUX	100%
UK	0	SE	18	NL	100%	SE	10	NL	100%
DK	21	FI	17.5	AT	100%	PT	5	PT	100%
GE	84	PT	17.1	PT	100%	ES	2	FI	100%
ES	180	EL	17	IT	80%	LUX	2	BE	87%
BE	182.5	ES	16	SE	80%	NL	2	SE	80%
LUX	182.5	FR	16	BE	77%	EL	1	DK	51%
PT	182.5	LUX	16	IE	70%	GE	0	GE	0%
SE	182.5	NL	16	FI	66%	IE	0	IE	0%
EL	200	AT	16	DK	62%	IT	0	IT	0%
IE	273	BE	15	EL	50%	AT	0	AT	0%
FR	304	GE	14	UK[1]	43%	UK	0	UK	0%

Note: In the UK, women who have been employed for one year by the same employer are entitled to twenty-nine weeks, compensated at 90% of their earnings for six weeks and at a flat-rate for a further twelve weeks (Moss and Deven, 1999).
Source: See Appendix Table A.2.4.
Key to read the table: In Belgium, in 2003, maternity leave lasts for fifteen weeks during which wage is replaced at 77% on average; there is a ten-day paternity leave paid at 87% of fathers' wages.

We have compared different regulatory settings for maternity leave according to three basic criteria. The first is the implementation of a qualification period and its length. Indeed, the right to maternity leave (mostly payment) is in some countries made conditional upon a former period of employment or payment of social contributions. The longer this period, the more limited the access to maternity leave. Therefore, countries such as France, Ireland, and Greece score very badly on this indicator. The length of the leave is necessarily equal or above 14 weeks, the minimum period required by the EC. A leave of this length (total period before and after birth) is believed to be necessary in medical terms to allow women to recover fully (physically and mentally) after having given birth. The table shows that maternity leave is longest in Italy. All EU-15 member states but Germany offer a longer leave than that set forward by the EC. The length of the maternity leave reflects different views as to the benefits and drawbacks of children's early socialization although parental leave provisions are even more appropriate signals of these ideas (infra). From our point of view in which women's labor market position is of utmost importance, we are not in favor of extending the maternity leave beyond the period that is actually needed from a medical perspective. Such a practice obscures the difference between maternity and parental leave which we believe is crucial. Therefore, we have chosen to neglect the leave that exceeds 18 weeks[6]. Note that only Italy is concerned given its very long maternity leave. As far as this maximum period is concerned, our indicator accounts for the wage replacement rate that is applied during this period. The wage replacement rate of the maternity leave is

[6] Note that for Sweden, there is no paid post-natal maternity leave because it is integrated in the general parental leave scheme. However since we must take into account that Swedish working women are protected during this period and receive a wage replacement rate of 80%, we have considered 18 weeks of paid leave as the duration of maternity leave so that comparisons with the other countries are made possible. See infra for more details and a discussion of the disadvantages inherent to an integrated system as the Swedish one.

important to assess the quality of the different countries' systems. This rate is quite high in most countries, except in the UK and Greece where it reaches only around 50%. In Denmark, maternity leaves are compensated at the full rate unemployment insurance benefit as is the case for parental leave. This corresponds to 60% of average previous female earnings. The length of the leave as well as the replacement rate have been combined to obtain a new indicator that expresses the 18-week maternity leave in an equivalent number of working days that are fully paid. Similarly, information regarding the length of the paternity leave and the wage replacement rate were combined to obtain the equivalent of the leave in fully paid working days (Table 2.12.). For fathers, only a few countries offer real paternity leaves, between five days in Portugal and eighteen working days in Finland, the famous "father's month". In Finland despite full wage replacement only 64% eligible fathers took paternity leave in 1998. The reason for this is that the Finish paternity leave is conceived more like a parental leave discouraging many fathers by its length (one month). During the first year following its implementation, 59% of eligible men in France used their right to an eleven-day paternity leave . It is reasonable to believe that this percentage will rise in time. In Denmark, the low compensation explains why only 58% of eligible men took paternity leave (1998) while in Sweden with its more generous system, 75% took leave in 2002 (cfr. Appendix table A.2.6 for details).

The scores on the indicators that measure the equivalent of both leaves in number of fully paid days differ noticeably across the countries. Denmark, the UK, and Finland fall in the new ranking due to the relatively low wage replacement rate during maternity leave.

The construction of this equivalent fully paid period has paved the way for a ranking of countries with respect to each leave as well as for a final classification based on countries' generosity in the combined domains of maternity and paternity leaves. Finland and France stand out quite clearly from the other countries while Ireland, the UK, and Greece share particularly low ranks which result, at least for the latter two countries, from the absence of a paternity leave and the low level of replacement income.

Table 2.13. Equivalent fully paid maternity/paternity leave and ranking of countries

Maternity leave fully paid working days		*Paternity leave fully paid working days*		*Final score for maternity leave*		*Final score for paternity leave*		*Final score for birth leaves*	
PT	86	FI	18	NL	92.21	FI	100.00	FR	80.84
ES	80	FR	14	AT	92.21	FR	77.78	FI	78.10
FR	80	BE	9	IT	80.87	BE	48.56	PT	73.87
LUX	80	SE	8	PT	79.99	SE	44.44	NL	70.96
NL	80	PT	5	ES	72.47	PT	27.78	AT	66.53
AT	80	DK	5	LUX	72.20	DK	26.97	SE	63.73
IT	72	ES	2	GE	68.83	ES	11.11	ES	61.09
SE	72	LUX	2	SE	60.86	LUX	11.11	LUX	60.95
GE	70	NL	2	FI	60.69	NL	11.11	IT	56.93
IE	63	EL	1	FR	58.87	EL	5.56	GE	49.93
BE	58	GE	0	DK	52.47	GE	0.00	BE	49.78
FI	58	IE	0	BE	40.70	IE	0.00	DK	43.87
DK	54	IT	0	IE	38.19	IT	0.00	IE	31.17
EL	43	AT	0	UK	33.33	AT	0.00	UK	16.67
UK	39	UK	0	EL	17.15	UK	0.00	EL	12.72

Source: own calculations based on linear scaling technique (see Appendix for details)

Although there is no appropriate typology to compare our results with, our ranking based on the generosity of the different countries' birth leave systems does suggest to question the widespread conception that the Nordic countries should serve as examples for good care leave policies. Indeed, in terms of maternity leave or equivalent leave around birth, they offer replacement rates that are below 100%, provided by many of the other EU-15. They seem to emphasize their support either on longer leave (parental leave, infra) or on child care facilities (most developed with France and Belgium).

2.7. Taking into consideration parental leave?

Parental leave is characterized by a gender bias that strengthens the traditional role models of mothers and fathers (Fagnani and Letablier, 2003; Périvier, 2003). In general, different factors may help to explain this finding. First, in some countries, traditional family norms are still more binding than in others. Second, full-time employment often remains a male virtue. Third, employers of typically male-dominated industry branches are likely to be less in favour of an employee taking parental leave than employers in typically female-dominated sectors. For example, in Denmark and in France, of all men taking up parental leaves the majority are employed in typically female sectors of activity (Meilland, 2001, Boyer and Renouard, 2003). Economic reasons also play a role, more precisely with respect to the amount of the parental leave allowance. Moreover, within a couple, it is most often the woman who is the least well paid and thus intra-household financial motivations generally go at the expense of women's level of activity. Such financial motivations are of course less powerful when parental leaves are wage-related such as in Sweden, Finland, and Italy. A wage-related payment allows alleviating the effect of the wage differential between men and women on the decision of who is to take the parental leave. Moreover, amounts differ substantially across those countries that apply lump-sum payments (they are four times as high in Luxembourg compared to Austria). In France, fathers who benefit from the child-raising allowance (APE) most often form part of atypical couples in which the female has the highest earnings. Moreover, their unemployment rate is three times as high as that of other men (Boyer and Renouard, 2003). The more women interrupt their professional career the more their wages and the quality of jobs to which they have access deteriorate (Pylkänen and Smith, 2003, Stoiber, 1990). This is a vicious circle reinforcing families' choice to let the woman take the leave which again enhances her unequal treatment in the labour market (Périvier, 2004a). Part of the gender wage gap (17% in Denmark (Meilland, 2001) ; 27% in France (Meurs and Ponthieux, 2000), 14% in the United Kingdom (Chambaz, 2003)) can be explained by the more frequent career interruptions of women in the form of parental leave (Pylkänen and Smith, 2003). Leave-taking is anticipated by employers and makes them more reluctant to hire women (at least for some types of jobs as Fagnani (1999) shows for supermarkets in France and Germany and de Henau and Meulders (2003) for university researchers across Europe).

There is only one way to alleviate the negative effect of parental leave on mothers' employment' and that is by having fathers take this leave more frequently and for a longer period than they currently do. Although we have not included Norway in our study, the father quota, introduced in 1993, pushed fathers' leave taking rate up from 3% to 70% in 1995. This measure consists in four additional weeks of parental leave for fathers. In case they do not take this leave, the total parental leave period is reduced by one month (Bruning et Plantenga, 1999). The overall length of such periods of inactivity should be reduced and systematically combined with training courses that enhance the re-entry of beneficiaries in the labour market. In all other cases, parental leave is inevitably bound to reduce workers' employability (Périvier, 2004b). Moreover, leaves risk having a reputation effect on the whole of the female population in general: employers possibly take into

account the high probability that young women (vs. young men) will go on parental leave (Fagnani, 1996; Albrecht, Björklund and Vroman, 2001; Eiro, 2001b). De facto, they might consider women to constitute a less stable work force than men which is very likely to be reflected in their wages.
From the above discussion it should be clear that parental leave is, to say the least, a very ambiguous form of public support. Compared to its goal of facilitating the conciliation of work and family life, we suspect that its price in terms of professional segregation and gender inequality is one that is too high to pay. As a result, we have preferred to objectively present the way parental leave schemes are organized throughout the EU-15 and have not attempted to evaluate and compare the countries in order to build a classification.

The length of the parental leave substantially differs across countries: from the minimum period required by the EC directive of three months per parent (Belgium, Portugal, and the Netherlands) to a very long leave until the child reaches the age of three (France, Germany, Spain, Austria, and Finland).
More important than the absolute length of parental leave available to parents is the period during which they receive wage compensation. Relative to total leave duration, table 2.13. shows that in some countries the whole leave is paid (Belgium, France , Austria, Finland, and Luxembourg) whereas in others it is completely unpaid (Greece, Spain, Ireland, the Netherlands, and the UK). In the Netherlands, leave indemnification is to be negotiated with the employer. For example, in the public sector, parental leave beneficiaries receive 75% of their wages (NIDI, 2003). However, in the private sector, only few collective agreements (6% in 2000) include payment of the parental leave (replacement rate up to 30%). Parental leave is compensated either by means of a lump-sum payment (Belgium, Denmark, Germany, France, Luxembourg, and Austria) or proportionally to parents' wages (30% in Italy compared to 66% in Finland and 80% in Sweden). Moreover, the latter two countries offer a flat-rate payment during the last part of the leave (ninety days in Sweden and more than two years in Finland) (Math and Meilland, 2004).
Whether or not parental leave is paid, women's attachment to the labour market greatly depends on the existence of job protection during the leave. The European Directive requires that a job guarantee be offered, that is the right to return to the same or an equivalent job. In Spain, job protection covers only the first year of parental leave, and in the Netherlands, an employment guarantee is included only in some collective agreements, especially in the social services sector. In the other countries, the whole leave is protected. However, the same cannot be said for pension and seniority rights: France and Austria offer guarantees only for half of the leave while in Ireland, the Netherlands, and the UK these rights are not legally safeguarded but left to the discretion of the employer. In Greece, pension and seniority rights are suspended unless the employee bears the total sum of social contributions due (employer's and employee's).

Table 2.14a. Features of parental leave schemes throughout the EU-15

total leave duration (months)		*job-protected period (% of total leave)*		*Seniority-protected period (% of total leave)*		*paid period (% of total leave)*		*father period (months)*		*transferable months*		*min. leave to be taken up as a % of usual working time*		*child age limit (years)*	
FI	36	BE	100%	BE	100%	BE	100%	IT	7	BE	0	DK	8%	DK	9
GE	36	DK	100%	DK	100%	FR	100%	LUX	6	EL	0	IE	10%	GE	8
FR	36	GE	100%	GE	100%	LUX	100%	AT	6	IE	0	NL	10%	IT	8
AT	36	EL	100%	IT	100%	AT	100%	UK	4.15	IT	0	SE	13%	NL	8
ES	36	FR	100%	LUX	100%	FI	100%	EL	3.5	LUX	0	FI	15%	SE	8
SE	18	IE	100%	PT	100%	SE	79%	IE	3.23	NL	0	BE	20%	PT	6
LUX	12	IT	100%	FI	100%	DK	70%	BE	3	PT	0	FR	20%	IE	5
IT	11	LUX	100%	SE	100%	GE	67%	NL	3	UK	0	UK	20%	LUX	5
DK	10.6	AT	100%	FR	50%	IT	55%	PT	3	DK	10.6	GE	25%	UK	5
UK	8.3	PT	100%	AT	50%	PT	8%	SE	2	SE	11.8	IT	25%	BE	4
EL	7	FI	100%	ES	33%	EL	0%	DK	0	AT	24	ES	33%	EL	3.5
IE	6.5	SE	100%	EL	0%	ES	0%	GE	0	FI	36	PT	33%	ES	3
BE	6	UK	100%	IE	0%	IE	0%	ES	0	GE	36	LUX	50%	FR	3
NL	6	ES	33%	NL	0%	NL	0%	FR	0	FR	36	AT	50%	AT	3
PT	6	NL	0%	UK	0%	UK	0%	FI	0	ES	36	EL	100%	FI	3

Source: see Appendix table A.2.5

Key to read the table: In Belgium in 2003, the total period of parental leave available for both parents is six months. The whole leave is paid, and the job is protected safeguarding parents' future return to their post. Moreover, pension and seniority rights are safeguarded as opposed to the Netherlands, for example, where they are suspended. Leave has to be taken before the child reaches the age of four. Leave does not need to be taken at a full-time rate but can be taken by reducing working hours by 1/5 in which case total leave covers a period of fifteen months. Given that parental leave is an individual right, none of it can be transferred between parents. Fathers like mothers are entitled to a three-month leave.

Table 2.14b. Wage replacement rates during parental leave, by sex

Average male replacement rate during 1st month		*Average female replacement rate during 1st month*		*Average male replacement rate during paid father period*		*Average female replacement rate during mother and/or transferable periods*	
SE	80.0%	SE	80.0%	SE	80.0%	LUX	62.5%
PT	75.0%	FI	66.0%	LUX	52.0%	SE	53.2%
FI	66.0%	LUX	62.5%	IT	30.0%	DK	41.4%
LUX	52.0%	DK	59.5%	PT	23.1%	BE	27.0%
DK	48.5%	IT	30.0%	BE	22.1%	AT	25.6%
IT	30.0%	BE	27.0%	DK	0.0%	FR	25.6%
BE	22.1%	AT	25.6%	GE	0.0%	FI	22.5%
FR	20.6%	FR	25.6%	EL	0.0%	GE	9.1%
AT	15.6%	GE	13.7%	ES	0.0%	EL	0.0%
GE	10.3%	EL	0.0%	FR	0.0%	ES	0.0%
EL	0.0%	ES	0.0%	IE	0.0%	IE	0.0%
ES	0.0%	IE	0.0%	NL	0.0%	IT	0.0%
IE	0.0%	NL	0.0%	AT	0.0%	NL	0.0%
NL	0.0%	PT	0.0%	FI	0.0%	PT	0.0%
UK	0.0%	UK	0.0%	UK	0.0%	UK	0.0%

Source: own calculations and Appendix table A.2.5

Key to read the table: In Belgium in 2003, the lump sum paid to parents in leave corresponds to 22.1% of male average earnings and 27% of female average earnings during the first month. Note that this amount is maintained during the whole period which is not the case for Sweden, Portugal (for fathers) and Finland.

With regard to qualification conditions, some parental leave schemes impose employment and seniority conditions, mainly one year of work most often with the same employer (Belgium, Greece, France, Ireland, Luxembourg, the Netherlands, and the UK).

The right to parental leave can be more or less flexible. In France, Spain, Austria, and Finland, parental leave policies are targeted at parents of young children (up to three years old). Leave thus needs to be taken immediately following childbirth. In Sweden, Italy, the Netherlands, and Germany, it can be taken more freely before the child reaches the age of eight.

The degree of flexibility is also translated in the possibility of dividing the leave in time. Most leaves are fractionable but to very different degrees. For example, in France, leave has to be taken in periods of at least one year while in Sweden, the UK and, Ireland, taking leave by the day is even possible (although the employer needs to agree in the latter two countries). In Germany, if only one year is taken instead of two or three, the monthly lump-sum payment of the leave is higher (by around 50%), which is quite an incentive for parents to opt for a shorter leave.

In all countries but Greece, leave can be taken on a part-time basis with a proportional extension of its duration except for Austria and France where leave is bounded by a low child age limit. This part-time leave taking possibility exists in order to avoid parents becoming totally disconnected from the labor market. Nevertheless, the extent of flexibility varies greatly across countries. In Luxembourg, there is only the possibility of taking half-time leave, and this in one draw, and in Austria, the protective measures implemented through parental leave legislation (dismissal, etc.) do not extend to part-time work/leave. On the contrary, countries such as Sweden, Ireland, and the UK, and also Denmark, provide a very flexible system of working hours and leave arrangements allowing for half days to be taken or for a proportional reduction of working hours on all working days (Sweden), sometimes in agreement with the employer. In Denmark, parental leave could initially be taken on a part-time basis only in order to ensure that parents continuously stayed in touch with the labor market. In 1997, this measure was revised and hence it is possible to take three months of full-time leave provided

the employer agrees (Bruning et Plantenga, 1999).

Recalling the country ranking we obtained after having analyzed birth leave systems, we find that France and Finland, two countries that scored excellently on the birth leave indicator, perform very badly in terms of parental leave because it is too long and poorly paid and as such a real employment trap. On the contrary, Denmark and Sweden come out as leaders in terms of parental leave although they held worse positions in the birth leave ranking. Indeed, parental leave policies are an important policy component in Denmark and Sweden. A generously paid and attractive leave scheme is offered during the first year of life of children after which the system of well-organized public child care takes over. However, we cannot stress enough that no matter how attractive the parental leave may be, it entails important career consequences because of mothers' complete drop-out from the labor market during the first year following childbirth. This finding invites a serious reflection on conceptual frameworks in which the Nordic countries are treated as a homogeneous group and advanced as policy models for the rest of Europe.

2.8. Conclusion

Table 2.15. Final rankings of countries in the three fields of child policy

Index of child care		*Index of birth leaves*		*Index of cash and tax benefits*	
DK	91.06	FR	80.84	LUX	80.3
SE	69.09	FI	78.10	AT	67.1
FI	46.34	PT	73.87	BE	64.0
FR	45.50	NL	70.96	GE	50.6
IT	37.56	AT	66.53	IE	47.6
BE	36.94	SE	63.73	EL	47.2
LUX	36.67	ES	61.09	UK	43.3
AT	33.38	LUX	60.95	FR	36.6
GE	30.01	IT	56.93	FI	34.0
NL	27.97	GE	49.93	NL	30.3
UK	24.31	BE	49.78	IT	28.4
PT	22.13	DK	43.87	SE	27.8
ES	16.39	IE	31.17	DK	26.0
EL	14.03	UK	16.67	PT	25.5
IE	6.84	EL	12.72	ES	16.8

Source: see Appendix for calculations.

The country classification derived from the childcare indicator presents many similarities with some of the welfare state typologies, in particular those established by Gornick, Meyers and Ross (1997) and Letablier (1998). The same cannot systematically be said about the rankings based on our other indicators.

While the Nordic countries are characterized by public childcare arrangements of the highest quality, in particular Denmark and Sweden, they drop to the middle of the ranking when the generosity of their system of cash benefits is considered and to the very bottom even when tax benefits are analyzed. These countries have clearly chosen to support working families with children by means of an individualized tax system and a major emphasis on public services. As regards maternity and paternity leaves, the three Nordic countries do not share a common behavior: Finland comes out second, Sweden in sixth position and Denmark twelfth. They are

all characterised by very developed systems of parental leave of around one year and paid at more than 50% of previous wage. However, at the same time they remain very gender-biased and generate negative effects on future earnings and gender segregation.
The relative positions of France and Belgium, two countries that are also included in the top group in the ranking of Gornick, Meyers and Ross and in our child care indicator, follow different paths as far as the other dimensions are concerned. Belgium is respectively ranked sixth, sixth, second and eleventh on the childcare, cash benefit, tax benefit and maternity leave indicators. France is ranked fourth above Belgium in the childcare classification and especially first in the birth leave index. However, it is important to keep to mind that the French system has a major drawback: it grants no cash benefits to the first child in the family. Its scores then contrast sharply on the cash and tax benefit indicators: France is in the thirteenth position in terms of cash support compared to its third place when tax benefits are concerned. It holds true that both countries have very heterogeneous systems that offer a mix of different types of public support to working parents although it should be pointed out that in France intervention through the tax system plays a very important role despite all the flaws of such a type of support in terms of redistribution. In sum, note that in general both countries' systems appear as very generous (France more than Belgium thanks to child care and birth). However, they are also very hybrid in that multiple tools are combined in providing support to working parents.
The countries of the South of Europe are frequently grouped together at a low, if not the lowest, position in the different typologies. Italy is nevertheless distinguished from the others, for example in the classifications by Korpi (2000) and Gornick, Meyers and Ross (1997). Our indicators would suggest to do the same given that Italy can be found in fifth position in the childcare ranking, in first place when countries are ranked according to the generosity of their tax benefits and ninth when the system of maternity and paternity leave are considered (although behind Portugal and Spain for this latter). We therefore agree that it is wrong to amalgamate simplistically Italy on the one hand and Greece, Spain and Portugal on the other. Moreover, if these latter countries obtain very bad scores as regards their childcare and cash benefit systems, the same does not hold true when instead their tax benefits or maternity leave schemes are analyzed. Indeed, in the ranking based on tax support, Spain comes in fifth and Portugal eigth whereas with respect to birth leave, Portugal holds the third place and as such is outnumbered only by Finland and France.
The United Kingdom and Ireland are usually to be found very close to the groups of Southern European countries. Note, nevertheless, that the living standard is much higher in the UK and that we would therefore expect it to perform better. Ireland and the UK obtain very low ranks in terms of childcare and maternity leave systems and can be found in the middle of the rankings based on the generosity of family cash and tax benefits together.
We would especially like to draw attention to the case of Luxembourg. This country is ranked in the third group by Gornick, Meyers and Ross, a position we do not believe can be justified given that, although Luxembourg deserves a middle place with respect to childcare and maternity leave arrangements, its system of family cash and tax benefits is by far the most generous in Europe. Therefore, this country can and should not be ranked alongside the UK, Ireland, Portugal, Spain and Greece.
Another special case is that of Austria. This country tends to get close to the countries of the first group (SE, DK, FI, FR and BE) because of the high scores it obtains in terms of family cash and tax benefits and the organization of its maternity leave scheme. These two countries are nevertheless penalized by their poor score in term of child care policies towards infants.
The Netherlands and Germany have very different profiles that are nevertheless both very mediocre. The Netherlands are more generous than Germany concerning maternity leave but have a worse position in our ranking based on public child care.

A combination of their scores on the indicators related to childcare, birth leave and cash and tax benefits yields a single final indicator by which countries can be ranked.
The DL method accounts only for countries' relative position without considering the level of generosity on the different sub-indicators whereas the UN method ranks countries according to their relative position and the size of the scores they obtain. Therefore in the table below, Sweden and Denmark on the one hand and France and Finland on the other hand come out differently depending on the method used: as far as the linear scaling technique (UN method) is concerned, Sweden's and Denmark's very high scores on the two child care dimensions compensate for their bad ranks in terms of birth leave and especially in terms of cash and tax benefits whereas according to the Decision Lab method, their positions in these latter two fields do not compensate for their respective first and second place on the child care indicators. France and Finland are favored by the Decision Lab method because on average they are better ranked in all fields. Despite these differences, all four belong to a top group and what is more, both methods rank the other countries in exactly the same way. In the first group we find the Northern European countries, France and Belgium, and also Luxembourg and Austria. In this group, the first four countries clearly prefer good child care provisions over child cash and tax benefits while the opposite holds true for the latter three. A second group, quite distinct from the first, includes by Germany, Italy, the Netherlands and Portugal. Italy offers generous tax relief as well as a good system of maternity leave and of child care for children aged 3-6 but it scores badly in terms of cash benefits and child care for infants. The same holds true for Germany although it relies more on cash benefits than on tax relief while the Netherlands and Portugal are ranked in the middle everywhere.
Finally, as expected, public policies towards children in the UK and Ireland, as well as in Spain and Greece, are very limited, targeting just some particular groups.

As we have shown, our final classification may rank countries in the same group although they perform very differently in the separate policy fields. Indeed, we have observed some substitution effects between cash and tax benefits on the one hand and either child care provisions or birth leave on the other hand. A confrontation of the cash and tax scores with child care indices put forward a group of countries that clearly score better in terms of child cash and tax benefits than in terms of child care (AT, GE, UK, IE, BE, LUX).

To conclude, we believe the value of our study to lie in the extreme richness of our data set which provides very detailed and accurate quantified information on all relevant dimensions of child policies and allows for the construction of all sorts of indicators. Our final indicator in this paper is all-encompassing and thus is often difficult to compare with other typologies
However, because of the richness of our underlying dataset, we effectively avoid those reductionist amalgams that persist through some of the much less detailed typologies.

Table 2.16. Country ranking according to their score on the synthetic final indicator

Combined index of the three fields UN		*Combined index of the three fields DL*	
DK	63.00	FR	0.51
SE	57.43	FI	0.45
LUX	53.65	LUX	0.39
FR	52.11	SE	0.34
FI	51.20	AT	0.29
AT	50.09	BE	0.21
BE	46.93	DK	0.19
GE	40.15	NL	-0.02
IT	40.11	IT	-0.02
NL	39.29	GE	-0.02
PT	35.91	PT	-0.23
ES	27.66	UK	-0.35
UK	27.16	IE	-0.55
IE	23.11	EL	-0.59
EL	21.99	ES	-0.60

Source: see Appendix for calculations

Box 2.1: Some suggestions for an ideal child policy system

The child policy systems implemented throughout Europe are characterized by a great level of diversity and widely varying degrees of generosity. As a result, it is a difficult task to identify common features that could serve as the spine of a converging European system. To conclude this chapter, we will nevertheless attempt to propose a series of features that we would like to be included in the ideal system of policies designed to help parents combine typical work with parenthood.

1. Child care systems

We advocate widespread provision of public childcare facilities with coverage rates well above the Barcelona targets: each child of working parents should be guaranteed a place in outside care as soon as the 18-week maternity leave has ended.
A wide range of opening hours tuned in to full-time work schedules are equally important.
Moreover, the quality of childcare arrangements can be safeguarded on the one hand, by a guarantee of professionalism (child care provided by staff that are appropriately qualified) and on the other hand, by the guarantee of an appropriate child/staff ratio (sufficient staff per centre or group of children).
Finally, child care should be provided at a low cost or be free even for the poorest households: the cost of child care should not work as a disincentive towards paid work

2. Cash and tax benefits

We prone a generous system of universal cash benefits that are granted independently of parents' work status and their level of income. These benefits should be conceived as an individual right of each child.
The political challenge is no longer to encourage women to have a third or fourth child but rather to provide young people with enough incentives to have a first and maybe a second child while they pursue their professional career. Such a conception necessarily affects the way public support is modulated. Therefore, the question of whether or not supplements should be granted to subsequent children has no straightforward answer.
Countries should be encouraged to increasingly provide support in the form of direct cash benefits instead of through the tax system when the budget cost is held constant because these are more simple, transparent and closer to the idea of social justice and children's own rights than are tax benefits. The individualization of the tax and social security system is in line with this logic and also helps avoid employment traps for spouses.

3. Maternity leave

Ideally, the maternity leave should be an 18-week long leave which is compensated at a 100%. Eligibility conditions should preferably include a short qualification period (period of previous employment during which social contributions were paid).
Most importantly, maternity leave should not be too long and should remain clearly distinguished from any system of parental leave. It is a leave period that is justified on medical grounds, for reasons of physical health, and should not stretch beyond the time that is health-wise necessary in order not to put at risk the future employability of mothers.
Furthermore, employment should be protected during the leave guaranteeing the return to one's previous job and to identical employment conditions.
Paternity leaves should be extended within similar framework conditions and should also immediately follow childbirth as this would considerably reduce mothers' work load and allow for a better sharing of family responsibilities.

4. parental leave

The necessary condition here is that the leave is short or can be taken up at a part-time rate in order not to hinder the employability of the beneficiary. Furthermore, it should be compulsory for parents to share the leave between them.

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Appendix to Chapter II

TECHNICAL ANNEX : METHODOLOGY FOR THE CONSTRUCTION OF INDEXES

Weighting the criteria

The aim is to attribute a single numerical value to each national childcare system. Beginning with several partial classifications obtained for each of the criteria, we must build a general classification. To do so, we need a criterion weighting system. How much relative weight must we place on the criteria? Although all criteria are pertinent they have different implications. The choice of weights is partly political. One possibility is to stay neutral by considering, at the outset, that each of the criteria has the same weight. That is exactly what we have done.

Method and mechanism

Technical description of the method

The method used can be broken down into three successive phases.

The first phase consists in collecting the initial data (statistical research and quantification of legislative information).
These data are processed, if required, during the second phase. Criteria may not be expressed, at the outset, in the same units. This is typically the case of amounts expressed in national currencies. The introduction of the euro has simplified matters, conversion was usually only needed into PPS and into % of the APW salary. Other criteria have to be converted in order to obtain each time the highest value for the country in the most favorable situation for the criterion in question.
Finally, the sub-indexes will be aggregated in this phase. The aggregation is obtained through two different methods (see below) and the criteria are all weighted equally.

Two methods to compute synthetic indicators

1. Decision Lab

Decision Lab is a program that helps to untangle difficult multi-criteria decision making problems. In order to rank the different countries the program looks at the intensity with which one country is preferred over another on each criterion. To measure the preference intensity, we use two indicators computed for each country, Φ^+ and Φ^-. Φ^+ is computed as follows. For each criterion, we count the number of countries that are outranked by the country considered. We then sum up these values over the whole set of criteria. Finally, Φ^+ corresponds to the ratio of this number to the product of the total number of countries less one and the number of criteria. For example, let us consider k criteria and fifteen countries. Then, Φ^+ of country A, $\Phi^+(A)$, is computed as follows:

$$\Phi^+(A) = N_1 + N_2 + \ldots + N_k \,/(14*k)$$

with N_i = number of countries outranked by A in criterion i, i=1, …, n
The opposite flow, named Φ^-, is computed using the same formula except that in this case we count the number of countries that outrank country A instead of the number that are outranked by A as above. Finally, the complete ranking (PROMETHEE II) results from the difference

between Φ^+ and Φ^- or the net flow Φ^+.

The way in which a country is preferred to the others in computing the Φ values depends on the preference structure chosen. For our criteria, we have chosen a V-shape preference structure. This means that if d corresponds to the distance between the scores of two countries on a given criterion, then preferences between the countries are established proportionally to this distance d. As long as d remains smaller than a fixed preference threshold p (in our case, fixed at 20% of d), the intensity with which one country is preferred over another increases linearly with d. Once the distance between two countries' scores becomes sufficiently large and surpasses the threshold p, a strict preference of one country over the other is obtained.
In counting the number of countries outranked by country A, we take into account the above mentioned intensity of preference:
a country is given the value 1 if it is strictly outranked by A (or, in other words, A is strictly preferred over this country, $d>p$)
a country is given the value $|d|/p$ if $d \leq p$
The formula shows that the threshold p is of great importance to the value of the net flow Φ but its choice is not very likely to trigger changes in the ranking of countries.

2. The Linear Scaling Technique applied by the UN

We used the Linear Scaling Technique (LST) applied by the UN to construct the Human Development Index (HDI) and rank countries according to their score on this index.
Linear Scaling Technique (LST) is a technique used to standardize the range of a variable. To do this, the highest and lowest values of the range of a variable for all countries are denoted Max and Min, respectively. The data is then scaled according to these values. A variable increase corresponds to an improvement in a country's childcare system (see phase 2), so the variable, VALUE, is scaled according to the formula:

[(Value-Min)/(Max-Min)]*100

We see that increases in VALUE correspond to increases in scaled VALUE. Notice that if the Min is equal to zero, the formula above reduces to VALUE/Max. The obtained value is always in the range of 0-100.
A final indicator is derived by averaging the different standardized sub-indicators which all have equal weight.

This technique is used to scale all variables in many indices, including the Human Development Index produced by the UNDP, an Index of Social Health by Human Resources Development Canada (HRDC), the Index of Economic Freedom by the Heritage Institute and Economic Freedom produced by the Cato Institute (Salzman, 2003).

3. Decision Lab versus Linear Scaling Technique

In the construction of our indices, both methods are justified although present different rankings. Decision Lab focuses more on the rank of the country while the Linear Scaling technique takes into consideration the values of the sub-scores. Therefore changes in the final rankings can occur depending on both rank and score of each country. An example is given by Denmark and Sweden vs France and Finland in the final index.

Appendix to Chapter II

Building a child care index

Two indices have been built : one concerning children aged 0 to 3, a second for children aged 3 to 6.
For each age bracket we have taken the criterion "Free, fully supervised, full-time equivalent childcare coverage" which is the combination of four criteria "coverage rate", "opening hours" "public share of the cost" and "child/staff ratio".
For the age bracket 0-3, we have combined this last criterion to an indicator computing the average cost per family according to different levels of incomes and to the regressivity of the system. Five criteria were used to compute this "cost of child care" indicator: three income levels and two variation coefficients.
Since both sides of the index account more or less for the same number of criteria (four and five respectively) we have taken the average of the two sides.

For the age bracket 3-6, the first part of the index is based on the same four criteria computed for this age category, and the second is composed only by a "spending" indicator. Therefore the final index gives a weight of 4/5 to the first criterion (free, fully supervised, full-time equivalent childcare coverage and 1/5 to the spendings.

The final index is the average of the two sub-indicators 0-3 and 3-6.

The same steps have been used to compute the index based on the Decision Lab method.

Building a cash and tax index

The computation of a cash benefits index on the one hand and a tax benefits index on the other is more or less based on the same procedure. Here under we describe the procedure for the tax system.
We have computed for seven categories of households the monthly amount per child each family gets form the tax relief, expressed in percentage of the average earnings. Three earning levels were retained.
For each type of household and at each earning level we have applied the linear scaling technique (seven times three criteria). Then, for each earning level, we have computed a sub-indicator that combines the seven criteria. This computation takes into account the proportion of each household type in the population of each country (independent of the income level), in order to control for the variable importance of one household in the country (e.g. larger families in Ireland, more lone parents in Denmark and Sweden).
Once this done, we have computed a final score for the tax benefits, simple average of the three sub-indicators.
A second final score has been computed in order to correct for the regressivity of certain tax systems (Franc,e Germany, Luxembourg). This second index is computed in two steps. First we have computed for each household type the difference between the amount granted to low earners and the one granted to higher earners. Second, each of the seven differences were transformed according to the linear scaling technique then a regressivity index has been computed in the exact same way of the sub-indicators. The final score is the simple average of the three sub-indicators and this last index.

The cash benefits index is computed in the exact same way of the final tax index (the first one), except that we did not calculate a regressivity index.
Finally, the combined tax and cash index is based on the computation of the same kind as previous two indices by taking the sum of the amounts granted as cash and as tax benefits. The

regressivity index is incorporated in the final score but its weigh is divided by two since it concerns only tax benefits in our analysis.

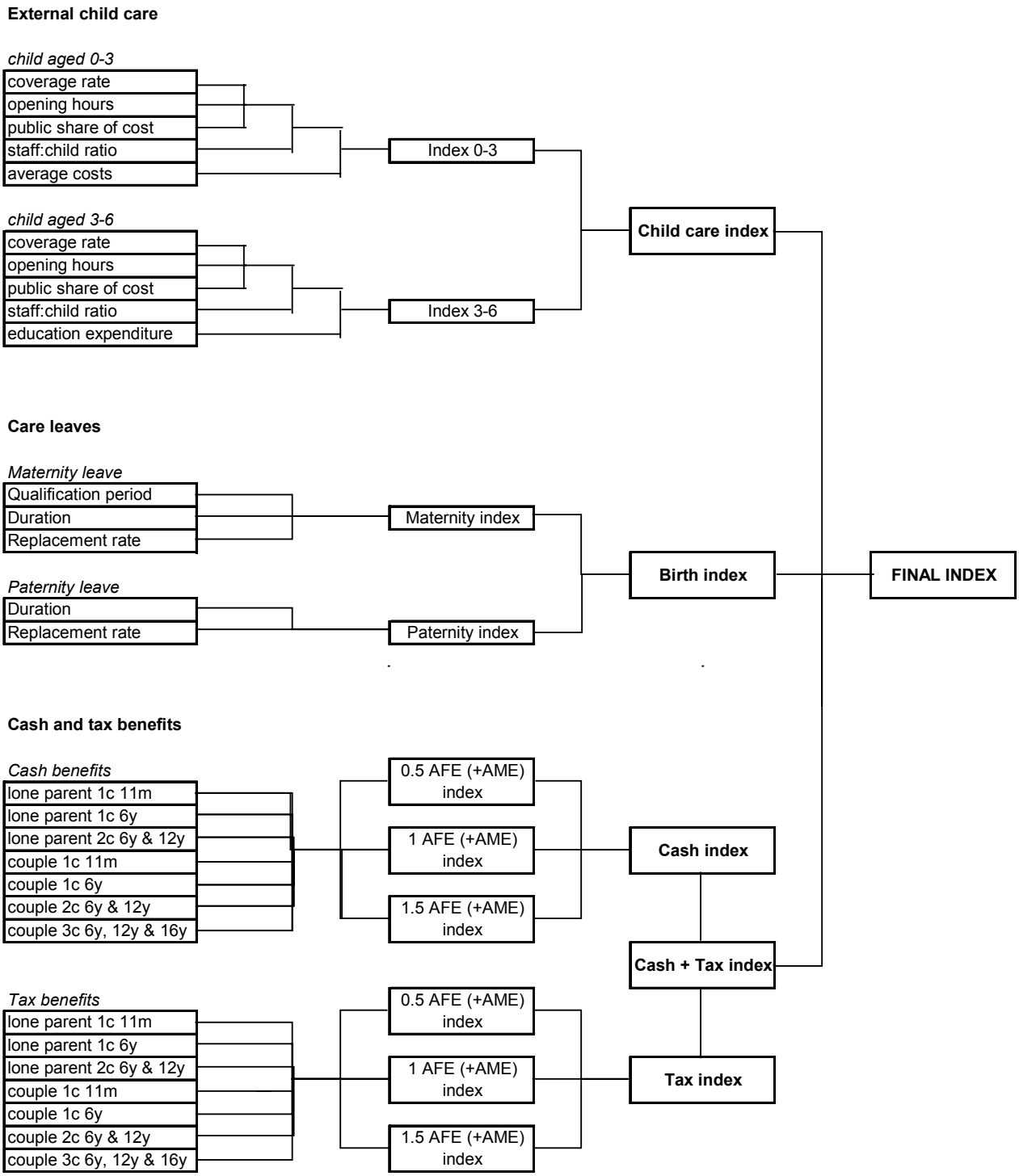
Building a birth index

Three indices were calculated: a maternity leave indicator, a paternity leave indicator and a birth index, combination of the previous two.
The maternity index is the weighted average of two criteria. The first (weigh of 2/3 since two sub criteria) is the fully paid equivalent working days (number of working days of leave multiplied by the replacement rate, with a maximum of 90 working days – 18 weeks). The second is the qualification period (weigh of 1/3). Both criteria have been previously expressed according to the linear scaling technique, as always.
Paternity leave index is the expression of the linear scaling technique applied to the fully paid equivalent working days.
The birth leave index takes into consideration the huge difference between both leaves in terms of length. It is the average of six units that have been applied the linear scaling technique. The first four units are the total number of fully paid equivalent working days of the maternity leave and the paternity leave (then given a weigh of four since based on four criteria), the fifth unit is the "paternity paid days" expressed as a percentage of the 90 maternity ideal days (even in the countries where the maternity leave is shorter) and finally, the sixth unit is the qualification period.

Building a final index

The final index based on the linear scaling technique is the simple average of four sub-indicators : child care index for 0-3, child care index for 3-6, birth index, and cash + tax index. In that sense we have given a doubled weight to the child care dimension since it is of greater importance and based on a more numerous number of criteria.
The calculations for the Decision Lab are exactly the same, based on these four indices.

Figure A.2.1. Steps for building a child policy indicator in EU-15 (2003)



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Table A.2.1. Coverage and opening hours of childcare according to different sources

Country	Coverage		Hours	
	0-3 year olds	3-6 year olds (2000)	0-3 year olds	3-6 year olds
Belgium	**30%** : 20.5% in crèches or Assist. mat. and 9.5% in schools (ONE and K&G, 2002)	**99%** in (a)	**9** : 68% in crèches for 10h and 32% in schools for 7h (ONE and K&G, 2002)	**7** in (f) and (j) (8h30-15h30)
Denmark	**58%** in Statistics Denmark (2003)	**90%** in (a)	**11** in (g) and (h)	**11** in (a)
Germany	**9%** : 3% in WG & 36% in EG in (c)	**73%** in (a)	**10** in (c) and (e)	**6.7** in (c) (weighted average of FT and PT)
Greece	**3%** in (d) and (i)	**48%** in (a)	**9** in (e) (full day)	**4** in (e)
Spain	**5%** in (d)	**77%** in (a) (95% covered but 19% private)	**7** in (a)	**5** in (c) and (e)
France	**39%** : 20% Assist. mat., 9% crèches, 10% nursery schools (Leprince, 2003)	**87%** in (a) (100% covered but 12.5% private)	**10.2** in (c)& Leprince (2003) (10-12h in crèches or AM for 75% and 8h in schools for 25%)	**8** in (c) (8h30-16h30)
Ireland	**2%** in (e) and (j)	**50%** in (a) (75% from age of 4 at school)	**9** in (e) (full day)	**4** in (e) (9h-13h)
Italy	**6%** in (d) and (f)	**95%** in (a) and (e) (98% whose 11% private, 18% subs. church, 71% public)	**10** in (c), (d) and (e)	**8** in (c), (d)and (j) (8h30-16h30)
Luxembourg	**3%** in (f)	**76%** in (a)	**9** in (e)	**5** in (e)
Netherlands	**2.3%** in Berg-Le Clercq et al. (2002)	**66%** in (a) and Berg-Le Clercq et al. (2002) (100% from age of 4 at school and 1.7% of 3y in DC)	**10.5** in Berg-Le Clercq et al. (2002)	**5.5** in Berg-Le Clercq et al. (2002) (8h30-16h30 – 1h at lunch)
Austria	**9.8%** in Kytir & Schrittwiezer (2003)	**70%** in (a)	**7.45** in Kytir & Schrittwiezer (2003) (weighted average of FT & PT)	**6.3** in Kytir & Schrittwiezer (2003) (weighted average of FT & PT)
Portugal	**12%** in (d) and (j)	**72%** in (a)	**7.5** in (e) and (j) (between 5h for 55% and 11h for 45%)	**5** in (j)
Finland	**25%** in (e)	**42%** in (a)	**10** in (h)	**10** in (h)
Sweden	**40%** in (i)	**72%** in (a)	**11.5** in (h)	**11.5** in (h)
UK	**2%** (public) in (f)	**60%** in (a) (85% but 24% private, excl. play groups)	**8** in (c)	**5.2** in (c) and (e) (33% in nurseries for 2.5h, 66% in schools for 6.5h)

Sources: (a) Eurydice (2002), data Eurybase (www.eurydice.org); (c) TSFEPS (2002); (d) OECD (2001a); (e) Eurostat (2002); (f) Gornick and Meyers (2000); (g) Rostgaard & Fridberg (1998); (h) Adema (2001); (i) Bradshaw and Finch (2002); (j) The Clearinghouse on International Developments in Child, Youth and Family Policies (2003).
Key to read the table: According to Eurydice (2002), in Belgium, 99% of children aged three to six are enrolled in a public or publicly-funded school center, which opens on average for seven hours.

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Table A.2.2. Share of costs covered by public funds and child : staff ratio according to different sources

Country	Share of cost covered by public funds		Nb of children per staff	
	0-3 year olds	3-6 year olds	0-3 year olds	3-6 year olds
Belgium	**83%** in (c) and (f)	**100%** in (a)	**9** in ONE and K&G 2002 (weighted average of crèches, AM and school)	**18.5** in (a)
Denmark	**75%** in (f) and (h)	**75%** in (f) and (h)	**3** in (d) and (j)	**6** in (d) and (j)
Germany	**82%** in (f)	**82%** in (h)	**7.5** in (k)	**12** in (k)
Greece	**80%** (see Spain and Italy)	**100%** in (a) and (e)	**13.75** in (e) (30:2 and 25:2)	**30** in (e)
Spain	**80%** in (c), (e) and (j)	**100%** in (a) and (j)	**13.7** in (c)	**25** in (c)
France	**77.6%** in (a), (f) and (j) (crèches & AM at 75%, schools at 100%)	**100%** in (a)	**5.8** in (k) (5 in DC, 3 in FDC, 10 in schools for 2y olds)	**12.75** in (a) (25.5 per group with 1 teacher and 1 qual. assist.)
Ireland	**100%** in (e)	**100%** in (a) and (e)(primary school)	**3.3** (368:111) in Oasis website	**30** in (a)
Italy	**80%** in (k)	**100%** in (a), (c) and (e)	**6** in (e)	**12.5** in (a) (public + private subs.)
Luxembourg	**82.5%** (see Belgium and Germany)	**100%** in (a), (f) and (e)	**5** in (e)	**14.3** in (a)
Netherlands	**64.5%** in Berg-Le Clercq et al. (2002)	**100%** in (d) (basisonderwijs)	**5** in (c) and (j)	**20** in (j) (basisschool)
Austria	**82%** (see Germany)	**82%** (see Germany)	**4.5** in (a)	**8.8** in (a)
Portugal	**80%** (see Italy and Spain)	**100%** in (e)	**5.5** in (e)	**16.4** in (a)
Finland	**85%** in (d) and (f)	**85%** in (d) and (f)	**4** in (d) and (j)	**7** in (d) and (j)
Sweden	**84.5%** in (f) and (g)	**84.5%** in (f) and (g)	**6** in (d) and (j)	**6** in (d) and (j)
UK	**94%** in (f)	**100%** in (d) and (f)	**3.7** in (k) (3:1 <2y, 4:1 2-3y)	**24.3** in (c) and (d) (13:1 in nurseries, 30:1 in reception classes)

Sources: (a) Eurydice (2002), data Eurybase (www.eurydice.org); (c) TSFEPS (2002); (d) OECD (2001a); (e) Eurostat (2002); (f) Gornick and Meyers (2000); (g) Rostgaard & Fridberg (1998); (h) Adema (2001); (i) Bradshaw and Finch (2002); (j) The Clearinghouse on International Developments in Child, Youth and Family Policies (2003); (k) Kamerman (2001).

Key to read the table: According to TSFEPS (2002) and Gornick & Meyers (2000), in Belgium, 83% of the average childcare cost for children under three (crèche, AM or school) is covered by public funding; according to ONE and K&G (2002), the average number of children per qualified teacher or childminder is nine.

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Table A.2.3. Most prevalent full time formal pattern of childcare for children under three years old

Country	
UK	Childminder
Italy	Day nursery
Luxembourg	Childminder
Belgium	Day care families supervised by public authorities
Finland	Municipal day care center
Sweden	Municipal financed day care center
Germany	Day nursery
Spain	Private day nursery
Denmark	Kindergarten, childcare institution
France	Childminder
Netherlands	Subsidized childcare
Austria	Crèche
Greece	Low income : public childcare; high income :private childcare
Ireland	Childminder
Portugal	Private non profit kindergarten

Source : Bradshaw and Finch (2002).

Key to read the table: In the UK, a childminder is the most prevalent full time childcare system for children under three years old.

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Parental leave provisions : Legal sources

BE : Royal Decree of 29/10/1997 modified by Royal Decree of 20/01/1998, 10/08/1998, 08/06/1999 and 24/01/2002. Additional information : http://www.onem.be/

DK : Ministry of Employment in Wehner & Abrahamson (2003).

DE : Gesetz zum Erziehungsgeld und zur elternzeit (Bundeserziehungsgeldgesetz-BErzGG) in der neufassung der bekanntmachung vom 09/02/2004, art.1-24. Additional information : Ostner et al. (2003)

EL : art. 5 Act 1483/1984 as amended by art. 25 Act 2639/1998, art. 6 Act 1483/84, art. 53 (1) in combination with art. 51 (2) Act 2683/1999 of the Greek Civil Servants' Code, art. 3 Decree 193/1988
(http://www.kethi.gr/english/meletes/GUIDE_GOOD_PRACTICES/GREEK%20REPORT/IA.htm)

ES : Code du Travail (Estatuto de los Trabajadores), updated edition 23/04/2003 (based on 1995 law) art. 37.4, 37.5 and 46.3.

FR : *APE* : Hermange, M.-T. and P. Steck (2003) ; Parental leave and *PAJE* : art.L122-28-1 to 7. (code du travail on-line : http://www.legifrance.gouv.fr/)

IRL : Irish Parental Leave Act 1998. Additional information : Parental leave in Ireland (http://www.softworks-computing.com/apr_04/parentalleave_print.html); Communications workers' union (http://www.cwu.ie/html/Parental.htm)

IT : Law of 10/03/2000 (http://www.giustizia.it/cassazione/leggi/l53_00.html)

LUX : law of 12/02/1999 (http://www.cnpf.lu)

NL : Wet Arbeid en Zorg 16/11/2001. Additional info : Ouderschapsverlof in Nederland (http://www.kinderinfo.nl/Perioden/papierwinkel/juridisch/algemeen/) and Knijn (2003).

AT : Kinderbetreuungsgeldgesetz of 07/08/2001. Additional information :
(http://www.wif.wien.at/wif_site/wif_pages/se_ipol_13_down_en.html)

PT : Dec.-lei n°70/2000 (04/05/2000), Dec.-lei n°230/2000 (23/09/2000), Dec.-lei n°154/1988 (29/04/2000). (http://www.cite.gov.pt/legisnac.htm)

FI : Ministry of Social Affairs and Health website (http://www.stm.fi) ; The Social Insurance Institution of Finland website (KELA) (http://193.209.217.5/in/internet/english.nsf/)
Additional information : Forssén, Laukkanen & Ritacallio (2003)

SE : Parental Leave Act (SFS 1995 : 584) including amendments up to 2001 and including SFS 2001 : 144. Additional information : Ministry of Health and Social Affairs (2003) and Björnberg & Dahlgren (2003)

UK : The Maternity and Parental Leave (Amendment) Regulations 2002.
Additional sources : GMB (Britain's General Union) (http://www.gmb.org.uk/docs/ViewADocument_search.asp?ID=25); Department of Trade and

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Industry (United Kingdom), section Employment Relations, Parental leave – A short guide for employers and employees (http://www.dti.gov.uk/er/parental.htm) and Finch (2003).

Table A.2.4. Maternity and Paternity leave arrangements in EU-15 member states (2003)

	Prenatal duration	Postnatal duration	Total duration	Employment period to qualify for parental leave	Indemnification rate or level	Paternity leave	Indemnification rate or level
	weeks	weeks	weeks	days	% of earnings	days	% of earnings
BE	7 (1 compulsory)	8	15	182.5 (6 months)	82% without ceiling during 1st 30 days after birth (and mandatory week before) and 75% during the rest of the leave (100% for civil servants during the whole leave)	10	82% (100% 1st 3 days) with ceiling around 102 EUR/ day
DK	4	14	18	21 (120h)	100% of unemployment benefits	10 (2 weeks uninterrupted)	100% of unemployment benefit
GE	4	8	14	84 (12 weeks between 10th and 4th month before confinement)	100% of average net wage	0	-
EL	8 (56d)	9 (63d)	17	200 (during last 2 years)	100%	1 (private sector)	100%
ES	-	6 (+10 shared)	16	180	100%	2 (+ up to 10 weeks if mother transfers)	100%
FR	6	10	16 (26 if 3d child)	304 (10 months)	100%	14 (3 + 11)	100%
IE	4 compulsory	4 compulsory	18	273 (39 weeks)	70%	0 (some trade unions have negotiated a short leave around birth)	n/a
IT	1 or 2 months	3 or 4 months	21.7 (5 months)	0	80% (some collective agreements require employers to pay the remaining 20%; 100% for civil servants)	0	-
LUX	8	8	16	182.5 (6 months)	100%	2	100%
NL	4-6 compulsory	10-12	16	0	100%	2	100%
AT	8	8	16	0	100% of net average income of the last 13 weeks or 3 months	0	-
PT	30 days	90 days (6 weeks reserved for the mother)	17.1 (120 days uninterrupted)	182.5 (6 months)	100% of average daily wage	5 (fractionable) during 1st month	100%
FI	30-50 days compulsory	free choice	17.5 (105 days excluding Sundays)	0	70% max. (income-tested, on average 66%)	18 (can be extended by 1 to 12 weekdays if father takes last 1 to 12 weekdays at the end of the parental leave)	100%
SE	7	7	14	being employed	80% (pregnancy benefit for 50 days leave before birth)	10 (2 weeks)	80%
UK	up to 11	free choice	18 (if worked for 1 y, total is 29)	No conditions (for 18w leave) and having worked 1 year before 11th week preceding birth (for 29w leave).	90% for 1st 6 weeks, 115 EUR weekly for the remaining 12 weeks	0	-

Source : MISSOC 2003

Table A.2.5. Parental Leave arrangements in EU-15 member states (2003)

	Parental leave duration	Transferability	Compulsory duration and fractionability	Part-time leave arrangements	Child age limit	Qualification conditions	Job and pension guarantees	Monthly benefit level
BE	3 months for each parent if full-time leave (6 if PT and 15 if 1/5 time)	individual right (not transferable); no changes allowed in take-up mode	FT leave in 3 times, half-time leave not fractionable or 1/5 leave in 5 periods of 3 months	FT leave for 3 months, PT leave for 6 months or 1/5 leave for 15 months	4	worked 12 months during the 15 months before leave (private sector); excluded are the public sector, apprentices and trainees	Job guaranteed and social rights maintained	FT : 547 EUR (gross and taxable), proportional to amount of working time reduction
DK	32 paid weeks to be shared between parents (for the mother to be taken after the 14 weeks of maternity leave, for the father after childbirth) + 14 weeks unpaid but job-protected leave	Family right (transferable between parents); take-up together or one after the other	possible to split in weeks	PT leave with proportional extension of duration	8-13 weeks may be postponed until child's 9th birthday (32 if employer OK)	being employed	guarantee of tenure, social rights and return to the same or an equivalent job	1755 EUR (full unemployment benefit) during the 32 weeks that are to be shared
GE	up to 3 years (2 years paid at flat-rate)	Family right, take-up together is possible	3d year taken before the child's 8th birthday, 1st 2 years taken before the 3d birthday; If only 1 year is taken, the flat-rate benefit is higher; Possible to take a shorter period (multiples of 1 month)	Possibility to work PT up to 30h	8	all employees, persons in vocational training, those working at home and piece workers	Job protection, right to resume previous working hours and social rights maintained during the leave	300 EUR during 1st 2 years, 450 EUR if only 1 year (2004), paid only once per child (even if both parents leave)
EL	3.5 months each but 7 months for lone parents	individual right (not transferable); no changes allowed in take-up mode	Civil servants: fractionable	not possible	3.5	Both parents must work, the claimer for at least 1 year with the same employer	right to return to the same or an equivalent job, pension and seniority rights suspended (unless employee pays all SS contributions)	unpaid
ES	Up to 3 years following childbirth for each parent. Also 1 h (or 2 half-hours) of breastfeeding leave each workday until the child is aged 9 months	Individual right (both can take leave at the same time); the right expires if another leave is claimed (for the 2d child e.g.)	no compulsory duration (less than 1 year may be taken); if 1 year is taken, this can be done before the child's 3rd birthday	PT leave until child aged 6 (hours reduced between 1/3 min and 1/2 max)	3	being employed	job guaranteed during 1 year of leave (tenure, social rights and participation in training courses at return)	unpaid
FR	1 year parental leave renewable twice for each child. Allowance: 3 years of *APE* (PAJE since 2004) from the 2d child and 6 months PAJE (since 2004) for 1st child	Family right (*APE*) ; individual right (unpaid parental leave) which both can take up together or one after the other	1 year renewable twice and transition from PT to FT leave or inversely is allowed; no changes during the year unless employer agrees	Reduction of hours worked by at least 1/5 (but min 16h of work)	3	seniority of at least 1 year (parental leave & *APE*)	right to return to the same or an equivalent job, guarantee of wage, half of leave counted for pension & seniority issues, right to training at return	502 EUR (2004) paid only once per child or to each parent if PT take-up but with a max equal to the FT benefit per family

Continued

	Parental leave duration	Transferability	Compulsory duration and fractionability	Part-time leave arrangements	Child age limit	Qualification conditions	Job and pension guarantees	Monthly benefit level
IE	14 weeks each	Individual right (not transferable)	take-up as a continuous block or, in agreement with employer, spread over a max of 5 years: by means of reduced working hours or by breaking down the time into individual days/weeks or as a combination of the previous two; a max. of 14 weeks of parental leave per year except when employer agrees with a different scheme		5	continuously employed for at least 1 year	rights related to pay/pensions/ superannuation benefits are not legally guaranteed but left to the discretion of the employer; the right to return to one's job is guaranteed	unpaid
IT	Mother max 6 months, father max 7 months, for a total of max 11 months; lone parents can take up to 10 months.	Individual right, not transferable and not possible to take up at the same time	No compulsory duration (if father takes at least 3 months, the total rises from 10 to 11 months). The whole leave is fractionable	part-time take-up possible (1/2 or 1/4)	8	excluded from the right to parental leave: atypical industry branches and liberal professions	contract remains applicable during the whole leave period (employment guarantee + social rights)	30% of earnings for 6 months (remaining period unpaid, unless low-income); self-employed women taking parental leave and who are replaced at work receive tax relief
LUX	6 months each if FT or 12 months each if PT	Individual right but one parent has to take leave right after maternity leave, otherwise it is lost, exc. if other parent is not entitled (lone parents excl.)	Whole leave to be taken in one draw	PT possible for 12 months each	5 (for 2d leave)	continuously employed for at least 1 year (min 20h/w) with the same employer	same contract, type of job and earnings; pension rights not affected	1693 EUR (2004)
NL	13 times the amount of hours regularly worked per week	Individual right for each parent and for each child	Possible to split leave in 3 periods of at least 1 month; parents can go on leave together or one after the other; legally, leave can be taken over a max. period of 6 months but if there is an agreement with the employer, leave can be spread over a period >6 months	the length of leave and the number of leave days per week (with a max. of half the number of weekly working hours) are fixed in advance in agreement with employer; full-time leave is possible if employer agrees	8	private and public sector (regular waged workers employed for at least 1 full year by the same employer)	contract, seniority and pension guaranteed by some collective agreements only, especially in the social services sector	Civil servants : 70-75% paid; Private sector: only 6% of collective agreements (in 2000) pay the leave (up to 30%)
AT	36 months if each parent takes 6 months, otherwise 30 months	Family right, 24 months transferable	Parents can alternate twice at most (max. 3 blocks of at least 3 months)	part-time take-up possible	3	All parents providing they are entitled to family allowances	18 months of the "kinderbetreuungszeit" enter into the calculation of pension entitlements; if part-time work during parental leave, then no protection against dismissal	*kinderbetreuungsgeld* of 436 EUR for all (incl. self-employed, housewives, etc.)

End

	Parental leave duration	Transferability	Compulsory duration and fractionability	Part time leave arrangements	Child age limit	Qualification conditions	Job and pension guarantees	Monthly Benefits level
PT	3 months each if FT or 6 months each if PT, up to 6th birthday (parental leave); 2 years unpaid (special leave) or 3 years in case of a 3d child	Individual right (not transferable)	Take-up in one draw or in 3 blocks (or alternation between PT and FT leave periods)	6 months (half-time) or alternation of FT and PT leave periods summing up to a FTE period of 3 months	6	both parents employed	Job-protected parental leave is recognised for pension calculations	the father's 1st 15 days after mat. or pat. leave are fully paid, what is left for the father & the mother is unpaid as is special leave
FI	158 weekdays (excl. Sundays) at a max. of 70% of earnings; afterwards, long leave up child's 3d birthday with flat-rate home care allowance	Family right (transferable), take-up only possible one after the other, min. take-up of 12 days for 1st leave. Childcare leave also transferable but taken up one after the other with a min. of 1 month per child	fractionable (see transferability)	the long childcare leave can be taken up on a part-time basis (with proportional allowance)	3	being employed	Job security during both leaves and both are considered as time in employment (pensions, seniority, etc.)	max. 70% of earnings (income-related, average 66%) for 158 days; flat-rate allowance of around 252.28 EUR monthly during child-rearing leave; 70 EUR/month if PT leave
SE	FT leave until child aged 18 months and FT leave as long as full-rate parental benefit is received (granted for 480 days to be taken before child's 8th birthday, including paid postnatal leave of 7 weeks)	Of the paid leave, 60 days are for the mother and 60 for the father, what is left is transferable	Each leave can be split in blocks but only 3 periods max. can be taken per year. An employee may choose a number of FT leave days or can opt for part-time take-up spreading leave over all or some working days. An employee may return to work before the end of leave (min. 1 month's notice)	Reduced hours to 1/2, 1/4, 1/3 or 1/8 with corresponding benefit, or uncompensated reduced hours up to 1/4 (until child's 8th birthday)	8	being employed for 6 months before leave or for a total of 12 months during the last 2 years.	job and social rights protected (no dismissal possible)	80% for 1st 390 days (min. 16.5 EUR/day), flat-rate for 90 days (6.6 EUR/day)
UK	18 times the amount of hours regularly worked per week	Individual right (not transferable)	leave can be taken up at once, by means of reduced working hours or in blocks depending on workplace agreement (if a parental leave is negotiated, blocks are multiples of 1 day; if not, a default scheme defines blocks as multiples of 1 week with a max. of 4 weeks per year)		5	continuously employed for at least 1 year with the same employer	guaranteed return to the same job if leave for max. 4 weeks and to an equivalent job if for more than 4 weeks (mat. and par. leave counted together). In both cases, pension & seniority rights are suspended	No statutory right to paid leave but left to employer's discretion

Source : see Legal sources

Table A.2.6. Take-up rates of parental leave by sex according to different sources

	female take-up	male take-up	average female duration of leave	average male duration of leave	source
BE	16720 (of which 80% in private sector)	2398 (of which 80% in private sector)	48% take 1/5 leave	74% take 1/5 leave	ONEM (2003)
DK	93%	3%			Lourie (1999) ; http://www.childpolicyintl.org/
	42166 ('94)	3678 ('94)	1990-2000: 85% of women (47978) on par. leave leave for 7-10 weeks, 2% for 1-6 weeks (1129) and 8% (4516) for more than 11 weeks	1990-2000: 47% of men (713) on par. leave leave for 1-4 weeks, 17% for 5-8 weeks (258) and 36% (546) for 9-10 weeks	Wehner & Abrahamson (2003)
		around 48% panel 1993-99	around 28 weeks panel 93-99	1 week panel 93-99	Pylkkänen & Smith (2003)
		58% (pat. leave) and 100% in public sector where pat. leave is fully paid; 10% for 10w of parental leave and 10% for child care leave			Stancanelli (2003) (data 1998)
		56% pat leave (2001) and 4% take whole leave (52 weeks)	44.8 weeks (total leave : pregnancy, mat. and parental)	2.2 weeks	Eiro (2001a)
			44.8 weeks or 59% of the total leave they are entitled to	2.2 weeks of leave or roughly 7% of the total parental leave to which they are entitled	Meilland (2001)
GE	95%	1%			Lourie (1999) ; http://www.childpolicyintl.org/
			estimated duration 2001: West-Germany: 63% for 2-3 y, 12% up to 1y, 15% for 1-2 y and 12% for more than 3 y, so average of 33 months; estimated duration 2001: East-Germany: 38% for 2-3 y, 25% up to 1y and 37% for 1-2 y, so average of 24 months		Ostner et al. (2003)
		1-2% for some of the parental leave			Stancanelli (2003) (data 1998)
EL	na	no fathers take leave	na	na	Stancanelli (2003) (data 1998)
ES	100%		na	na	http://www.childpolicyintl.org/
FR	555700 *APE*, nearly all women		na	na	Hermange et Steck (2003)
	98% of leaves are taken by women				Clément et Strasser (2003)
		100% for 3-day paternity leave and 59% for the 11-day leave			Drees (2003)
		2% for parental leave	na	na	Stancanelli (2003) (data 1998)
IE	Of the 6.74% of the workforce eligible, 20% used par leave of which 84% are women (2002)		na	na	Eiro (2002)
	5% continuous block of 14 wekks; 8% blocks of full weeks; 9% other; so, total take-up rate of 22%; 85% of leave-takers are full-time workers				MORI MRC (2001)

End

	female take-up	male take-up	average female duration of leave	average male duration of leave	source
IT		<5% take any of the leave offered	na	na	Hennech (2003) (data 1998)
LUX	1313 full-time; 760 half-time	243 full-time; 255 half-time	whole leave compulsory		CNPF (2003)
NL	40%	9%			Lourie (1999) ; http://www.childpolicyintl.org/
	25% of all parents (50% of women and 75% of men get paid while on leave)		8 months	11months (but women more hours per week)	Knijn (2003)
		take-up rates average 13% for PT leave	The Netherlands is the only country in the EU where fathers do not take shorter leaves than mothers		Stancanelli (2003) (data 1998)
	44%	12%			NIDI (2003) (data 2000)
	49% (public sector)	12% (public sector)			
AT	90%	1%	na	na	Lourie (1999) ; http://www.childpolicyintl.org/
		1%			Stancanelli (2003) (data 1998)
		2% (2002)			The Clearinghouse (2002)
PT	100%		na	na	http://www.childpolicyintl.org/
FI	99%	2%	na	na	Lourie (1999)
	99%	64% (par leave)			http://www.childpolicyintl.org/
		64% (pat leave) and 3% for parental leave			Stancanelli (2003) (data 1998)
	47000 take the 158-day leave	2500 take the 158-day leave			Ministry of Social Affairs and Health (2002)
	107500 families receive a home care allowance				Ministry of Social Affairs and Health (2003)
SE	90%	78%			Lourie (1999) ; http://www.childpolicyintl.org/
		75%		44 days which corresponds to 15% of the total leave available	The Clearinghouse (2003)
		77% (1st child) panel 1993-1999	40.2 weeks (1st child) panel 1993-1999	4.4 weeks (1st child) panel 1993-1999	Pylkkänen & Smith (2003)
	295287 women and 210456 men receive parental leave allowance, i.e. fathers' share of 42% of beneficiaries but only 16% of the total claimed days; 75% of fathers take paternity leave (on average 9.6 days)		109 days	28 days	The National Social Insurance Board (2003) (data 2002)
UK	20% (estimated in 1999) take full 3 mo. unpaid leave	9% (estimated in 1999) take full 3 mo. unpaid leave			Lourie (1999)
	35% (estimated in 1999) of eligible women	2% (estimated in 1999) of eligible men			Lourie (1999)

Table A.2.7. Main features of the child cash benefits in EU-15 member states (2003)

	Age limit conditions	Monthly amounts	Variation with income	Variation with age	Child raising allowances (different from PL schemes)	Birth and adoption grants	Child care allowances	Allowance for single parents
BE	usual : 18 years / vocational training or education 25 years / serious infirmity : 21 years	1st child : 72.61 EUR / 2nd child : 134.35 EUR / 3rd child and subsequent: 200.59 EUR	no	- child 1st rank born since 1st Jan 1991: 6-12y: +12.65 EUR, 12-18y: +19.26 EUR - child 1st rank born before 1st Jan 1991: 85-90: +25.22 up to 18y, +27.09 older / before 85: +40.41 EUR - child becoming 1st rank and born 91-96: 6-18y: +25.22 EUR, 18+: +38.54 EUR	no special	983.68 EUR for 1st birth and each adopted child / 740.10 EUR for next births	no special	no special
DK	18 years for all children	each child 0-3 : 145 EUR / 3-7: 131 EUR / 7-18: 103 EUR	no (special means tested allowance only if parents are retired)	see monthly amounts	education allowance	multiple births or adoption: 75 EUR per month until children's 7th birthday / adoption of foreign child: 5159 EUR (one shot)	no special	+45 EUR per month per child and + 46 EUR per month per household
GE	usual: 18 years / education or vocational training: 27 years / handicapped : no limit	1st -3d child : 154 EUR / 4th and subsequent: 179 EUR	no	no	no special	no special grants (see maternity benefits scheme)	no special	no special
EL	usual: 18 years / education: 22 years / serious infirmity: no limit	1 child- family: 5.87 EUR / 2 children: 18 EUR / 3 children: 40 EUR / 4c: 48 EUR / more: +8.07 EUR/child	Employer provides 10% gross wage rise if married and 5% per child to husbands (or lone parent). Taxable benefit	no	no special	no special grants (see maternity benefits scheme)	no special	+3.67 EUR per child for parent widow/er
ES	usual : 18 years / serious infirmity: no limit	24.25 EUR/child	household income ceiling to receive child benefits: 8264.28 EUR per year (raised by 15% per child from the 2nd)	no	no special	451 EUR for 3rd and each subsequent child	no special	no special
FR	20 years for all (at 55% SMIC max for child income)	1 child: 0 / 2 children: 111.26 EUR tot / each subsequent child: +142.55 EUR	no (only min guaranteed if lone parent with 1c+)	11+: +31.29 EUR / 16+: +55.63 EUR (except for 1st child in families with less than 3c)	no special	APJE: 159.76 EUR (means-tested) per month per child (also adopted) from 4th month of pregnancy until 3 years of age or from adoption and for 21 months. Replaced by PAJE (from 2004): 808.31 EUR Y-rel.	AGED (child home care allowance): income tested and age variable benefit until child's 6th birthday / AFEAMA (private child care allowance) child aged less than 6 and income tested / all replaced by PAJE from 2004	API (single parent allowance) : monthly income of 521 EUR and 173.84 EUR per child <3y is guaranteed (allowance equal to this amount minus parent's income).

Continued

	Age limit conditions	Monthly amounts	Variation with income	Variation with age	Child raising allowances (different from PL schemes)	Birth and adoption grants	Child care allowances	parents
IE	usual: 16 years / education: 19 years / serious infirmity: 19 years	1st & 2d child: 117.6 each / 3rd and further: 147.3 EUR	no	no	n/a	635 EUR for all multpile births with further grants of 635 EUR paid at ages 4 and 12	n/a	income tested, max. 124.8 EUR per week +19.3 EUR per week per child but seems to be min. income guaranteed for low income parents
IT	usual: 18 years / serious infirmity: no limit	means-tested benefit and proportional to number of family members		no	no special	families with 3+ children or adopting a child: 775 EUR per child, income related and taxed allowance	no special	increased family allowances for lone parent
LUX	usual: 18 years / education training: 27 years / serious infirmity: no limit	1st child: 172.36 EUR / 2children: 409.28 EUR / 3c: 745.44 Eur / further: 335.99 EUR each	no	6+: +15.02 EUR / 12+: +45.06 EUR	child raisng allowances for those not entitled to Parental leave schemes	total amount of 1615.89 EUR per mother / maternity allowance in case of no loss of income during maternity leave	no special	no special
NL	usual: 17 years	children born since 01/1995: 0-5y: 58.11 EUR each / 6-11y: 70.57 EUR each / 12-17y 82.02 EUR and those born before 1995 it is according to the number of children (1c: 82.02 ; 2c: 93.78; 3c: 97.36; 4c: 105.25, etc., each per child aged 12-17, 85% of each amount if aged 6-11y)	no	see monthly amounts	no special	no special benefit	no special	no special
AT	usual: 18 years / education or tvocational training: 26 years / earning incapacity: unlimited	105.4 EUR/child < 3y / 112.7 EUR if 3-10 / 130.9 EUR if 10-19 / 152.7 EUR 19+ / if 2c, amount increased by 12.8 each and from the 3rd child, amount increased by 25.5 EUR per child / + tax credit of 50.9 EUR per child assimilated as benefit	Income ceiling of 40320 EUR to perceive supplement for large families of 36.4 EUR for 3rd and each subsequent child	see monthly amounts	no special	no special benefit	no special	no special / tax credit for single parent: annual tax reduction of 364 EUR

End

	Age limit conditions	Monthly amounts	Variation with income	Variation with age	Child raising allowances (different from PL schemes)	Birth and adoption grants	Child care allowances	Allowance for single parents
PT	usual: 16 years / education or vocational training: 24 years / serious infirmity: +3 years	income-related (4 earnings levels related to minimum wage) and according to age and number of children :			no special	no special benefit	no special	no special, but since benefit is income related, it can change from 2 earnings
		1st level: income <1.5 min. W. :	children <12 months: 89.04 EUR for 1st-2d, 133.65 EUR for next	children >12 months: 26.76 EUR for 1st-2d, 40.15 EUR for next				
		2nd level: 1.5 min. W < income < 4 min. W. :	children <12 months: 77.74 EUR for 1st-2d, 112.74 EUR for next	children >12 months: 20.86 EUR for 1st-2d, 30.58 EUR for next				
		3rd level: 4 min. W < income < 8 min. W. :	children <12 months: 66.49 EUR for 1st-2d, 89.39 EUR for next	children >12 months: 17.86 EUR for 1st-2d, 24.21 EUR for next				
		4th level: income >8 min. W. :	children <12 months: 41.16 EUR for 1st-2d, 53.57 EUR for next	children >12 months: 15.72 EUR for 1st-2d, 20.45 EUR for next				
FI	17 years for all children	1st child: 90 EUR / 2nd-5th child: + 20.5 EUR per each child / 6th and following: same amount each than for the 5th child	no	no	no special	maternity grant for pregnant woman whose pregnancy has lasted at least 154 days and with health examination: 140 EUR per birth or adopted child / adoption grant for foreign child according to country of origin : form 1900 to 4500 EUR	child home care allowance (see parental leave schemes) / private child care allowance of 117.73 EUR per month and per child paid to private cre provider directly (+ means tested supplement) / partial child care allowance (parent reducing hours max 30h) of 63.07 EUR per month per child<3y paid to the parent	+33.6 EUR per child (supplement of the child allowance)
SE	16 years for all children	each child: 104 EUR / additional amount 3d child : +28 EUR / for 4th child: +83 EUR / for 5th and subsequent: +104 EUR	no	no	no special	no special benefit in case of birth / adoption grant for foreign child: 4383 EUR	no special	no special
UK	usual: 19 years / education: 19 years	1st qualifying child: 105 EUR / each other child: 70 EUR.	no	no	no special	767 EUR for each birth or adoption (born or expected)	no special but some children under the scheme of Working families tax credits (now WTC) for low income workers	higher benefit rate withdrawn from 1998, a few remain in payment

Source : MISSOC, 2003

Table A.2.8. Main features of the child tax benefits in EU-15 member states (2003)

	Tax unit retained	Relief for marital status	Relief for children	f for lone parent	costs
BE	Household / earnings are taxed individually and application of marital quotient (if one's earnings less than 30% of total earnings after deduction for social sec contributions and work-related expenses)	Tax rebate for single person : 5570 EUR / married individuals : 4610 EUR each, applied at the basis of the tax schedule (wastable credit)	1c : 1180 EUR / 2c : 3050 EUR / 3c: 6830 EUR / 4c: 11040 EUR / each subs. : +4220 EUR (also at the base of the tax schedule combined with previous relief, but refundable credit up to 340 EUR per child)	1180 EUR (at the basis of tax schedule and combined with latter two reliefs, wastable credit)	Child care tax allowance on taxable earnings up to 11.2 EUR per day (computed as 2464 EUR per year), relief applied to each parent according to share of hh earnings. Age limit of 3 years
DK	Spouses are taxed separately for earned income	no	no	no	no
GE	Spouses are taxed jointly (option of separate taxation).	Other specific reliefs are doubled. Tax schedule for spouses is applied on half joint taxable income and tax due is then multiplied by two	Tax credit considered as cash benefit of 1848 EUR per child (non wastable). If relief from tax allowance (5808 EUR per child) > credit, then former applied to tax schedule instead of latter.	Tax allowance of 2340 EUR	no
EL	Spouses are taxed separately	no	1st band of tax schedule (non taxable income) is raised by 1000 EUR for each of 1st and 2d child, 8000 EUR more for 3d child and 1000 EUR for each subs. child	no	no
ES	Spouses are taxed separately	Basic allowance of 3400 EUR for each spouse or individual	<25y : tax allowance of 1400 EUR for 1st c, 1500 EUR for 2d c, 2220 EUR for 3d c and 2300 EUR for 4th c	The basic allowance for individual is raised to 5550 EUR	Additional tax allowance of 1200 EUR for each child <3y / Maternity credit (non wastable) up to 1200 EUR for working females with children <3y (limited by SSC due)
FR	Household (spouses are taxed jointly with dependent children).	Tax schedule is applied to joint taxable income divided by number of shares (1 per parent, 0.5 per dependent child, 0.5 more from 3d child), then tax due is multiplied by the number of shares (quotient). For married couples, advantage from quotient is limited to 2086 EUR for each half share exceeding 2 shares (i.e. from 3d child) for married couples (or PACS). For lone parents advantage from first two half shares is limited to 3609 EUR (i.e. from 2d child). "Prime pour l'emploi" : Wastable tax credit for low earners with supplement for dependent children : 33 EUR/c for married/cohabitants couples / 66 EUR for 1st child for lone parents and 33 EUR/c from 2d.			Tax credit (wastable) for children cared outside home or at school (under 7y) : 25% of real costs up to a max. of 2300 EUR per year. Costs for secondary or tertiary education are also deductible from tax : 61 EUR/c in college, 153 EUR/c in lyceum and 183 EUR/c in higher education
IE	Spouses are usually taxed on joint income (option of being considered as singles). Here joint taxation retained.	Wastable tax credit of 1520 EUR for singles and 3040 EUR for couples. Different tax schedule according to marital status : first bracket up to 28000 EUR for single, 37000 EUR for one earner couple, 56000 EUR for two earner couple	Supplementary taxable income exempted of 575 EUR for 1st and 2d child, and 830 EUR for each subs. child	Lone parent wastable credit of 1520 EUR (added to single credit). First bracket of tax schedule at 32000 EUR	Not for two earner families

	Tax unit retained	Relief for marital status	Relief for children	Relief for lone parent	Relief for child care or education costs
IT	Spouses are taxed separately	Not for two earner couples (means-tested wastable tax credit for dependent spouse)	Wastable tax credit, means-tested up to 3d child (3 income bands, min. 285 EUR per child, max. 516 EUR/c), 516 EUR/c from 4th c.	no	no
LUX	Spouses are taxed on joint income	Basic tax schedule applied to single income (class 1) and to halved joint income of spouses (class 2) then tax due is multiplied by two.	Wastable tax credit of 900 EUR/c	Tax allowance of 1920 EUR / basic tax schedule applied to reduced income (up to 29500 EUR)	Tax allowance for child care costs equal to real expenses (not simulated here because no information on costs)
NL	Tax unit is the individual but certain credits depend on joint income	no	Means-tested wastable child credit (independent of the number of children): 575 EUR if joint Y <27438 EUR, 365 EUR if joint Y <29108 EUR and 41 EUR over. Combination wastable credit if presence of children under 12 : 214 EUR if joint Y > 4206 EUR. Wasted credit can however be reported on spouse's tax due according to a certain scheme.	Wastable tax credit of 1348 EUR + 4.3% of earnings (latter limited to 1348 EUR)	no
AT	Spouses are taxed separately	no	610.8 EUR per child but not related to income, fully refundable and paid together with child benefits, then considered as cash benefits	Lone parents are applied a different tax schedule in order to take into account the application of the general tax credit. Moreover, they are granted a tax credit of 364 EUR, fully refundable	no
PT	Spouses are taxed on joint income	Wastable tax credit of 178.3 EUR for each taxable spouse, 213.96 EUR for each taxable single. Tax schedule is applied to halved joint income of spouses, then tax due is multiplied by two (before credits)	Wastable tax credit of 142.64 EUR for each dependent child	Wastable tax credit of 285.28 EUR for lone parent (instead of single person's credit)	For own and dependent education costs : wastable tax credit of 30% of costs, up to a maximum of 160% min. wage, raised by 30% for each dependent child in education from 3d ch. Not taken into account here since own expenses are included (majority of cost influencing the limit). Moreover this credit is combined with other credits for long term care costs and limited to 710.97 EUR.
FI	Spouses are taxed separately for earned income	no	no	no	no
SE	Spouses are taxed separately	no	no	no	no
UK	Tax unit is the individual but credits depend on joint income (WTC and CTC)	Means-tested non wastable "Working Tax Credit" (WTC) for workers, which includes a couples and lone parent element of max. 2169 EUR.This credit is combined with the means-tested non wastable "Child Tax Credit" (CTC). Max amounts for CTC elements are 788 EUR per family plus 788 EUR if child<1y (family element), and 2089 EUR/c (child element). Max amounts of WTC + CTC are granted for joint Y <7317 EUR, then WTC and child element reduced at a rate of 37% for joint Y<72300 EUR, then family element reduced to 0 at a rate of 15%. CTC is not conditional on being in work			In the WTC, there is a child care element of 70% of max 10180 EUR for 1c and 70% of max 15082 EUR for 2c+ for children under 3 cared outside home in registered facilities or childminders

Source: own calculations based on OECD (2004), Bradshaw and Finch (2002), Inland Revenue (2004) for UK, Ministère des Finances (2004) for Belgium, Administration des contributions directes (2004) for Luxembourg, Ministère des Finances (2004) for France and Law 46/2002 of January 18th for Spain.

Chapter III

Motherhood Choices

Siv Gustafsson and Eiko Kenjoh

3.1. Introduction

In this chapter, we summarise the results on "motherhood choices" that have been studied within the framework of the MOCHO. More in specific, this chapter discusses empirical evidence from micro-econometric analyses in order to examine the relationships between motherhood choices, labour market conditions and public policies. The studies performed utilise the data base created from several data sources in a number of countries and largely benefited from the other MOCHO research, e.g. labour market conditions (Chapter I) and policy analyses (Chapter II). In Section 3.2, we present general data on recent European fertility development. In Section 3.3, we explain data base work performed within the MOCHO project. In Section 3.4, econometric estimations performed by MOCHO members on the influence of socio-economic and demographic factors on fertility are discussed. In Section 3.5, we present results on econometric analyses on timing of motherhood and education. In Section 3.6, we conclude.

3.2. Review and Data on European Fertility

In this section, we present some important figures on European fertility development. Table 3.1 shows the total fertility rate (TFR), which is the most widely used measure for fertility, for a number of countries over the period 1960 through 2000. As can be seen from the table, almost all countries included had fertility rates above the replacement level or close to it from 1960 to 1970. However, since the 1970s, fertility rates have decreased in most of the countries, and in 2000 not a single European country reached the replacement level of 2.1, although Iceland with 2.05 comes rather close. The lowest fertility rates in 2000 were found in South and East Europe with the Czech Republic at the bottom of the scale at 1.14. In these countries, fertility decline started relatively late and its recent decrease has been particularly rapid. The table also includes figures for the United States and Japan as a comparison to the selected European countries. Whereas in 2000, the low Japanese fertility rate was comparable to rates in the European countries, fertility in the United States was very near the replacement.

3.2.1. Period and Cohort Fertility

The period total fertility rate (TFR) has the interpretation of the total number of children born per woman over her life cycle if current fertility rates remained constant at each age. This is a hypothetical measure because it is not based on observed patterns but on age specific fertility rates of a particular year. On the other hand, the actual childbearing of cohorts of women is given by the completed fertility rate (CFR), which indicates family size in a true cohort.

Table 3.1. Total Fertility Rate in Selected Countries, 1960-2000.

	1960	1965	1970	1975	1980	1985	1990	1995	2000
Austria	2.70	2.71	2.29	1.83	1.65	1.47	1.45	1.40	1.34
Belgium	2.56	2.62	2.25	1.74	1.68	1.51	1.62	1.55	1.66
Czech Republic	2.12	2.18	1.90	2.40	2.10	1.96	1.90	1.28	1.14
Denmark	2.57	2.61	1.95	1.92	1.55	1.45	1.67	1.80	1.77
Finland	2.72	2.48	1.83	1.68	1.63	1.64	1.78	1.81	1.73
France	2.73	2.84	2.47	1.93	1.95	1.81	1.78	1.70	1.89
Germany	2.37	2.50	2.03	1.48	1.56	1.37	1.45	1.25	1.38
FRG bef. unif.	2.37	2.51	1.99	1.45	1.45	1.28	1.45	1.34	1.38
Former GDR	2.35	2.49	2.19	1.54	1.94	1.74	1.50	0.84	1.22
Greece	2.22	2.25	2.40	2.32	2.22	1.67	1.39	1.32	1.29
Hungary	2.02	1.82	1.98	2.35	1.91	1.85	1.87	1.57	1.32
Iceland	4.27	3.79	2.83	2.65	2.48	1.89	2.30	2.08	2.08
Ireland	3.76	4.03	3.87	3.43	3.24	2.48	2.11	1.84	1.88
Italy	2.41	2.66	2.43	2.21	1.64	1.42	1.33	1.20	1.24
Luxembourg	2.37	2.39	1.97	1.55	1.49	1.38	1.60	1.69	1.76
Netherlands	3.12	3.04	2.57	1.66	1.60	1.51	1.62	1.53	1.72
Norway	2.91	2.95	2.50	1.98	1.72	1.68	1.93	1.87	1.85
Portugal	3.16	3.15	3.01	2.75	2.25	1.72	1.57	1.40	1.55
Spain	…	2.95	2.88	2.79	2.20	1.64	1.36	1.18	1.24
Sweden	2.20	2.42	1.92	1.77	1.68	1.74	2.13	1.73	1.54
Switzerland	2.44	2.61	2.10	1.61	1.55	1.52	1.58	1.48	1.50
United Kingdom	2.71	2.89	2.43	1.81	1.90	1.79	1.83	1.71	1.65
Japan*	2.00	2.14	2.13	1.91	1.80	1.76	1.54	1.42	1.36
United States**	3.65	2.91	2.48	1.77	1.84	1.84	2.08	2.02	2.06

Source: Council of Europe (2002), *Recent Demographic Developments in Europe.* *: Japan's Ministry of Health, Labour and Welfare (2002), *Vital Statistics*. **: United States' Bureau of Census: (http://www.census.gov/ipc/www/idbconf.html).

However, the CFR has the disadvantage that one has to wait until the woman reaches the end of her fecund age say 45 or 50 before one can measure it, whereas the TFR measures current fertility, by age of the woman. Therefore one can study recent trends by the TFR, whereas the CFR is a measure of fertility by those cohorts who have already reached age of infecundity.

Table 3.2. : Completed Fertility of Female Births in Selected countries, Cohorts born 1930 or after.

	1930	1935	1940	1945	1950	1955	1960	1965
Austria	2.32	2.45	2.12	1.96	1.87	1.76	1.61	…
Belgium	2.28	2.27	2.16	1.93	1.83	1.83	1.84	…
Czech Republic	2.14	2.12	2.07	2.03	2.10	2.07	2.02	1.92
Denmark	2.36	2.38	2.24	2.06	1.91	1.84	1.89	1.92
Finland	2.46	2.29	2.04	1.88	1.86	1.90	1.95	1.90
France	2.63	2.57	2.41	2.22	2.11	2.13	2.10	1.99
Germany	2.18	2.16	1.97	1.80	1.72	1.67	1.65	1.53
FRG bef. unif.	2.14	2.17	1.97	1.78	1.69	1.62	1.59	1.48
Former GDR	…	2.12	1.99	1.87	1.79	1.81	1.79	1.57
Greece	…	…	…	…	2.04	2.00	1.93	1.72
Hungary	2.07	1.99	1.92	1.90	1.95	1.94	2.02	1.97
Iceland	…	…	…	2.87	2.71	2.57	2.49	2.34
Ireland	…	…	…	…	3.04	2.67	2.41	2.19
Italy	2.28	2.28	2.14	2.07	1.89	1.80	1.65	1.48
Luxembourg	…	…	…	1.82	1.72	1.69	1.75	1.80
Netherlands	2.67	2.49	2.22	2.00	1.89	1.87	1.85	1.77
Norway	2.48	2.57	2.45	2.21	2.09	2.05	2.09	2.06
Portugal	2.94	2.88	2.66	2.42	2.08	2.04	1.90	1.82
Spain	…	…	…	2.43	2.10	1.90	1.75	1.59
Sweden	2.12	2.14	2.05	1.98	2.00	2.03	2.04	1.97
Switzerland	2.18	2.18	2.08	1.86	1.79	1.75	1.77	1.65
United Kingdom	…	…	…	…	…	2.02	1.96	1.87

Source: Council of Europe (2002), Recent Demographic Developments in Europe.
Note: Figures for 1960 and 1965 are based on estimates.

Table 3.2 shows CFR or completed family size for cohorts of women born between 1930 and 1965. In this table, generations for which completed fertility can be measured were born up to 1955 and estimates for more recent cohorts involve an element of projection. As revealed by the table, the CFRs show more of a continuous downward trend than the wide variation that is observed in the TFRs of Table 3.1. The reason why the TFRs vary more widely than the CFRs is that there is a timing effect on fertility so that a couple who aspired to a completed family size of two children may decide to postpone having a child if they perceive times as being bad. In other words, the TFR can vary considerably depending on the timing of births. One

example is Sweden where the CFRs are close to 2 for all cohorts, but the TFR was for example 2.13 in 1990 and only 1.54 in 2000. It is clear that each of the measures, TFR and CFR, capture different things and they are therefore not substitutable for each other.

3.2.2. Tempo and quantum effects

'One of the determinants of the decrease in total fertility rates in developed countries is postponement of maternity. Based on earlier demographic studies, Bongaarts and Feeney (1998) explain how total fertility rates can be divided into the quantum effect and tempo effect. The quantum effect is the total fertility rate that we would have observed, had there been no change in the timing of births. The tempo effect is the effect of changes in timing. To decompose fertility into the quantum and tempo effects, birth-order specific birth rates are needed for each one-year period and single year of age of the mother. The tempo-adjusted birth-order specific total fertility rate in that year, *(adj)TFR*$_i$, then can be computed as:

$$(\text{adj})\ \text{TFR}_i = \text{TFR}_i/(1 - r_i), \qquad (1)$$

where *TFR*$_i$ is the observed birth-order specific total fertility rate, r_i is the increase in the mean age of the mother at the birth of the *i*-th child. For example, if the mean age at first births increases from 27.0 to 27.1, then $r_1 = 0.1$. In order to obtain a measure of tempo and quantum effects, the adjusted total fertility rates should be computed by birth order (*i = 1, 2,* ...) and be summarised over birth orders:

$$(\text{adj})\text{TFR} = \sum_i (\text{adj})\text{TFR}_i. \qquad (2)$$

The difference between the observed total fertility rate (*TFR*) and the adjusted total fertility rate *(adj) TFR* is then a measure of the tempo effect.
The decomposition of total fertility rates into the quantum and tempo effect has been studied for a number of countries (Kohler, Billari and Ortega, 2002; Lesthaege and Willems, 2002; Kohler and Philipov, 2002). The main result from these studies is that postponement is responsible for some of the decrease in total fertility rates (TFR), but that there are also substantial quantum effects. As pointed out by Kohler, Billari and Ortega (2002), it is a well-established result that there is a correlation between tempo and quantum effects in the sense that later first births are correlated with smaller completed cohort fertility. Of course this is a mere correlation and the causality can be that a woman who decides to have two children does not have to start so early as a woman who wants to have four children. However, it is also possible that a woman who is a very late first-time mother will find that she is unable to realize her wish for a second child because of reaching age of infecundity.

Table 3.3. Mean Age of Women at Birth of the First Child in Selected Countries, 1960-2000.

	1960	1965	1970	1975	1980	1985	1990	1995	2000
Austria	●	●	●	●	●	24.3	25.0	25.6	26.3
Belgium#	24.8	24.5	24.3	24.4	24.7	25.5	26.4	26.9[93]	●
Czech Republic	22.9	22.7	22.5	22.5	22.4	22.3	22.5	23.3	24.9
Denmark	23.1	22.7	23.8	23.9	24.6	25.7	26.4	27.4	●
Finland	24.7	24.6	24.4	24.9	25.6	25.9	26.5	27.2	27.4
France#	24.8	24.4	24.4	24.5	25.0	25.9	27.0	28.1	28.7[99]
Germany#	25.0	24.4	24.0	24.5	25.0	26.1	26.6	27.5	28.0[99]
FRG bef.unif. #	25.3	24.6	24.2	24.9	25.5	26.5	27.0	27.6	28.0[99]
Former GDR#	23.9	23.6	23.3	23.4	23.5	24.1	24.6	26.3	27.6[99]
Greece	●	●	●	●	24.1	24.5	25.5	26.6	27.3
Hungary	22.9	22.9	22.8	22.5	22.4	22.8	23.1	23.8	25.1
Iceland	●	●	21.3	21.8	21.9	23.1	24.0	25.0	25.5
Ireland	●	●	25.8[72]	25.5	25.5	26.1	26.6	27.3	27.8
Italy	25.7	25.3	25.0	24.7	25.0	25.9	26.9	28.0	28.7[97]
Luxembourg	●	●	27.2	27.1	27.5	27.9	28.4	29.0	29.3
Netherlands	25.7	25.2	24.8	25.2	25.7	26.6	27.6	28.4	28.6
Norway	●	●	●	●	●	25.1[86]	25.6	26.4	26.9
Portugal	●	●	●	●	24.0	24.2	24.9	25.8	26.5
Spain	●	●	●	25.1	25.0	25.8	26.8	28.4	29.1
Sweden	25.5	25.2	25.9	24.4	25.3	26.1	26.3	27.2	27.9
Switzerland	26.1	25.6	25.3	25.7	26.3	27.0	27.6	28.1	28.7
United Kingdom#	●	●	●	●	●	●	27.3	28.3	29.1
Japan*	25.4	25.7	25.6	25.7	26.4	26.7	27.0	27.5	28.0
United States**	●	●	21.4	21.8	22.7	23.7	24.2	24.5	24.9

Source: Council of Europe (2002), *Recent Demographic Developments in Europe.* *: Japan's Ministry of Health, Labour and Welfare (2002), *Vital Statistics*. **: United States' National Center for Health Statistics (2002), '*Mean Age of Mother, 1970-2000*,' *National Vital Statistics Reports*, 51(1), (http://www.cdc.gov/nchs/births.htm).
#: Birth order within current marriage.

3.2.3. Postponement of maternity and ultimate childlessness

Table 3.3 presents the mean age of the mother at first birth for selected countries. In most of the countries in the table, there is a U-shaped pattern over time with the bottom in 1970 or 1975, i.e. the lowest age of motherhood in all these countries was realized around 1970 or 1975. The age of the mother at first birth initially decreased for the births that occurred in 1960 to the lowest level around 1970, and then it increased again to the highest level ever observed in 2000. The most recent pattern is that of increasing age at maternity. Not even in those countries where the trend towards older mothers started first, like the Netherlands, is there any tendency for this trend to level off.

For example, the age of the mother at first birth in the Netherlands averaged 25.7 in 1960 after which it decreased to 24.8 years in 1970. In 1990, it had risen to 27.6 years and in 2000 the mean age of the mother at first birth was as high as 28.6 years. There are also clear differences between countries with the East European countries having the youngest mothers. The largest increase in the mean age of the mother at first birth is observed in former East Germany, from 24.1 in 1985 to 27.6 in 2000. Interestingly, in 2000 the mean age of mothers at first birth was lower in the United States than in any of the European countries, presented in Table 3.3, whereas Japan has experienced the same recent trend of postponement of maternity as the European countries.

Is there a reason to worry about this trend? Having a child at age 29 is well within the biological limit. Looking at the mean age of the mother, there could still be little to have concerns about, but there is a distribution around the mean with particularly old mothers among highly educated women. Furthermore, there are also a large number of them that ultimately remain childless. Beets (1997) shows the median, first and third quartiles of the age of the mother at first birth according to birth cohort of the mother. The age at first birth when 75 percent of women have had a first birth had increased spectacularly comparing the cohort of women born in 1945 to that of women born in 1955.

Among the 16 European countries analysed by Beets (1997)[7], the third quartile is older than age 30 for seven countries namely Ireland, the Netherlands, Sweden, Denmark, England and Wales, Finland and West Germany. For West Germany the third quartile for women born in 1955 was as high as 34 years. This means that a large share of these 25 percent of women of this cohort will never give birth to a child, since very few first births occur after age 35 (Gustafsson, Kenjoh and Wetzels, 2002). In another study, Beets (1998) presents figures split according to the education of the mother for a number of countries and on the proportion women still childless at age 35. Beets analyses two cohorts, namely women born 1948-1952 and women born 1953-1957 and three educational groups high, medium and low between 1948 and 1952 as many as 43.2 percent were still childless at age 35 and for the cohort born 1953-1957 the proportion is 37.0 percent. Other countries that also have large numbers of childless women for the younger cohort are: Italy (33.0), Spain (35.3) and Canada (37.6).

3.3. Data base work on motherhood

In this section, we explain data base work on motherhood that has been performed for the papers with econometric analyses that examine the relationships between motherhood choices, labour market conditions and public policies. Partners 2 (the Amsterdam team) and 3 (the Turin team) are involved in this work: five papers from partner 2 and three papers from partner 3. Moreover, partner 4 (the Athens team) also provides one paper. Since every team

[7] The following 16 European countries are analysed by Beets (1997): Belgium, Czechoslovakia, Denmark, England and Wales, Finland, France, East Germany, West Germany, Hungary, Iceland, Ireland, Italy, the Netherlands, Norway, Portugal, Sweden.

has made their own data base, namely reorganizing data and creating necessary variables for their papers, we explain data base work for each paper.
We start by discussing the papers by the Turin team, followed by the paper by the Athens team, and then by the Amsterdam team. In the next section, we discuss socio-economic and demographic factors affecting maternity decisions and the results from micro-econometric estimations in these papers. In addition, Gustafsson and Kalwij (eds. forthcoming) also make a significant contribution to the current topic, 'Motherhood choices'. We will discuss extensively the papers included in this forthcoming book in Section 3.5.
Del Boca, Locatelli and Vuri (2003) study 'Child-care choices by Italian households'. This paper attempts to explain the small use of non-parental childcare and low labour force participation of mothers in Italy in an international perspective (see chapter I, Table 1.2 above). Del Boca, Locattelli and Vuri combine two different individual-level data sets for 1998: one is the Bank of Italy's Survey of household and wealth (IT-SHIW) and the other is the Multiscopo survey, collected by the Italian Institute for Statistics (ISTAT). The latter survey includes information on family structure, everyday-life, past and present work experience, use of social services and use of childcare. In particular, detailed information on childcare is the advantage of this data set. However, the survey does not provide information on household earnings and income. Therefore, they obtain this information from the former data, IT-SHIW, applying a statistical matching method. Their empirical analyses are carried out for the sample of 1259 married women aged 18 to 45 with spouse present, and with children in the age range 0-3.
Bratti, Del Bono and Vuri (2003), the second paper, is on 'Work attachment of new mothers: the role of human capital, employment stability and job protection in Italy'. This paper analyses women's employment after the birth of the first child. Bratti, Del Bono and Vuri use the Longitudinal Survey of Italian Households (LSIH), which has been conducted since 1997 by the University of Trento, Instituto Trentino di Cultura and the Italian Office of National Statistics. The first wave of 1997 is used for their analyses with retrospective information on women's employment history. They use the information on characteristics of women's work before marriage and first birth to investigate the effects of these variables on employment after first birth. Retrospective information allows constructing life histories on timing of births, education, work and occupation, social background, geographical area of residence. The sample includes 2,560 married women, of whom 12% without children.
Del Boca, Pasqua and Pronzato (2003) the third paper from the Turin team is on 'Analyzing women's employment and fertility rates in Europe: differences and similarities in Northern and Southern Europe'. This paper examines the effect of labour market characteristics and availability on child-care on fertility and labour force participation in several European countries. Del Boca, Pasqua and Pronzato use the European Community Household Panel (ECHP) 1994-1999 for Italy, Spain, Denmark, France and the Netherlands. They include the information on income, which is made comparable across countries by using PPP, purchasing power parity translation rates. Regional unemployment rates and percentages of part-time jobs taken from REGIO (Eurostat) are included in the analysis. They construct labour force participation histories around first childbirth. They use the sample of women in the age rage 21-45, married (or cohabitant) in five countries. The sample size for labour force participation estimation is 12,466 and for fertility equation is 16,764.
Symeonidou and Mitsopoulpos' study 'The timing of the first, second and third childbirths in Greece' (2003) is a contribution from the Greek team. The paper examines the effect of women's work history and other socio-economic factors on childbirth timings. The data set they use is the 1999 Greek Fertility and Family Survey by the National Centre of Social Research, which is in the framework of the international Fertility and Family Survey, coordinated by the Population Activities Unit of the United Nations (PAU) in the 1990s. Using retrospective information in this survey, they create a database on Greek women's fertility history. More in specific, they make variables on time duration in months from age 15

to first birth, first to second birth, second to third birth and analyse how predetermined variables shift the hazard, or conditional probability of having a birth of birth order 1,2 and 3, given that the event has not yet taken place. This paper analyses 1,852 women for the first births, 1,643 women for the second births, and 1,255 women for the third births.

Gustafsson, Kenjoh and Worku (2003) in the first paper from the Amsterdam team discuss 'Human capital of women and men and the timing of parenthood'. The paper first analyses the connection between three related developments in European countries: decline in fertility, postponement of motherhood and extension of full-time education period. The paper then proceeds to a deeper analysis on the timing of parenthood and prospective mothers' and fathers' education. Using the data from the British Household Panel Survey (BHPS) 1991-1998, Gustafsson, Kenjoh and Worku construct first birth, union formation and education histories by searching backwards for couples of woman's first child. The analyses include 6079 women and 5593 men in Britain who give necessary information including the level of education.

Kenjoh (2003) in the second paper of the Amsterdam team studies 'Women's employment around the birth of the first child in Britain, Germany, the Netherlands, Sweden and Japan'. This paper examines the effect of family friendly policies on new mothers employment in these five countries, comparing births that occurred in the 1980s to those that occurred in the 1990s. She employs the following household panel data from five countries: for Britain, BHPS 1991-1998 (the same as Gustafsson, Kenjoh and Worku, 2003); for Germany, the German Socio-Economic Panel (GSOEP) 1984-1998; for the Netherlands, the Labour Force Supply Panel 1985-1998 collected by the *Organisatie voor Strategisch Arbeidsmarktonderzoek* (OSA, Netherlands' Institute for Labour Studies); for Sweden, the *Hushållens ekonomiska levnadsförhållanden* 1984-1998 (HUS, Household Market and Non-Market Activities) and for Japan, the Japanese Panel Survey of Consumers 1993-1997 (JPSC). Kenjoh constructs work histories of women around first childbirth in each of the five countries. She searches for information through different waves and retrospective information and reschedules monthly work information with birth month equal to zero. She selects the women who gave birth to the first child during the observation period of the 1980s and the 1990s. The number of women studied is between 300 and 1100 depending on countries.

Wetzels and Tijdens (2002), the third paper from the Amsterdam team, studies 'Dutch mothers return to work and the re-entry effect on wage'. The paper compares the information from three individual level data sources in the Netherlands. The first one is the FNV (the largest trade union confederation in the Netherlands) re-entrants survey (FNV, 2000), which gives information on women's motives for re-entering to the labour market and the chances of re-entry. For the analyses, 1,926 observations are originally included. The second one is OSA 1996 and 1998 (above mentioned). Based on this data set, the sample of 907 women who did not participate in the labour market in 1996 is analysed to see whether these women (re-)entered the labour market in 1998. The third data source is the Women's Wages Indicator 2000-2001 (WWI 2000-2001, or VLW 2000-2001 in Dutch), which includes the information on women's wages. This data set provides the information on 15,508 women for the analysis on the impact of re-entry on women's wages. The data set employs an interesting method to collect information on women's wages through the Internet, initiated by Kea Tijdens at the University of Amsterdam. On the website of the project, the viewers can find out, from the information collected, how their own wage compares to that of other people with similar education, age and occupation. They are also asked to deliver their own data. This project has grown out to a European union sponsored project, *WOLIWEB*[8], directed by Tijdens and indeed a worldwide project including non-European countries with additional sponsoring.

Wetzels and Zorlu (2003) analyse 'Wage effects of motherhood: A double selection approach'.

[8] The full-title of the project is 'The socio-economic determinants of citizens' work life attitudes, preferences, perceptions, using the data from the continuous web-based European Wage Indicator Survey'.

This paper estimates wage differentials between mothers and childless women in the Netherlands, correcting for the selectivity bias resulting from two sources: 1) the motherhood decision and the employment decision and 2) the motherhood decision and the decision to be employed in a less demanding job. They use Dutch Work and IT 2001 survey. This derives from the computerized 'Telepanel' collected by Tilburg University. This panel contains a representative sample of the Dutch population. The paper analyses 509 working and 210 non-working women aged 16 to 64.
Wetzels (2003) analyses 'Women's wages and double selection into motherhood and less demanding job: analysis of age groups in the Netherlands'. The paper employs the double selection approach but focuses on differences across age groups. It uses the above mentioned WWI 2000-2001 and selects a sample of 9337 working women born from 1940 to 1979. While this data set only includes employed women with wage information, the relatively large number of observations allows the author to divide the sample into three age categories.

3.4. Results of Econometric estimations on the influence of socio-economic and demographic factors on fertility

In this section, we discuss the influence of socio-economic and demographic factors on fertility, for example, education, labour market experience before motherhood, family background of women on fertility. Institutional factors such as availability of affordable child-care, generosity of parental leave, and part-time employment opportunity also play an important role in fertility decision. The nine papers we discussed in the previous section examine these issues (see also Appendix Tables 3.1 and 3.2). The information given in Chapters I and II form backgrounds for the econometric work. Chapter I identifies research questions related to labour market conditions, for example, which countries have low female labour force participation and low fertility, and which countries have little or much part-time work. Chapter II indicates the status of a country in international perspective as regards relative generosity and availability of parental leave, childcare and financial support to children. Note that most of the econometric studies reported below are based on data from one country. This means that the policy indicators developed in Chapter II cannot be directly used in the econometric analyses, since Chapter II delivers one value of the index for each country so that there is no variation to examine policy effects on motherhood choices. Similarly, for econometric studies using two countries G*ustafsson and Worku (2004)* or even five countries *Kenjoh (2003)*, the index does not provide enough variation to use. However, an approach using directly measure values on policy variables is being developed by Del Boca, Pasqua, Pronzato and Wetzels. This study is an extension of *Del Boca, Pasqua and Pronzato (2003)* with more countries included from the ECHP. The work reported in Chapter II is therefore used as background information for econometric analyses in a similar way as the work reported in Chapter I.
In Italy, where the female labour force participation rate is low (44%), only a very limited proportion of families with children under 3 use formal childcare (6%) (see Chapter I). *Del Boca, Locatelli and Vuri (2003)* examine why so few Italian households use public childcare and whether such little use of childcare explains the low participation rate. The first part of their paper presents simulation exercises based on their theoretical model on mothers' decisions on market work and childcare use. The following cases are presented. First, increasing the eligibility criterion for public childcare (from 25 to 40 thousand euro of the family income upper limit) induces mothers to switch to use public childcare rather than private childcare and increase the number of hours supplied by mothers. The elasticity of hours of work is $\varepsilon(H) = 0.02$. Second, increasing the price (parental fee) of public childcare (6.5 to 7.5 euro per hour) decreases female labour supply, $\varepsilon(H) = -0.19$. Third, extending opening hours for public

childcare (from 7 to 8 per day) increases female labour supply, ε(H) = 0.13.
On the matched data as described in section 3.3 above, *Del Boca, Locatelli and Vuri* estimate two econometric models. First, a bivariate probit model on being employed and purchasing child care (both private and public) is estimated to analyse the joint decision on labour force participation of mothers with young children and their use of formal childcare. The results show that mothers of a child aged 0-3 are more likely to work if their education is high and if household non-labour income is high. Both grandmother nearby and healthy, and husband's hours of housework indicate positive effects on women's employment. This result means that greater familial support is helpful for mothers to work in paid labour. They also find significant effects of policy variables and regional labour market conditions. High local public financial support, which is like welfare benefits, and high unemployment rate lower the probability of mothers to work, whereas larger opportunity to work in part-time employment increases this probability. The second econometric model estimated is a multinomial logit model on childcare choices among public, private and informal childcare for households where wives work. They find that the availability of public childcare increase the probability to use public childcare. Based on the estimations, they also present simulation results, which show that if availability of public child care increased to Danish standards (64%), mothers' work and use of formal childcare would increase from 7% to 27%, whereas increase in childcare subsidies would not raise the mothers' work and childcare use much. Their policy conclusion is to recommend increases the number of spaces in childcare for Italy.
The main research question of *Bratti, Del Bono and Vuri* (2003) is how working conditions before first child determine labour force status after childbirth in Italy. Particularly, they examine participation behaviour of mothers at the time when the child is aged 12, 24 and 36 months. They show that mothers' labour force participation rate is almost the same when the child is 12, 24, and 36 months old. The variation is only 42, 42 and 40 per cent respectively. This contrasts widely with behaviour in Britain, Germany, the Netherlands, Sweden and Japan, analysed by Kenjoh (2004) where labour force participation of mothers is shown to increase as the child's age increases. They estimate three independent bivariate probits, which jointly estimate selection into having a child (by the end of observation period, namely by 1997) and being employed when the child is 1) 12 months, 2) 24 months, 3) 36 months. Subsequently, they estimate a probit model on having at least one career break in 36 months for women who were at work 9 months before having their first child.
These empirical analyses find the connection between women's pre-marital employment and motherhood employment in Italy. Having a regular job contract, and formal and informal childcare availability show positive effects on mothers' employment 12, 24, and 36 months after childbirth. Women's education, pre-marital work experience, work in the public sector increase the probability for women to work after having children and also reduce the likelihood for making a career interruption during the first three years after first childbirth.
Del Boca, Pasqua, Pronzato (2003) examine whether the inter-country variation of labour force participation and fertility (see Table 1.2 in Chapter I) can be explained by differences in family policies and labour market conditions. They analyse the joint decision on fertility and labour force participation of women based on the pooled data set of five countries, namely Italy, Spain, Denmark, France and the Netherlands, and six waves. They estimate fixed effects logit models on fertility and participation separately, given the independence between these two decisions conditional on observable and unobservable (person-specific) characteristics. The dependent variables are as follows. Fertility is equal to 1 if the woman had a child in the last year and participation is equal to 1 if the woman is working at the time of the interview.
They detect some statistically significant effects of policy variables on fertility decision and on labour force participation of women for five European countries. Part-time job opportunity has a positive effect and regional unemployment has a negative effect on women's participation, whereas availability of childcare services has a positive effect on fertility. They

also present a graph on women's employment around birth of the first child for some European countries. The graph shows that in Italy and Spain there are almost no swings in labour force participation around childbirth, which confirms the finding by Bratti, Del Bono and Vuri (2003) for Italy. A large dip of employment around childbirth is found for Britain in this study based on the ECHP, which is also found by Kenjoh (2003) using the BHPS (see below).

Symeonidou and Mitsopoulpos (2003) show how incompatible childbearing and employment are in Greece. They examine whether timing of each birth is determined by 1) woman's experience of 'other' pregnancies such as miscarriages, abortions, and still births, 2) education of woman and her husband, 3) woman's labour force behaviour around birth, 4) age of the woman and her husband, and 5) the sex of the previous child. They also control for the woman's birth cohort, the number of siblings of the woman and the size of her childhood residential area. They estimate the duration from age 15 to first births, from first to second births, and from second to third births, using event history techniques.

Their results are summarised as follows. First, Greek women either stick to a job or leave work permanently. For example, the percentage of women who withdraw from the labour market at having their first child and never resume market work afterwards is high, with 67% for fist birth and 77% for second birth. Also, women with stronger labour force attachment are less likely to make the transitions to have (more) children. Being in education has a negative effect on having children. They explain that these results are caused by the fact that policies towards the reconciliation of family and working life are inefficient and insufficient in Greece. Second, the situation in 1999 did not improved from that in 1983, for which a similar study was conducted. Third, younger cohorts postpone childbearing in comparison to older cohorts. Finally, third birth increases if previous births were girl, girl but not if boy, boy.

Gustafsson, Kenjoh and Worku (2003) investigate how important own education and partner's education are for the decision on birth of the first child. Their hypothesis is that since both men and women have education and career plans, the timing of couple formation and first childbirth depends on these plans. They estimate Cox proportional hazards of having the first child. Their dependent variable is duration from age 15 to the birth of the first child. The main explanatory variables are nine combinations of education level of husband and wife such as high educated husband and high educated wife, high educated husband and medium educated wife, etc.

They analyse if the spouse has longer education, parenthood is delayed for a given educational level of the individual man or woman. The theoretical background of this argument is sequential determination of having a birth as discussed in Symeonidou and Mitsopoulpos. In other words, young people make a plan for a family size and they start family formation when planned education is finished.

Kenjoh (2003) examines whether we can explain work behaviour around first birth by differences in institutional setting in five countries, namely Britain, Germany, the Netherlands, Sweden and Japan. She compares policy development and new mothers' employment from the 1980s to the 1990s. She analyses the following aspects of family friendly policies: length of parental leave, level of paid leave benefits, flexibility of leave arrangements, availability of affordable child care and availability of part-time employment (especially for Dutch and Japanese women).

She presents detailed graphical analyses on monthly employment status of women from twelve months before first childbirth to sixty moths after for each of five counties and the 1980s and the 1990s. Employment status is distinguished between 'out of the labour force, unemployed, on maternity leave, working part-time, working full-time and self-employed'. She then proceeds to estimate multinomial logit models on women's employment status between working full-time, working part-time, and not working for the period after having children. The graphs show that in the 1980s the proportion women who worked 60 months after

childbirth was 70% in Sweden, whereas it was below 50% in the other four countries. Dutch and British mothers of 1990s worked much more than the 1980s mothers, whereas German mothers of the 1990s worked less. Swedish and Japanese women showed no significant change between the two decades. These results are also confirmed by the econometric analyses and in line with policy development in each of the five countries.

Wetzels and Tijdens (2002) analyse what determines Dutch mothers re-entry to the labour market and whether career-breaks decrease subsequent wages. Their analyses are motivated by the following policy issue. In 2000, the European Council in Lisbon set a target for the net participation of women in the European Union of more than 60% by 2010 (see Chapter I). To meet this target, it is important to induce women to re-enter after a period of full-time mothering. Thus understanding the behaviour of female re-entrants and also their positions in the labour market is essential to draw adequate policy interpretation.

They estimate a logit model on having a job in September 1998 given that a woman did not work in September 1996 (OSA). They also estimate a logit model on succeeding in finding a job among female job seekers, using the FNV 2000. Finally, they examine the effect of re-entrant and career break on women's wage, estimating hourly wage functions by OLS using the WWI data. The results show that women aged 45 or younger are five times more likely to re-enter than women older than 45 years. They also find that re-entry has a large negative wage effect.

Wetzels and Zorlu (2003) investigate whether the motherhood pay gap to some extent is determined by mothers' selecting themselves into non-demanding jobs. In other words, they analyse wage differences between mothers and childless women, correcting two double selection processes: firstly, the motherhood decision and the employment decision and secondly, the motherhood decision and the decision to be employed in a less demanding job. They use a cluster analysis to distinguish between a less demanding job and a demanding job. Then, they estimate wage equations separately and present wage decompositions between mothers and non-mothers depending on whether they have demanding or less demanding jobs.

They detect that mothers in demanding jobs earn 4.5% more than non-mothers in demanding jobs, and that mothers in less demanding jobs earn 6.5% less than non-mothers. Wage decompositions dividing between 'due to endowments' and 'due to discrimination' show that when selectively is accounted for, the wage premium for mothers in demanding jobs is 20.5% due to discrimination and the wage loss for mothers in less demanding jobs is 37.1%.

Wetzels (2003) further examines wage differences between mothers and childless women, correcting two double selection processes as Wetzels and Zorlu (2003), focusing on the differences between age groups, or cohorts of women. The motivation of this analysis is to examine the effect of change in Dutch policies on combining family and work since 1990. There are large cohort differences in labour force participation among Dutch women. Potentially wages for mothers have changed as an effect of policy changes. The question is then: do more mothers of the younger cohort select themselves into the more demanding jobs and is the wage penalty for motherhood then smaller for the younger cohort?

Compared to the data used in Wetzels and Zorlu (2003) above, this paper takes an advantage of a large number of observations, which allows her to estimate separate analyses for three age groups. Wetzels show that wage difference results as in Wetzels and Zorlu (2003) are more pronounced for women aged 26-36 and aged 37-46 than for women aged 47-64.

3.5. Education and postponement of maternity

Since the mid-twentieth century, there has been an increase in the length of education in OECD countries. Both men and women spend much more of their young adult lives in full-

time education[9]. An increased demand for skilled labour has resulted in educational expansion, which could be one of the major explanations of postponement of parenthood. In this section, we look at the relation between education and postponement of maternity. The papers discussed in this section are chapters included in the book volume edited by Gustafsson and Kalwij (forthcoming) (see also Appendix Table 3.1 and 3.2). To fill the gap on empirical studies on timing of maternity in Europe, Gustafsson approached the research community with a call for papers when the MOCHO project was started. The papers were accepted on the basis of abstracts and first drafts were presented at the Scholar Institute of the University of Amsterdam took place in October 2002. The editors have then read and commented on various versions and authors have made significant improvements.

In this section, the following questions are discussed. Is the role of education in delayed motherhood the same in different countries? Is postponement of maternity caused by the lack of income during student life or is it due to competing time use? Or are future income prospects determining? Was it worth waiting to have a child until later in terms of career outcomes? Is finding a husband being delayed during student life or do higher educated couples wait longer to become parents? Do highly educated couples have fewer children than less educated couples?

There is a vivid methodological debate on how one can identify causal effects in the area of fertility, since choices about education, marriage, labour force participation and motherhood are typically interrelated and perhaps simultaneously determined. Gustafsson and Kalwij (2004) review and evaluate this debate and show how the different papers included in the volume have dealt with methodological issues. There are two approaches in the econometric literature on fertility, which both claim to model the full fertility history. The system of hazards approach initiated by Heckman and Walker (1990) on the one hand and the structural discrete time method by backward recursion suggested by Wolpin (1984). Each of these methods requires programming and extensive computations by the researcher and cannot be estimated using available software. Only a handful of followers exist for either method. One review of econometric analyses on fertility, Hotz, Klerman and Willis (1997) conclude that empirical work is much less developed than either the economic theoretical modelling or the econometric techniques. The papers included in Gustafsson and Kalwij (eds. forthcoming) focus on different aspects of the timing of maternity.

Skirbekk, Kohler and Prskawets (2004) show that there is a special compulsory school cohort effect, at least in Sweden. Those who are born in January, because they are older at finishing school than those born in December, are also 4.9 months older when they have their first child. This effect remains although the latter event takes place 10 to 12 years later than completion of compulsory school. The conclusion is that age at finishing school rather than calendar age is important for timing of maternity.

Competing time use for raising children with working in the labour market is emphasized in *O'Donoghue and O'Shea (2004)* on Ireland and in *Bratti (2004)* on Italy. The Irish study shows that the propensity of first births in 1994 in comparison to 1970 decreased mainly because female wages hade increased and the proportion time women spent in the labour market had increased but also because couples waited longer after marriage. *Bratti (2004)* finds that Italian women with higher education tend to combine work and family to a larger extent than less educated women and they also postpone motherhood more. Uncertainty about future income is emphasized in *De la Rica and Iza (2004)* on Spain. Fixed-term contracts rather than

[9] Gustafsson, Kenjoh and Wetzels (2002) estimate that mean age at finishing full-time education for women born in the 1960s compared to those born in the 1930s increased between 1.2 to 2.8 years in a 30 year period in Britain, Germany, the Netherlands and Sweden. School life expectancy computed by UNESCO (2002) also presents a large extension in educational period. Since 1970, almost all countries that the data are available experienced the increase of this measure. For instance, the total year of a female child spent in school rose from 11.5 in 1970 to 13.5 in 1995. The corresponding figures increased 10.9 to 13.5 for Ireland, 12.3 to 16.8 for the Netherlands and 12.3 to 16.2 for the United Kingdom, respectively (see Gustafsson, forthcoming, Tables 1.3a, 1.3b and 1.3c).

permanent contracts have grown on the Spanish labour market particularly for young people. The results show that having a fixed-term rather than an indefinite labour contract delays entry into marriage for men, but not for women, whereas a fixed-term contract held by a woman makes her delay motherhood.

Was it worthwhile career-wise to postpone maternity? This is the question asked in *Amuedo-Dorantes and Kimmel (2004)* for college educated US women. The results show that women who delayed motherhood in comparison to equally educated mothers who had children earlier in life earn substantially higher wages, so it was worth waiting.

In *Kalwij (2004)* the focus is on savings behaviour around births in the Netherlands. The main findings are that couples do save more before having a child than after, which is in line with a consumption smoothing hypothesis but they do not reduce savings enough to offset the reduction in income due to women leaving employment. Couples with children consume less, not more than childless couples.

Timing of maternity in transition economies is analysed in *Kreyenfeld (2004)* and *Kantorova (2004)*. Both for East Germany after unification and for the Czech Republic after the fall of the Soviet Union postponement of maternity has increased. One of the major effects is that educational differences in timing of maternity have increased in both countries during transition to market economies. This suggests that career planning has become more important in comparison to the state socialist period when child care and maternity leaves were more abundant and individual choices were less important to earnings. *Kreyenfeld (2004)* and *Kantorova (2004)* show that the institutional setting plays a role. In *Gustafsson and Worku (2004)* the institutional setting is also in focus in comparing timing of couple formation and timing of first birth in Britain and Sweden. It is well known that Sweden has had potentially pronatalist family policies since the early 1970s and such policies are also today compared to the British situation more favourable to becoming a parent (see Chapter II above). Yet, Swedish women of a given education are not younger mothers than British women. In *Gustafsson and Worku (2004)* it is shown that Swedish women are older at finishing education, older at entering a marriage or cohabitation, but once the couple is formed they are quicker to have their first child. They may have identified the pronatalist effect, which in cross tabulations is not visible because of an opposing effect from the fact that Swedes are older than British when leaving shcool.

The Norwegian completed family size is analysed in *Naz, Nilsen and Vagstad (2004)*. This paper shows that higher educated married couples in Norway have more children than less educated couples and that this effect is primarily driven by husband's education rather than by wife's education. This is not a contradiction to other findings that higher educated women have fewer children than less educated women. The difference instead comes from lower probability to form a couple.

3.6. Conclusions

Econometric work of the MOCHO project has pointed to some important explanatory factors for the combination of work and motherhood or for the lack of opportunities for combining work and motherhood in some of the countries we studied. One of the conclusions is that whereas we observe a pattern of almost universal full-time labour force participation among women who are not yet pregnant with their first child in countries like Sweden, Germany, the Netherlands and Britain, this is not yet the case in countries like Italy and Spain. In Japan there is a high pre-motherhood labour force participation that drops to a much lower level, around 40 per cent, after childbirth, which increases very little as the child approaches 5 years of age. By contrast employment of new mothers drops sharply at the time of the birth of the first child in Britain, Germany and Sweden to be resumed, when the child is 5 years old, almost

completely in Sweden and to a large degree in Britain and Germany (about 60 per cent). In Italy on the other hand the same proportion of new mothers are working when the child is 12 months old as when the child is 24 and 36 months old: about 40 per cent of the new mothers are working. In Greece women have to either stick to their job or leave it permanently. These observations about women's labour force participation around the birth of the first child suggest that public policies that facilitate the combination of work and family affect women's labour force participation not only in the short run around childbirth but also in the long run after children have entered school.

Much econometric modelling effort has been focused on the issue how to identify causal effects on women's labour supply and fertility. Since the decisions are often taken simultaneously, it does not seem right to explain fertility by labour market behaviour and labour market behaviour by number of children as has often been done in the past. Therefore the simulation policy analysis of *Del Boca, Locatelli and Vuri (2003)* gives some independent policy effects by analysing effects on labour supply of women by changing the price of public childcare, the upper family income level and the opening hours of public childcare in Italy. This analysis shows that the last two policy changes will increase female labour supply, while decreasing the price of public childcare will only make families switch from private to public childcare.

The help of extended family is important in Italy and Japan. In Italy having a healthy grandmother who lives nearby will increase labour supply of the new mother. In Japan it is not uncommon to live together in a three-generation family. In such families the young mother is more likely to work in a regular job, other things equal. In the Netherlands we have witnessed a large cohort effect in female labour force participation. Whereas in the 1980s it was still uncommon for new mothers to be employed in the labour market it has become common to do so in the 1990s. The probability to reenter the labour force from having been in a work interruption, comparing 1996 to 1998, was about 4 times larger for someone under the age of 45 in comparison to an older woman. It means that the probability that an older woman re-enters is very low.

This is another indication that the long labour force interruptions for mothers advocated by traditionalists are damaging to overall labour force participation. However, the view on how long is a long interruption varies between countries. For example, almost all Swedish women take 12 months parental leave after giving birth, even when they have career ambitions (*Kenjoh, 2003* and Gustafsson and Kenjoh, 2004). This suggests that mothers do not see the 12 months of leave period as being too long in Sweden. Indeed, in this country career interuption due to taking parental leave does not have a negative influence on women's wages (Albrecht, et al., 1999). In other countries, long career breaks may be more damaging as the literature on so-called family wage gap i.e. the wage difference between mothers and non-mothers indicates (Chapter I).

Wetzels and Zorlu (2003) and *Wetzels (2003)* are extending our knowledge of the sources of the family wage gap. Their idea is that women may either select themselves into demanding jobs or into non-demanding jobs and they model this selection. Their analysis shows that mothers who had chosen for demanding jobs actually earn more than women who are not mothers, other things equal, by 4.5%, whereas in non-demanding jobs the wage differential is reversed. Such a positive wage gap for mothers compared to non-mothers is also found for American college educated women (*Amuedo-Dorantes and Kimmel, 2004*), who have postponed their first birth. It is likely that the reason for postponement is career planning which explains the result that college educated women who postponed first birth earn more than college educated women who did not postpone first birth and even more than childless college educated women.

These high earning mothers are the high achievers or in words of *Wetzels and Zorlu (2003)* and *Wetzels (2003)* the ones who select themselves into demanding jobs. Those women who are

able to do both the mothering and the demanding jobs are efficient above average and they are rewarded for that on the labour market. This result is also promising because it suggests that mothers are not discriminated against on the Dutch labour market if we agree on the assumption that being in a demanding or non-demanding job is their own choice. However, the selection may be a source of discrimation if employers discriminate against mothers when hiring for demanding jobs.

Finally, the papers in Gustafsson and Kalwij (eds., forthcoming) show that institutions matter because although education postpones motherhood in all the countries studied, the size of the effect differs between the countries. In order for there to be an effect from education on postponement of maternity there has to be a labour market that demands skilled female labour and skills have to make a difference for the sort of career a woman can expect. Both past incomes and savings, labour market career in the past, current and expected future situation matter for both the woman and for the man, for their decisions on when to form a couple and have a child.

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Appendix Table 3.1. Review of the studies included in this chapter

Author & Year	Country	Main topic	Methodology	Findings
Amuedo-Dornantes, C. and J. Kimmel □ 2004□	USA	Motherhood wages and postponement of maternity	Hourly wage estimations by pooled OLS or Fixed effects, controlling for selection into employment	• College educated mothers do not experience a motherhood wage penalty. • Women who delayed motherhood in comparison to equally educated mothers who had children earlier in life earn substantially higher wages. Thus it is worth postponing having a child.
Bratti, M. (2004)	Italy	Marital fertility and women's labour force participation	• Multinomial logit model on fertility and participation	• Italian women with higher education tend to combine work and have children to a larger extent than less educated women. They also postpone motherhood more.
Bratti, M., E. Del Bono and D. Vuri (2003)	Italy	Mothers' labour force participation	• Three bivariate probits on mothers labour force participation when 1st child is 12, 24, 36 months old • Probit model on having at least one career break during the 36 months after first childbirth	• Having a regular job contract, and formal and informal childcare availability show positive effects on mothers' employment. • Women's education, pre-marital work experience, work in the public sector increase the probability for women to work after having children and reduce the likelihood for making a career interruption during the first three years after first birth.
De la Rica, S. and A. Iza (2004)	Spain	Timing of marriage and first birth for men and women	• Logit models on 1) getting married and 2) having a first birth • Hazard estimations on 1) getting married and 2) having a first birth	• Fixed-term contract rather than permanent contracts have grown on the Spanish labour market particularly for young people. • Having a fixed-term rather than an indefinite labour contract delays entry into marriage for men, but not for women, whereas a fixed-term contract held by a woman makes her delay motherhood.

Del Boca, D., M. Locatelli and D. Vuri (2003)	Italy	Childcare use and mothers' employment	• Simulation based on theoretical model on child-care use • Bivariate probit model on employment and childcare • Multinomial logit model on childcare choices among public, private and informal childcare where wives work	• Increasing the upper family income level and the opening hours of public childcare have a positive effect on female labour supply, while decreasing the price of public childcare will only make families switch from private to public childcare. • High local public financial support and high unemployment rate lower the probability of mothers with children aged 0-3, whereas larger opportunity to work in part-time employment increases this probability. • The availability of public childcare increases the probability to use public childcare.
Del Boca, D., S. Pasqua and C. Pronzato (2003)	Italy, Spain, Denmark, France, NL	Fertility and women's labour force participation	• Using pooled data from the 5 countries, fixed effects logit models on fertility and participation	• Part-time job opportunity has a positive effect and regional unemployment has a negative effect on women's participation, whereas availability of childcare services has a positive effect on fertility.
Gustafsson, S., E. Kenjoh and S. Worku (2003)	UK	Timing of fist birth for men and women	• Cox proportional hazard models of having a first child	• The educational investments of husband and wife have independent effects on the timing of parenthood so that a low educated woman will take more time to have a first child if her husband has a high education than she will if he has a low education. .
Gustafsson, S. and S. Worku (2004)	UK, Sweden	Timing of couple formation and first birth for men and women	• Weibull hazard models with individual unobserved heterogeneity	• Compared to Swedish women, British women are on average younger at finishing education, younger at entering a marriage or cohabitation. Once the couple is formed, however, British women are slower to have their first child.
Kalwij, A.S. (2004)	NL	Household consumption around childbirth	• The conditional Euler equations for income growth and consumption growth	• Couples save more before having a child than after, which is in line with a consumption smoothing hypothesis but they do not reduce savings enough to offset the reduction in income due to women leaving employment. • Couples with children consume less, not more than childless couples.

Kantorova, V. (2004)	Czech Republic	Timing of motherhood	• Event-history model (generalized Gompertz) with age of mother as piecewise linear spine	• In the 1990s, the period between studies completion and entry into motherhood prolonged, especially for university graduates. • Greater education differentiation of labour market opportunities and constraints brought about greater education differentiation in the timing of entry into motherhood.
Kenjoh, E. (2003)	Japan, Britain, Germany, Sweden, NL	Mothers' employment	• Multinomial logit models on mother's employment choice between full-time, part-time, not at work for each country	• Mothers in Britain and the NL work more in the 1990s than 1980s for the 5 years after first birth, whereas West German mothers work less in the 1990s than 1980s and Swedish and Japanese mothers do not show a significant difference between these two decades. These changes reflect the policy change in these countries. • Higher education has strong positive effects in the UK and the NL, whereas no significant effects in Sweden.
Kreyenfeld (2004)	Germany	Timing of motherhood	• Piecewise constant event history model	• In the former GDR, educational participation and parenthood was more compatible than in the West and there was little variation in the timing of fertility by educational attainment. • Compared to the situation before unification, parenthood and educational participation is less compatible in present day East Germany. The variation in the timing of first birth by woman's education attainment has substantially increased after unification in East Germany.
Naz, G., Ø. Anti-Nilsen and S. Vagstad (2004)	Norway	Completed fertility	• Restricted generalized Poisson regression model	• Higher educated married couples have more children than less educated couples. This effect is primarily driven by husband's education rather than by wife's education. • For unmarried women, the relationship between education and fertility is negative. This suggests that these women suffer a more detrimental impact of motherhood on their careers than do married women.

O'Donoghue, C. and E. O'Shea (2004)	Ireland	Fertility	• Logit models of first, second, third or higher order births for marriage women • Decomposition of percentage change in female fertility propensity 1970-1994	• The propensity of first births in 1994 in comparison to 1970 decreased mainly because female wages had increased and the proportion time women spent in the labour market had increased but also because couples waited longer after marriage.
Skirbekk, V., H.P.Kohler, and A. Prskawetz (2004)	Sweden	Timing of first and second birth and completed fertility for women	• Regression on the age at first birth with birth month dummies	• School leaving age has a strong effect on the timing of the first and second childbirths. For example, women born in December enter and leave compulsory school when they are 11 months younger than women born in January the next calendar year. However, the former women have their first birth at an age which is 4.9 months younger than the latter women.
Symeonidou, H. and G.P. Mitsopoulpos (2003)	Greece	Timing of first, second and third birth for women	• Piecewise constant exponential models on duration from age 15 to first birth, first to second birth and second to third birth.	• Greek women either stick to a job or leave work permanently. Women with stronger labour force attachment are less likely to make the transitions to have (more) children. • Younger cohorts postpone childbearing comparison to older cohorts.
Wetzles, C. and K. Tijdens (2002)	NL	Women's employment and wages	• Logit model on having a job in 1998 given that a woman did not work in 1996. • Logit model on succeeding in finding a job among female job seekers • Hourly wage estimations by OLS	• Women aged 45 or younger are 5 times more likely to re-enter than women older than 45 years. • Re-entry has a large negative wage effect.

Wetzels, C. and A. Zorlu (2003)	NL	Motherhood wages	• Cluster analysis to distinguish between a less demanding job and a demanding job • Estimating hourly wage for mothers and childless women separately	• Mothers in demanding jobs earn 4.5% more than non-mothers in demanding jobs, whereas mothers in less demanding jobs earn 6.5% less than non-mothers.
Wetzels, C. (2003)	NL	Motherhood wages	• The same as above, but separating three age groups.	• Wage difference results as in Wetzels and Zorlu (2003) above are more pronounced for women aged 26-36 and aged 37-46 than for women aged 47-64.

Appendix Table 3.2. Main results from micro-econometric analyses according to country

DE <Fertility> In the former GDR, educational participation and parenthood was more compatible than in the West and there was little variation in the timing of fertility by educational attainment. However, compared to the situation before unification, parenthood and educational participation is less compatible in present day East Germany. The variation in the timing of first birth by woman's education attainment has substantially increased after unification in East Germany. (Kreyenfeld, 2004)

<Employment> West German women who gave birth to the first child in the 1990s worked less after first childbirh than those who had their first child in the 1980s, reflecting the extension of German maternity leave period to three years. (Kenjoh, 2003). New rules since 2001 may again increase participation of new mothers.

EL <Fertility & Employment> Greek women either stick to a job or leave work permanently. Women with stronger labour force attachment are less likely to make the transitions to have (more) children. Younger cohorts postpone childbearing in comparison to older cohorts. (Symeonidou and Mitsopoulpos, 2003).

ES <Fertility> Fixed-term contract rather than permanent contracts have grown on the Spanish labour market particularly for young people. Having a fixed-term rather than an indefinite labour contract delays entry into marriage for men, but not for women, whereas a fixed-term contract held by a woman makes her delay motherhood. (De la Rica and Iza, 2004).

IE <Fertility> The propensity of first births in 1994 in comparison to 1970 decreased mainly because female wages had increased and the proportion time women spent in the labour market had increased but also because couples waited longer after marriage. (O'Donoghue and O'Shea, 2004).

IT <Fertility> Italian women with higher education tend to combine work and family to a larger extent than less educated women. They also postpone motherhood more. (Bratti, 2004).

<Employment> The same proportion of new mothers are working when the child is 12 months old as when the child is 24 and 36 months old: about 40% of the new mothers are working. Women's education, pre-marital work experience, work in the public sector increase the probability for women to work after having children and also reduce the liklihood for making a career interruption during the first three years after first childbirth. (Bratti, Del Bono and Vuri, 2003).

<Employment> Increasing the upper family income level and the opening hours of public childcare have a positive effect on female labour supply, while decreasing the price of public childcare will only make families switch from private to public childcare. Having a healthy grandmother who lives nearby will increase labour supply of the new mother. (Del Boca, Locatelli and Vuri, 2003). The latter point is also found by Bratti (2004).

NL <Wages> Mothers who had chosen for demanding jobs actually earn more than women who are not mothers, other things equal, by 4.5%, whereas in non-

demanding jobs the wage differential is reversed. This suggests that mothers are not discriminated against on the Dutch labour market if we agree on the assumption that being in a demanding or non-demanding job is their own choice. (Wetzels and Zorlu, 2003 and Wetzels, 2003).

<Employment> Women's employment after first childbirth has increased significantly from the 1980s to the 1990s. Educational difference in employment rate for new mothers is very large (i.e. high educated women are much more likely than low educated women to be labour force participants) in this country compared to Sweden or Germany. (Kenjoh, 2003).

<Fertility & Consumption> Couples save more before having a child than after, which is in line with a consumption smoothing hypothesis but they do not reduce savings enough to offset the reduction in income due to women leaving employment. Couples with children consume less, not more than childless couples. (Kalwij, 2004).

SE <Fertility> Compared to British women, Swedish women are on average older at finishing education, older at entering a marriage or cohabitation, but once the couple is formed they are quicker to have their first child (Gustafsson and Worku, 2004).

<Fertility> Those who are born in January, because they are older at finishing school than those born in December, are also 4.9 months older when they have their first child. This effect remains although the latter event takes place 10 to 12 years later than completion of compulsory school. In conclusion, age at finishing school rather than calender age is important for timing of maternity. (Skirbekk, Kohler and Prskawetz, 2004).

<Employment> Proportion of women who are at work 60 months after the first childbirh is more than 70%, which is the highest among the 5 countries under study (Britain, West Germany, the Netherlands, Sweden and Japan) both in the 1980s and the 1990s. Women's behavior in paid work during the 60 months after first childbirth does not significantly differ across women in different educational groups, other things being equal (Kenjoh, 2003).

UK <Fertility> Compared to Swedish women, British women are on average younger at finishing education, younger at entering a marriage or cohabitation. Once the couple is formed, however, British women are slower to have their first child. (Gustafsson and Worku, 2004).

<Employment> Women who gave birth to their first child in the 1990s (re-)enter in paid work much quicker than those who gave birth in the 1980s. Similar to the Netherlands, after first childbirth high educated women work significantly more, particularly in full-time employment, than low educated mothers. (Kenjoh, 2003).

Chapter IV: Conclusion

Jérôme de Henau, Danièle Meulders, Síle O'Dorchai

4.1. Introduction

The three main topics of research that were studied in the framework of the MOCHO project have been extensively presented and discussed in the three chapters of this final report alongside with the main results of all the work packages.

Chapter one presented the compared situation of mothers and women without children on Europe's labour markets. Special attention was given not only to the effects on women's participation when children enter the picture but also to potential wage penalties that derive from parenthood. Finally, the chapter included some rich information and results on the gender differentiated time allocation of women and men with respect not only to general household chores but also to childcare tasks.

The results of a profound cross-country analysis of three types of social policies were summarised in the second chapter. More precisely, it presents the country classifications that result from the comparison of public childcare systems, child cash and tax benefits and maternity leaves. Although no typology of parental leave schemes was constructed given the difficulty involved in evaluating their features correctly, the chapter does present an in-depth analysis of the different features and organisational charts of parental leaves throughout the former EU-15.

Finally, chapter three sketches recent fertility trends and summarises micro-econometric analyses on motherhood choices in a subset of European countries. More specifically, it examines the effect of different factors on fertility decisions such as education, prior labour force status, childcare availability, etc. Moreover, women's labour participation after childbirth is compared and analysed in the countries studied.

The aim of this final chapter is to establish links between the three previous chapters. How is women's labour market attachment interacting with their fertility choices and how do public policies intervene? It is important to point to the opposite role of two types of effects: a substitution effect and an income effect. According to the substitution effect, we would assume that women's increased labour market participation negatively affects their fertility choices. Indeed, an increased involvement in paid work leaves less time available for child-rearing and therefore encourages women to postpone or completely refrain from having children. Moreover, labour market participation provides women with their own wage so that the opportunity cost of spending time out of the labour market to raise children becomes more important. On the contrary, according to the income effect, increased labour market participation should exert positive pressure on fertility rates. Indeed, paid work is a source of income and as income rises it becomes easier to raise children. Therefore, an increase in income makes children more affordable and is expected to pull up fertility rates. The income effect is generally found to determine men's, and more particularly fathers', choices whereas for women, it is much less clear to what extent both effects interact in their employment and fertility decisions. These two effects play in opposite directions and their relative strength will determine how women's labour market situation and their fertility choices interact in each of the countries of the former EU-15. In other words, there is no unique link between women's labour participation and fertility patterns.

Before we try to evaluate the role of the substitution and income effects and establish the set of relationships that inter-tie the three main study domains of the MOCHO project (see section 4), it is important to summarise results by theme and by country. The next section will therefore be dedicated to the presentation of country-specific overviews of our results. In

section 3, an outline and discussion is presented of the different types of employment costs induced by motherhood. Following the general description of adjustment mechanisms regarding fertility and labour market activity in relation to public policies in section 4, we continue in section five with a country-specific sketch of the adjustment processes taking place. In section 5, a new country classification is proposed based on the analysis of the generosity of public policies towards dual-earner families with children throughout the former EU-15. Finally, section 7 concludes.

4.2. Country-specific overviews

	Labour market conditions	Social policies	Fertility
Belgium	Belgium has a medium employment rate for women aged 25-54y (68%) and a quite high part time rate 40%) in 2003, but the motherhood penalty is not that strong compared to other countries with an adjustment based on part time rise. Occupational gender segregation is small and does not rise much for parents	The upper medium ranking on the child care indicator is explained by a fairly high coverage rate for 0-3 around 30% but with low public spending for 3-6 illustrated by a low staff:child ratio. Maternity leave is not that generous (short and paid 77%) although generous paternity leave (10 days paid 87%). Cash and tax benefits are very generous. Parental leave is short individual and flat rate (27% AFE)	Fertility behaviour has remained stable for 20 years with medium Total Fertility Rate (TFR) and Completed Fertility Rate (CFR) (respectively 1.61 in 2003 and 1.79 for females born in 1964). Age at first birth has risen like in other countries but one of the lowest in EU-15.
Denmark	The female employment rate for those aged 25-54 is one of the highest in the EU-15 (79%) while part time rate is medium (27%). Occupational segregation has fallen through recent years although still high. There is a positive effect of being a mother in terms of both participation and full time job (in 2000).	Denmark performs very well on both child care indicators with highest scores on almost all criteria. Its maternity leave system is less generous with replacement rate around 60% but with 10 days paid paternity leave (51% of AME). Cash benefits are not the most generous and there is no child-related tax relief. Its parental leave system is family-based with one year available paid also at full unemployment benefit, quite flexible but very gender-biased.	Fertility (TFR) has recovered from below 1.5 in the mid-1980s, pushing DK to high levels of TFR (1.76) and CFR (1.93)
Germany	Germany has a high female employment rate (72%) mainly due to a high part time rate (43% with 12% less than 15h a week). German labour market is not suitable for mothers since the employment penalty is very strong (-0.44) (male breadwinner model), with a loss in participation but mostly with a rise in part time work for mothers. Segregation – not that high in general - rises by 12% for parents. Moreover, West German women who gave birth to the first child in the 1980s worked less after childbirth than those who had their first child in the 1980s (Kenjoh, 2003)	Germany is characterized by a very poor system of child care for both 0-3 and 3-6, mainly due to part time opening hours and fees for 3-6 and low coverage for 0-3. Is also has a short maternity leave followed by a long family-based and flat-rate paid parental leave, taken almost only by mothers (period extended since the 1980s, explaining lower participation). GE is quite generous for cash benefits and grants tax relief only for wealthier families (regressive)	GE has very low TFR (1.34) and CFR(1.56). In the former GDR, educational participation and parenthood was more compatible than in the West and there was little variation in the timing of fertility by educational attainment. However, compared to the situation before unification, parenthood and educational participation is less compatible in present day East Germany. The variation in the timing of first birth by woman's education attainment has substantially increased after unification in East Germany. (Kreyenfeld, 2004).
Greece	Its low female employment rate (57%) and part time frequency (7%) are combined with high youth unemployment rate but low segregation. The motherhood penalty on employment is very small	Greece is characterized by very low scores on all criteria of child care, particularly for 3-6, on all criteria of birth leave (no paternity leave and maternity leave paid 50%) and grants cash benefits related to husband's wage in the	TFR is very low (1.27) and CFR medium (1.76), this since the 1990s. Econometric evidence have shown that Greek women either stick to a job or leave work permanently. Women with stronger labour

	although segregation increases by 11% : women with children have to work as it is the case in Portugal and can only find a full time job (cfr third column)	presence of children. Parental leave is short, unpaid and individual.	force attachment are less likely to make the transitions to have (more) children. Younger cohorts postpone childbearing in comparison to older cohorts. (Symeonidou and Mitsopoulpos, 2003).
Spain	Spanish labour market has the same characteristics for women as Greek one, although gender segregation is one of the highest and motherhood penalty is somewhat higher (both part time and participation). Moreover, fixed-term contract rather than permanent contracts have grown on the Spanish labour market particularly for young people (De la Rica and Iza, 2004)	Spanish child care system is almost inexistent for 0-3 and although more extended for 3-6, provides only part-time coverage. However, its maternity leave is very generous (100%) but only 2 (full paid) paternity days. Cash benefits are granted only to very low income families but tax relief are more wide spread although very regressive system.	Fertility indicators show some difference with Greece, with low TFR (1.29) but also low CFR (1.64) and very high age at first birth (29.1 in 2000). Spanish people leave parents' household quite late, due to high youth unemployment rate, longer education, etc. Moreover, a fixed-term contract held by a woman makes her delay motherhood. (De la Rica and Iza, 2004).
France	Female participation is quite high (72%) with a medium part time expansion (29%) mainly designed for fighting unemployment, gender segregation is small and motherhood penalty is limited (medium), with mainly part time rise, but also increase in gender segregation (12%). Employment policies have been more designed to fight against unemployment than to help mothers work (parental leave policy).	France performs quite high on child care scores (fairly high coverage of 0-3, long opening hours, extended and generous system of public free preschool) alongside with FI. Its maternity leave is very generous but requires longest qualification period while it offers 14 full paid paternity days. Parental leave is family-based and 3 years long, low flat rate paid. There is little cash support (not for 1st child) but very generous tax benefits although very regressive tax system.	France has with Ireland the highest TFR (1.89 in 2003) and CFR (2.04) close to the reproduction threshold, recovering from lower (but still high) TFR in mid-1990s. Age at first birth is nevertheless quite high (28.7).
Ireland	Irish female employment rate is no longer one of the lowest (65% of 25-54y), close to LU and BE, thanks to a medium part time frequency (29%, 10% less than 15h), but resulting to a high level of segregation. Motherhood penalty is however the highest (with UK), equally due to participation and working hours	Public child care in Ireland is almost inexistent for 0-3 and preschools starts only at five years. Maternity leave are not that generous (paid 70%) and there is no paternity leave, while parental leave are unpaid (short and individual).	Fertility remains the highest in EU-15 but has dramatically decreased with TFR from 3.24 in 2003 to 1.98 in 2003 while the CFR is 2.23 for those born in 1964. However, first-time mothers were always relatively old. The propensity of first births in 1994 in comparison to 1970 decreased mainly because female wages had increased and the proportion time women spent in the labour market had increased but also because couples waited longer after marriage. (O'Donoghue and O'Shea, 2004).
Italy	Like Spain, female employment rate is low (55%, the lowest) part time is rare (18%), youth unemployment rate is high and motherhood penalty is medium, mainly due to increase in part time work but segregation remains very low.	Italy is characterized by a well developed public preschool, although child care for infants is almost inexistent. Maternity leave re long and quite well paid (80%) followed by a complex parental leave system (paid 30% for 6 months but lasting 10 months, family-based).	TFR and CFR are both low (1.29 and 1.52), and have decreased since the early 1980s. Moreover, Italian women with higher education tend to combine work and family to a larger extent than less educated women. They also postpone

	The same proportion of new mothers are working when the child is 12 months old as when the child is 24 and 36 months old: about 40% of the new mothers are working. Women's education, pre-marital work experience, work in the public sector increase the probability for women to work after having children and also reduce the liklihood for making a career interruption during the first three years after first childbirth. (Bratti, Del Bono and Vuri, 2003). Increasing the upper family income level and the opening hours of public childcare have a positive effect on female labour supply, while decreasing the price of public childcare will only make families switch from private to public childcare. Having a healthy grandmother who lives nearby will increase labour supply of the new mother. (Del Boca, Locatelli and Vuri, 2003). The latter point is also found by Bratti (2004).	There is no paternity leave. Cash benefits are means-tested and very few while tax credits (wastable) are much more generous	motherhood more. (Bratti, 2004).
Luxembourg	Female employment rate is medium (65%), as is part time frequency (32%) but motherhood penalty is one of the highest, in terms of participation, part time but also gender segregation with a 21% increase for parents. Labour market is then not suitable with motherhood.	Luxembourg scores medium on both child care indices, although coverage rate for infants is very low. Maternity leave is fully paid but requires 6 month of previous work and there is no paternity leave while parental leave are individual and quite well paid (flat rate of 62.5 % of AFE, 52% of AME) but quite inflexible (whole to be taken). Cash (mainly) and tax benefits are among the most generous for families with children.	Financial support for families in the absence of facilities helping mothers work can explain why Luxembourg has maintained medium TFR (1.63) and CFR (1.81), recovering from the early 1980s (TFR of 1.38 in 1985. Moreover age at first birth is the highest (29.3 in 2000).
Netherlands	The high female employment rate (74%) is explained by an extremely wide-spread use of part time work (73% with 16% less than 15h), especially by mothers (see parental leave) and the employment penalty is then huge almost only due to decrease of working hours. Women's employment after first childbirth has increased significantly from the 1980s to the 1990s. Educational difference in employment rate for new mothers is very large (i.e. high educated women are much more likely than low	NL has low scores on both child care indicators (almost no coverage before 4 years) while its birth leaves is the same as in LU but with no qualification period. However, very limited parental leave is offered, individually, on a part-time basis and unpaid. Cash benefits are being decreased and there is no emphasis on tax relief.	High TFR (1.79) may be explained partly by the wide spread use of part time work, although CFR is medium (1.79). Age at first birth is in the upper part of the ranking. Couples save more before having a child than after, which is in line with a consumption smoothing hypothesis but they do not reduce savings enough to offset the reduction in income due to women leaving employment. Couples with children consume less, not more than childless couples.

	educated women to be labour force participants) in this country compared to Sweden or Germany. (Kenjoh, 2003). As far as wages are concerned, mothers who had chosen for demanding jobs actually earn more than women who are not mothers, other things equal, by 4.5%, whereas in non-demanding jobs the wage differential is reversed. This suggests that mothers are not discriminated against on the Dutch labour market if we agree on the assumption that being in a demanding or non-demanding job is their own choice. (Wetzels and Zorlu, 2003 and Wetzels, 2003).		(Kalwij, 2004)
Austria	Austria looks like Germany in terms of female employment patterns, high head count rate (77%) with wide spread use of part time (38%), but with a higher gender segregation. The motherhood penalty is however much smaller, closer to Italy, but almost only due to working hours adjustment.	Austria stands in the lower medium part of the ranking for both child care indicators and provides a very generous maternity leave (no qualification period) although no paternity days, but its parental leave system is very gender biased, long and flat rate paid (25% of AFE). The emphasis is more on very generous cash benefits, while there is no child related tax relief.	Since the employment model is that mothers should be at home to take care of the children, and since employment rate is very high, a low TFR (1.34) is not surprising, as well as a low CFR (1.56), although age at first birth is relatively low (26.3)
Portugal	Female employment rate is very high (74%) and based on full time work (88%), although gender occupational and inter-industry segregation is one of the highest. However motherhood gap is positive due to an increase in participation (although more segregated), illustrating an income effect in absence of cash generosity (2nd column)	Portugal is characterized by a very poor system of child care especially for 3-6 due to short opening hours of public facilities. However, it offers 5 full paid days of leave for the father (and first 15 working days of parental leave) while maternity leave is also very generous. Parental leave is unpaid for mothers. Portugal does not grant important cash benefits neither tax relief compared to other countries.	TFR and CFR look like other Southern European countries although somewhat higher (1.44 and 1.82 respectively), with the possibility of investing in the children for future intergenerational assistance.
Finland	Female employment rate is very high (79%) and also based on full time work (88%), much more than DK or SE, leading to highest scores on the gender segregation indices. In 2000 motherhood penalty was very limited.	Finland provides the choice between a place in child care facilities up to school age and parental leave. Child care coverage is relatively high for 0-3 but the lowest for 3-6, although other criteria are very performing. Parental leave are very long and family-based with low replacement rate at the end. Maternity leave and the first period of the parental leave are paid 66% on average (means-tested) while there is a so-called "father's month" of fully paid leave. Finland is generous for larger families (cash benefits) and does not grant child related tax relief.	TFR is high (1.76) as well as CFR (1.92) while age at first birth is relatively young

Sweden	Sweden is characterised by a high female employment rate (78% for 20-54 year olds). Full-time employment is not only the norm for men but concerns also 70% of women. Moreover, part-time working women frequently work hours long enough to be classified as full-timers. More importantly, the employment effect of motherhood is negative but the penalty is very small. Finally, gender occupational segregation has decreased in recent years but remains high. Proportion of women who are at work 60 months after the first childbirh is more than 70%, which is the highest among the 5 countries under study (Britain, West Germany, the Netherlands, Sweden and Japan) both in the 1980s and the 1990s. Women's behaviour in paid work during the 60 months after first childbirth does not significantly differ across women in different educational groups, other things being equal (Kenjoh, 2003)	The emphasis is on the provision of services rather than on granting financial support to families. As a result, public childcare services are very well developed, especially for 3-6). However, this relatively better score for 3-6 is artificial. Indeed, the system guarantees a place in childcare for each child from 1-6. However, given that birth leave is commonly taken during the first year following childbirth, obviously coverage rates for 0-3 year olds drop compared to those for 3-6 year olds. Public childcare arrangements are accessible to a very large population, affordable and tuned in with full-time employment. On the contrary, Sweden has a very weak system of family support in cash or through the tax system compared to the other former EU-15 countries. It has a unique system of birth leaves. There is no clear distinction between maternity and parental leave but instead both form part of an integrated system of leave that covers most of the first year of life of a child. The length of the leave has been shown to have a negative impact on women's subsequent wages (cfr. Albrecht et alii, 1999). The fact that it is granted as a family right instead of as an individual right entails a substantial risk with respect to gender equality. Therefore, policy measures should focus on increasing fathers' take-up (after their 10 paid paternity days).	Fertility indicators show no evidence of a trade-off taking place. Compared to British women, Swedish women are on average older at finishing education, older at entering a marriage or cohabitation, but once the couple is formed they are quicker to have their first child (Gustafsson and Worku, 2004). Moreover, CFR is stable (2.00) close to the replacement rate.
UK	Female employment rate is also very high (74%) but with a much more wide spread use of part time (41%) as in Nordic countries or Portugal, closer to Dutch and Austrian patterns. This part time work is mainly taken by mothers since the employment penalty is very high, both in terms of participation and working hours. Moreover, as in Luxembourg, compared to workers without children, parents are much more segregated in occupations (25% rise). In this country the cost of having a child is very huge on all accounts. Women who gave birth to their first child in the 1990s (re-)enter in paid work much quicker than	UK is characterised by a very poor public child care system and only 60% of 3-6 attend a public facility. The maternity leave has a low replacement rate (less than 50%), there is no paternity leave. Parental leave is short, flexible, unpaid and individual. The emphasis is put on poor working families with very generous tax relief also for child care expenses) but with few cash benefits.	Despite labour market conditions unsuitable for mothers, TFR and CFR remains fairly medium, although have decreased. Compared to Swedish women, British women are on average younger at finishing education, younger at entering a marriage or cohabitation. Once the couple is formed, however, British women are slower to have their first child. (Gustafsson and Worku, 2004).

	those who gave birth in the 1980s. Similar to the Netherlands, after first childbirth high educated women work significantly more, particularly in full-time employment, than low educated mothers. (Kenjoh, 2003).		

4.3. Employment costs of having children, building a motherhood gap.

In this section, we assess the employment cost of motherhood from four angles: the employment-to-population ratio, the part-time frequency, indices measuring gender dissimilarity in occupations and wage differentials.

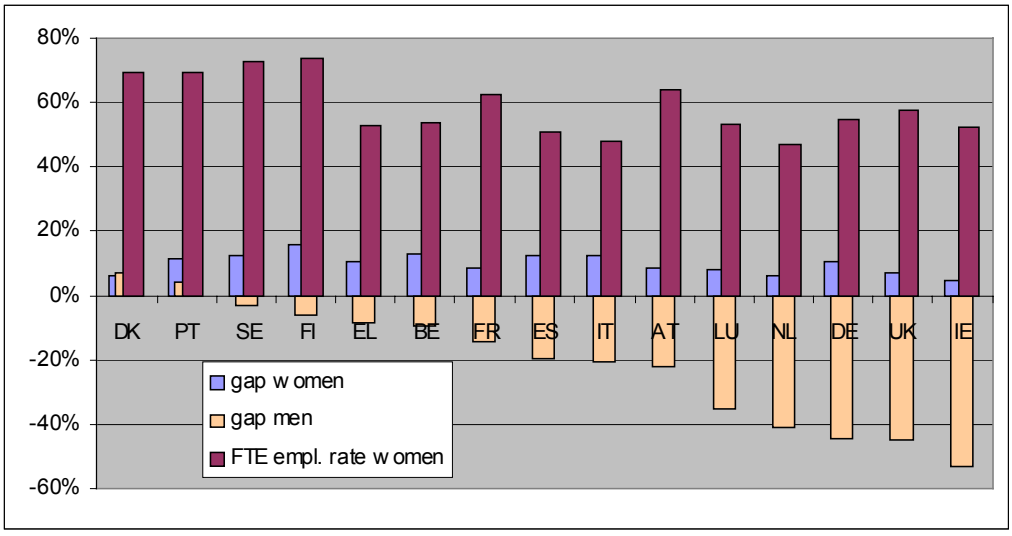
We have measured employment penalties using 2003 Labour Force Survey data, except for the Nordic countries and Ireland. Data concerning motherhood for the latter four countries are taken from the OECD's Employment Outlook for 2002 (2000 data).

4.3.1. The gap in full-time employment

As far as the employment rate is concerned, firstly, recall that overall employment rates differ considerably across countries, as do full-time equivalent employment rates. Therefore, the penalty induced by the presence of children must be appreciated in terms of both headcount employment (participation gap) and working hours (part-time gap), or, in other words, a measure of the full-time employment gap.

Figure 4.1 shows the standardised employment penalty measured in full-time equivalent. It is defined as the difference between the FTE employment rate of mothers (fathers) and that of women (men) with no child under 15 years of age, expressed in percentage of the overall FTE employment rate of women (men) aged between 25 and 54 years. The figure shows that fathers are more likely to work (and on a full-time basis) than their childless counterparts – especially in Finland, Belgium, Italy and Spain. However, the gain in fathers' employment rate is not sufficient to compensate the more important loss in mothers' employment. The employment penalty is related to the full-time equivalent employment rate of women (r=0.64, significant at 0.01 level).

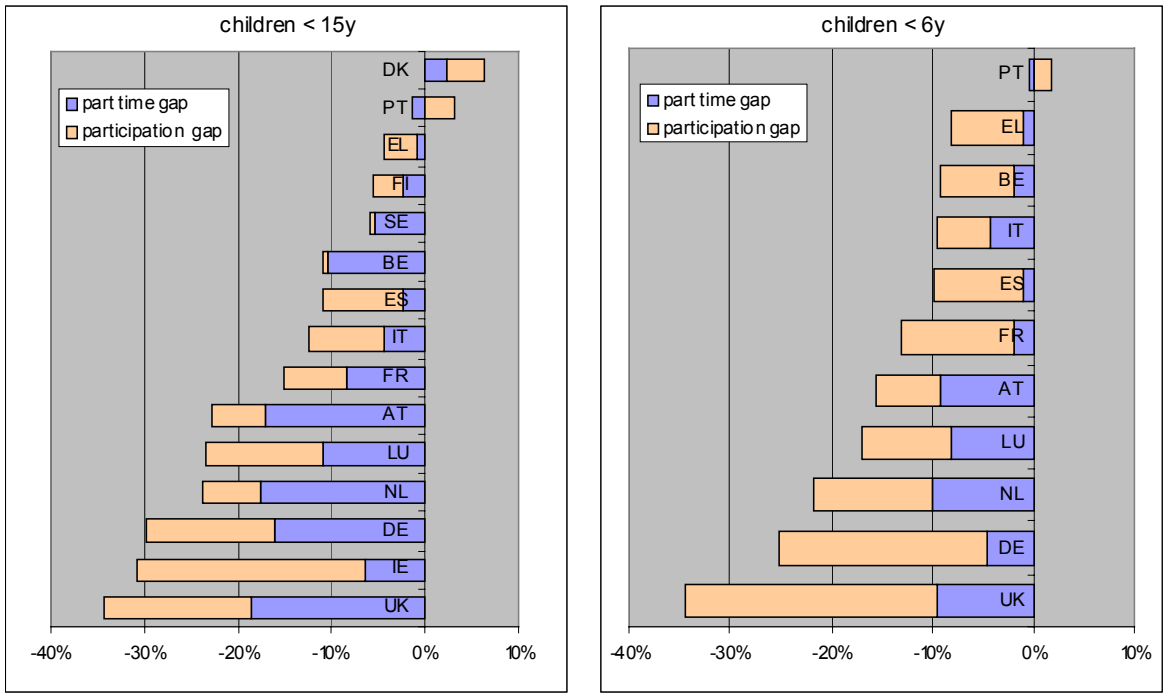
Figure 4.1. Standardised parenthood gap in full-time equivalent employment rates (25-54y) in 2003



Note: The standardised gap is defined as the difference between the FTE employment rate of mothers (fathers) and that of women (men) with no child under 15 years of age, expressed in percentage of the overall FTE employment rate of women (men) aged between 25 and 54 years.
Source: own calculations based on LFS 2003, and OECD 2002 for DK, SE, FI and IE (figures 2000).

As a result, we found it interesting to decompose the motherhood gap in two parts. Indeed, to measure the loss in full-time participation of women with children, the employment gap should be broken down in a part that is due to a loss in participation on the one hand and a share that is accounted for by a reduction in working hours (measured as the proportion of the labour force that does not report to work full-time) on the other hand. The participation and working hours effects of motherhood are presented in figures 4.2 for women aged 25-54 in all EU-15 countries and for women aged 20-49 with a child under 6 years of age in all countries, except Ireland and the Scandinavia countries.

Figure 4.2. Absolute full-time employment gap of motherhood, with the contribution of participation and part time, by age of children (2003)



Note: Decomposition of the first difference in full-time employment rate between mothers (child<15) and non mothers, aged 25-54y on the on hand, and between mothers (child<6)and non mothers (or mothers of older children), aged 20-49y
Source: own calculations based on LFS 2003, and OECD 2002 for DK, SE, FI and IE.

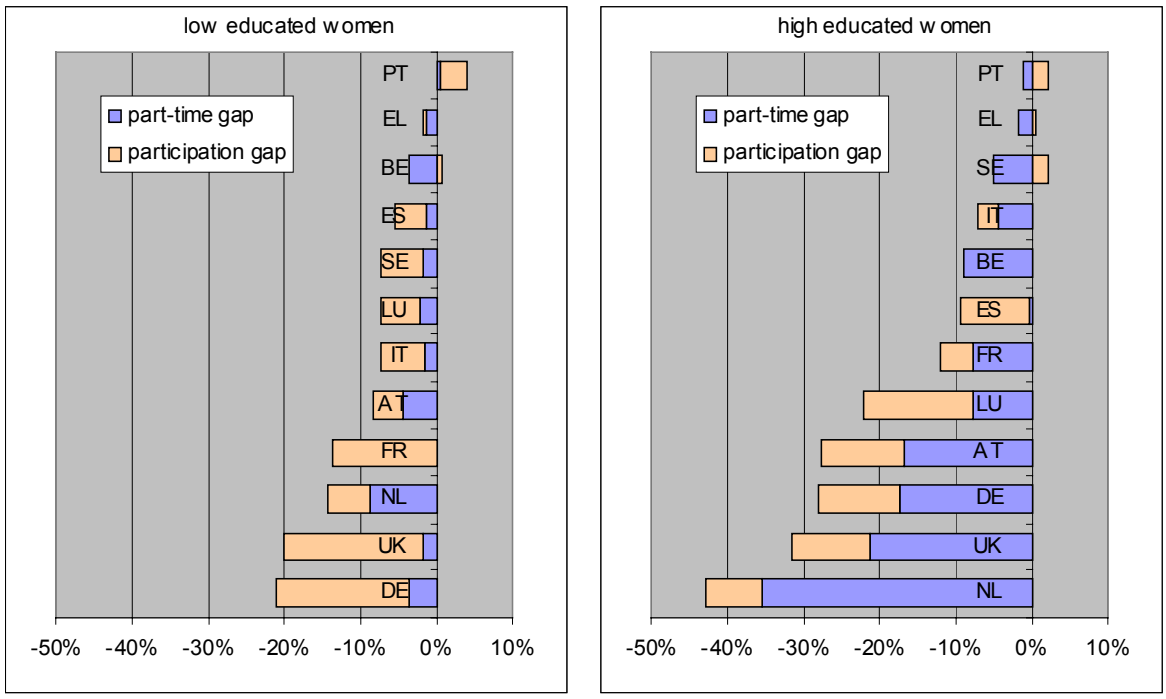
The first figure shows full-time employment penalties of different sizes for mothers aged between 25 and 54. The Danish and the Portuguese labour market seem to favour mothers' full-time employment, mostly via an increase in the participation rate. In the other Southern European countries and in Ireland and Finland, the penalty mainly takes the form of a loss in participation, while in countries such as Belgium, Sweden and to a lesser extent, Austria and the Netherlands, women seem to reduce their working hours more often than that they completely withdraw from the labour market.
Moreover, Germany, Ireland and the UK illustrate cases in which the labour market is not at all adjusted to motherhood as indicated by the difference between the full-time employment rate of mothers and that of non mothers which amounts to more than 30 percentage points. In the UK, 57% of women without children and aged between 25 and 54 years of age work in full-time jobs while for mothers of the same age with children under 15 years, the full-time employment rate is only 23%.

The employment penalty associated with the presence of a child aged under 6 years for younger women is illustrated in the second figure. It opposes mothers of young children (1 or more aged less than six) to mothers of older children of childless women. This helps us target a more precise effect of motherhood a few years after birth, more related to the time during which women have to find solutions for the care of their children. Unfortunately, we do not have data for Scandinavian countries nor Ireland. This second figure shows that, except for the UK, Portugal and Greece, the full-time employment penalty is smaller for mothers of very young children than for others. The major part of the reduction in the full-time employment rate is due to mothers' withdrawal from the labour market, except in Austria where the part-time adjustment prevails (at least for first child). Moreover, the participation rate regularly decreases with the number of children, except in France. In this latter country, there is no loss in full-time employment for mothers of one child, the loss in participation occurs with the second child. This can be explained by the fact that parental leave was only available from the second child on (until 2004). In Italy, the Netherlands and Luxembourg, there is a greater balance between adjustments in terms of working hours and of participation. Note that in all countries, the participation penalty is greater in this case than in the first figure, except for Italy and Luxembourg. This may be due to other factors than the sole age of the youngest child, that have not been controlled for, such as education, the number of children, etc. Indeed, note that the penalty in terms of participation is strengthened or weakened by prevailing cultural values as well as by the economic characteristics of women and their husbands. A widely studied hypothesis is that better-off economic characteristics of the wife tend to increase their participation whereas those of the husband work in the opposite sense (decreasing the opportunity cost of having children). For example, in Spain, mothers' employment is marked by a strong degree of polarisation: only very educated women are able to minimise the employment penalty induced by motherhood and they are much more likely to return to work after childcare-related career interruptions (González-López, 2001). In France, Meron and Widmer (2002) have shown that a young woman living with a partner with no children and who finds herself faced with a period of unemployment will temporarily abandon any potential plans of having a child. The period during which a partnership remains childless has been shown to be longer in case the woman has experienced periods of "intermittent employment" and having known spells of unemployment before significantly postpones the arrival of the first child. This effect is most pronounced amongst the least qualified and the youngest generations. On the contrary, women having experienced periods of inactivity remained a shorter time in a partnership without a child. In sum, in terms of fertility unemployed women should not be considered in the same way as housewives (Meron and Widmer, 2002). In Flanders, mothers' labour participation is influenced by their husband's unemployment record but not by his level of education which only seems to have an impact on the wife's rate of transition between full-time and part-time employment (Corijn, 2001). In the Netherlands, the higher the husband's earnings potential, the less likely the wife is to re-enter the labour market once she has children, which parallels the results for Germany but contradicts, for example, the Swedish case (Hendrickx et alii, 2001; Blossfeld et alii, 2001; Henz and Sundström, 2001). On the contrary, his level of education nor his religion was not found to have a significant influence on Dutch wives' labour market choices. Furthermore, time-related factors such as the family cycle and the period play an important role. In Italy, for example, the process of exit from the labour market has two critical phases: women tend to become housewives more often immediately before and in anticipation of marriage and also around childbirth (Bernardi, 2001).

4.3.2. The gap in full-time employment according to level of education

It is well-known that low-educated women are relatively less present in the labour force than high-educated women. It is interesting to examine differences in the behaviour of these groups in terms of participation and working hours when children enter the picture. Figure 4.3 contributes to the analysis of the impact of the presence of children aged less than 15 years of age on women's employment rates and working hours (for those aged 25-54). This figure is identical to the first graph in figure 4.2. except for the fact that gaps have been split between low- and high-educated women. It shows that more educated mothers more frequently adapt their labour market situation towards a larger use of part-time work than lower-educated women do. Moreover, part-time employment is a solution more often chosen than a complete withdrawal from the labour force (except in Spain and Luxembourg). Indeed, the total loss in full-time employment is less pronounced among low-educated mothers (note that overall employment rates of low-educated women are much lower than those of women with a higher level of education), they more often withdraw totally from the labour market than that they adjust their working time, except in Belgium and the Netherlands. This finding holds particularly true for the UK, France and Germany.

Figure 4.3. Absolute full-time employment gap of motherhood, with the contribution of participation and part time, by level of education (2000)



Note: Decomposition of the first difference in full-time employment rate between mothers (child<15) and non mothers, aged 25-54y, respectively low and high educated.
Source: OECD (2002) and own calculations.

4.3.3. The gap in occupational and inter-industry segregation

Gender segregation in occupations has been widely discussed in numerous studies (Emerek et alii 2002, Sissoko 2004, etc.). "One standpoint is that gender segregation reveals real gender differences, as it indicates discrimination towards women in the male-dominated labour market. As the same time, segregation is argued to be one of the causes of wage differences

and the theory is that equal wages will be an illusion as long as barriers into the different labour markets divide women and men and assign them to female and male work tasks. The mechanisms through which the separation of genders is upheld and reshaped also contribute to form gender differences and discrimination in relation to working conditions." (Emerek et alii 2002, p.35).
We are interested in analysing the effect of motherhood on the degree of segregation between men and women: is segregation higher among parents than among non-parents? Using 2003 LFS data, we have gathered information that has allowed us to compute different segregation indices for ten of the EU-15 countries. For DK, SE, FI and IE, no data on the presence of children is available so that the analysis was limited to segregation between all men and all women. For the NL, a total lack of data broken down by sector or occupation (not even 1-digit ISCO occupations or 1-digit NACE industries) has made an analysis of segregation simply impossible.

Different Duncan dissimilarity indices (ID) were computed for different types of workers at different ages. They measure on a scale from 0 to 100 to what extent men and women are evenly distributed among the occupations (industries). A zero indicates that each occupation (industry) has the same "weight" in both male and female distributions, while 100 means that women and men do not share any of the occupations (industries). This index can be interpreted as the proportion of men or women that have to be removed from their actual occupation (industry) in order to better equalise the distribution of workers. We have also computed indices to measure segregation between part-time and full-time female workers, as well as between mothers and non-mothers or confronting fathers to non-fathers.

a) gender segregation

Since our aim is to assess the penalty in terms of job prospects and career opportunities, we have first focused on occupational segregation (analysing occupations at the 3 digit-level). Occupational segregation is also responsible for some part of the gender wage gap, up to 30% in Spain for private sector (Sissoko, 2004). Similarly to other labour market indicators, we have analysed segregation within the population of workers aged between 25 and 54 years of age (Table 4.1).
In the 1st column, Italy and Greece show a very low level of gender segregation while Portugal and Finland present the worst scores on the general index for the 25-54 age bracket. Sweden and Denmark were but are no longer among the countries with the highest segregation index (see Emerek et al. 2002). In the previous section, Portugal, Finland and Austria came out as countries with a low penalty for women (in terms of both the use of part-time and the overall employment rate) but there seems to be a greater penalty in terms of job segregation. Indeed, we have computed the linear correlation coefficient between female participation and gender segregation. It has turned out strongly positive (r=0.68). Spain does not conform to this positive relationship: the female employment rate is low while the segregation index is tremendously high, contrary to Greece and Italy. A possible explanation might be that over the last 15 years the employment rate has grown much more steeply in Spain than in Italy or Greece and that a rise in segregation has been the result of the labour market's attempts to absorb this rapidly increasing number of entrants, similarly to what occurred in the Scandinavian countries a few decades earlier. The same pattern applies to Ireland although growth in female employment has been far more steady in this country (see table 4.3 infra).
When children enter the picture (2nd, 3rd and 4th columns), although we have information for ten countries only, the penalty of being a mother comes out differently. The 2nd column presents the ID of men and women without any children under 15, the 3rd shows the ID of parents while the 4th column is the relative change in the Id between 2nd and 3rd columns. Austria and Portugal remain at the bottom of the ranking. Note, however, that the effect of

motherhood (measured as the relative increase in the ID, shown in 4th column) is stronger in Portugal than in Austria. For parents, Portugal obtains a score of merely 62 on the index scale (3rd column). In the high part of the ranking, Italy and Greece hold on to their top positions although in Greece the relative situation of parents is worse than in Italy. But the most interesting results are found for Luxembourg and the UK. In those countries, gender segregation is not that high in general, and even very close to the positions of Italy and Greece in the case of non-parents (2nd column). But once children are considered, these two countries fall to the bottom of the ranking to join Portugal, with relative increases in the index of more than 20%. Recall that this occupational hindrance for mothers exists alongside the employment penalties measured in terms of participation and working hours. In the Netherlands and Ireland we do not have data to confirm this effect although some computations from the OECD (2002) tell us that for Ireland, 2-digit ISCO gender ID is 20% higher for parents than for non parents (16% in the Netherlands) while in the UK and Luxembourg, these figures amount for 23% and 19% respectively.

We have also computed indices for inter-industry segregation, with the same restrictions concerning data available for NL, IE, FI, DK and SE. Industrial segregation can also be seen as responsible for a part of the gender wage gap ranging from 0 in Denmark to 29% in Ireland in 1995 in the private sector (Gannon et al. 2004). We dealt with less disaggregated data than for occupations (around 55 industries compared to around 105 occupations).
Roughly same rankings are obtained in this case also as far as general ID are concerned as well as index of segregation between full time and part time female workers. However, results differ for the analysis of parents versus non parents: the ID of parents (compared to non parents) is raised by about 15% in Germany, Austria and Greece and up to 23% in the UK.

b) Segregation between part time and full time female workers

Finally, we found interesting to show indices for working women according to their working hours: segregation of full time versus part time female workers (5th column). Results show that in countries where part time is not very widespread, occupational segregation seems to be higher ($r=-0.58$) as it is the case for Finland, Denmark, Greece, Spain and especially Portugal. However, Italy remains as an exception with low part time rate and lowest index of dissimilarity.

c) Segregation between mothers (fathers) and childless women (men)

The segregation indices that were computed comparing mothers (fathers) and childless women (men) turned out very close to zero, indicating a balanced distribution over occupations (last two columns of table 4.1). Luxembourg again shows higher levels of segregation among mothers (and fathers) compared to the other countries (around twice as high for women's index).

In sum, the motherhood cost for working women is strengthened in the UK and Luxembourg because of the additional penalty in terms of segregation. Note that in Germany – a country with very high penalty for working mothers in the form of increased part-time work and a drop in participation – the occupational effect for mothers is not as strong as in the latter two countries although the penalty in terms of industrial segregation appears to be harsher.

Table 4.1. Occupational segregation (3-digit ISCO) according to different types of workers (2003)

	Gender ID							Working hours ID		Parenthood ID			
	all at work 25-54		all at work 25-54 (no child)		all at work 25-54 (1child+)		diff. rel. 1child + / no child	women at work 25-54		women at work 25-54		men at work 25-54	
	ID	rank	ID	rank	ID	rank		ID	rank	ID	rank	ID	rank
IT	47.7	1	46.6	2	49.6	1	6%	22.0	1	7.3	1	8.4	2
EL	47.9	2	46.5	1	51.6	2	11%	**35.7**	13	11.4	6	11.9	6
FR	52.9	3	50.4	5	56.5	3	12%	29.8	6	8.1	2	9.5	3
LU	53.3	4	49.4	4	59.7	8	**21%**	29.6	5	**19.7**	10	**16.8**	10
UK	53.7	5	48.7	3	60.9	9	**25%**	30.9	8	11.8	7	12.4	8
BE	54.1	6	52.5	6	56.9	4	8%	29.6	4	12.4	8	12.0	7
DE	54.9	7	52.8	7	58.9	6	12%	24.6	3	9.0	3	7.9	1
SE	55.1	8	-	-	-	-	-	31.7	9	-		-	
DK	55.7	9	-	-	-	-	-	**34.8**	12	-		-	
ES	55.8	10	53.7	8	58.8	5	9%	**34.4**	10	10.1	4	11.2	5
IE	55.8	11	-	-	-	-	-	30.8	7	-		-	
AT	56.4	12	54.8	10	59.4	7	8%	22.0	2	10.7	5	10.9	4
PT	57.9	13	54.7	9	61.9	10	13%	**44.7**	14	13.3	9	14.6	9
FI	59.8	14	-	-	-	-	-	**34.6**	11	-		-	

Note: ID is the Duncan Index of Dissimilarity. It can range from 0 – no segregation, there is an equal proportion of men and of women in each occupation – to 100 – complete segregation, each profession is either fully female either fully male. Id is here measured between men and women (gender), between female working part time and full time (working hours), and between women (men) with and without children (parenthood).
Source: Eurostat LFS 2003.

4.3.4. The wage cost of motherhood

In their study of wage gaps between mothers and childless women aged 21 to 45 years in seven European countries, Del Boca et alii (2004) find no large differences across countries in gross hourly wages according to motherhood. The countries studied are Denmark, the UK, the Netherlands, Belgium, France, Italy and Spain. No "child gap" in pay is found, except for the UK, the only country where having a child has a significant and negative effect on women's wages.

In a previous study on wage gaps between mothers and childless women, OECD (2002) has found roughly the same findings. Using same data set but for 1998, they have studied wages of women aged 20 to 54 in 13 countries (all EU-15 but Luxembourg and Sweden). Relative gross hourly wage gap in favour of childless women is found only in the UK and Austria, and the gap remains positive after controlling for observed characteristics. On the opposite, negative gross gaps amounting to more than 10% are found in the Netherlands, Ireland, Italy and especially Greece and Spain. These gaps remain in favour of mothers after controlling for observed characteristics only in the latter two countries.

The lack of evidence of an existing "child wage gap" in most countries does not prevent us from concluding that mothers are disadvantaged. In the OECD study, if mothers seem to be endowed of more rewarding personal characteristics, it can be explained by the fact that they are more often older, hence more experienced or better located in the hierarchy, in other terms, over-selected. Indeed, when the same analysis is made on smaller cohorts of women (ten year age brackets), the contribution to the gap of both observed and unobserved characteristics turn out positive in most countries, especially regarding occupation, allowing them to conclude that childless women work in better-paid occupations than mothers of the same age (see supra).

Hereinafter, the main findings of Del Boca et al. (2004) are summarised (see chapter I). Characteristics of the labour market and human capital have a different impact on mothers' than on childless women's wages and effects vary across countries. It is found that in all countries, the effects of education and job characteristics (such as having a permanent contract, a job with supervisory responsibilities or a job in the private sector) are much stronger for mothers than for childless women.
Furthermore, the effect of the type of employment contract is stronger in the Southern European countries than elsewhere. There is a strong wage effect for mothers who obtain a permanent employment contract. However, the proportion of mothers who are not in a permanent job is highest in Spain compared to the other seven countries. The wage effect associated with having supervisory duties in one's job is strongest for mothers in the United Kingdom and the Netherlands. The effect of a prior dismissal (be it initiated by the employer or simply a consequence of an employment contract that came to term) is detrimental for mothers' wages in France only.
An alternative specification of the model included a variable measuring the degree of satisfaction with the distance to work. A negative effect of the distance to work on mothers' wages was observed in Denmark, Belgium, France and Italy. So, it appears that women pay for being at an acceptable distance from work.

Summarising by country, it appears that in Denmark mothers' wages are positively affected by working in the private sector and having a supervisory post, those effects being much stronger than for childless women. In the UK, tertiary education and supervisory responsibility have a positive influence which is stronger than for childless women, while short part-time work affects mothers' wages less negatively than childless women's. In the Netherlands, experience, having a permanent contract and supervision responsibilities play a stronger positive role with respect to mothers' wages while tertiary education and having a job in the private sector affect their wages respectively less positively and less negatively than childless women's. We do not observe very different effects between childless women and mothers in Belgium, although tertiary education has a more marked impact for mothers' wages. In France, the difference in the effect of education is much greater than in Belgium, the same holds for the effects of having a permanent contract or a supervisory position (positive impacts) and of being married (negative impact). Italy and Spain are similar cases as far as education, having a permanent contract and supervision (stronger positive effect) and private sector employment (a negative but less strong effect) are concerned. If working part-time positively affects women's wages with or without children, the effect of short hours is stronger for childless women than for mothers in both countries, while longer hours play a stronger role for mothers only in Italy.

4.3.5. Cost in terms of job security and quality

The aim is to investigate whether type of job and of employment contract affects childless women differently than mothers. We have analysed differences with respect to the impact of work status (employee, self-employed and family worker), contract type (permanent job versus other types, such as temporary jobs or fixed-term contracts) and the presence of women in the public sector, generally a signal of better employment protection. Note that alongside these characteristics, part time employment is maybe the best signal of lack of employment quality since it prevents from job career prospects etc. (Jepsen et al. 2004). We have discussed the part time penalty in the previous sections.

a) Work status (employees versus self employed and family workers)

Work status does not differ considerably between childless women and mothers regardless of the child's age. The effect of the presence of children on the proportion of employees is generally close to zero but positive in Portugal and Luxembourg and negative in Spain, the UK and the Netherlands. If we only consider children under six years of age, the effect remains the same, except for Spain where it becomes positive and for Italy where the presence of children under 6 negatively affects the proportion of employees.

Since there are only very few family workers in the female work force, it is not of great interest to study the impact of children: in those countries where the impact is positive, the overall workforce contains less than 3% of family workers.

b) Type of contract (permanent job versus other types)

Permanent employment is a more interesting indicator to evaluate the motherhood cost for working women, especially for mothers who have to provide for their children. Indeed, we expect to find a positive correlation between the presence of children and the proportion of mothers with permanent contracts since mothers will only work if they can rely on a secure employment contract. However, it seems that the impact of the presence of children on the proportion of permanent contracts is very small, though slightly positive as expected (without controlling for any other characteristics). The effect is more strongly positive in Portugal and Spain for young children, both of which are countries with a lower proportion of permanent contracts among women.

c) Public versus private sector

As far as the proportion of women who are employed in public administration and education is concerned, we would also expect mothers to be more likely to work in those fields (used as a proxy for the public sector) than their childless counterparts. Indeed, the public sector often offers a higher degree of employment security thanks to stronger regulations, more powerful unions and a less heterogeneous work force. For example, for Italy, it has been shown that women employed in the public sector more frequently keep their jobs after childbirth and career breaks (Bernardi, 2001). However, the proportion of women who work in those two industries decreases with the presence of children in all ten countries but Italy, Spain (very positive) and Greece. This is particularly true for Luxembourg and Portugal. If we look at mothers of children under 6 years of age, the effect remains the same, except for Italy and Greece (balanced proportion). We should investigate in greater detail the reasons for this difference, especially for Spain, Portugal and Luxembourg.

4.4. Adjustment mechanisms

Starting out from the MOCHO hypothesis that women work, we want to examine the effect of labour market conditions and public policies on fertility decisions. In the specific country context, working women evaluate the cost associated with childrearing in terms of their career and wage perspectives. A spell out of the labour market when the child is young closes off some future labour market options (cfr. supra):

First of all, in a given country it might be very unlikely for young mothers to have the possibility to ever re-enter the labour market at all. The cost of a child is thus one in terms of participation.

Secondly, young mothers re-entering the labour market might be confined to part-time jobs or to more family-friendly industries. It is well-known that part-time employment typically involves a wage penalty and limits promotion opportunities (Jepsen et al. 2004).

Gender segregation because of young mothers' concentration in certain industries or

occupations that, although more family-friendly, pay lower wages and offer jobs of a lesser quality and security, remains to be a severe problem in numerous European countries.
To sum up, depending on the country considered, the cost of a child may take different forms: a drop in the participation rate, an increase in part-time employment, increased labour market segregation to the disadvantage of re-entering young mothers, a price in terms of employment quality and long-term wage effects of spells out of the labour market , as shown for example by Beblo and Wolf (2002) for Germany or Albrecht et al. (1999) for Sweden.

Table 4.2. Main indicators of the female labour market and cost of motherhood (2003)

	FTE f empl. rate	HC f empl. rate	all f wk PT	FTE moth. gap	HC moth. gap	PT moth. gap	isco3d sex ID	isco3d d% ID 1c+/0c	isco3d child ID	wage gap expl.	wage gap unexpl.
FI	74%	79%	12%	*-0.06*	*-3%*	*-3%*	**59.8**	-	-	3.2	0.4
SE	73%	82%	31%	*-0.04*	*0%*	*-7%*	55.1	-	-	-	-
PT	70%	74%	12%	0.04	3%	-1%	**57.9**	13%	13.3	3.7	0.0
DK	70%	79%	27%	*0.07*	*4%*	*4%*	55.7	-	-	3.4	-0.3
AT	64%	77%	**38%**	-0.22	-5%	**-25%**	**56.4**	8%	10.7	8.0	**5.9**
FR	63%	72%	29%	-0.15	-7%	-14%	52.9	12%	8.1	3.8	-1.0
UK	58%	74%	**41%**	**-0.45**	**-16%**	**-34%**	53.7	**25%**	11.8	3.4	**5.4**
DE	**54%**	72%	**43%**	**-0.44**	**-14%**	**-32%**	54.9	12%	9.0	2.4	1.8
BE	**54%**	68%	**40%**	-0.10	0%	-16%	54.1	8%	12.4	7.1	-1.6
LU	**53%**	65%	32%	**-0.35**	**-13%**	**-23%**	53.3	**21%**	**19.7**	-	-
EL	**53%**	**57%**	7%	-0.08	-3%	-2%	47.9	11%	11.4	-9.1	**-6.1**
IE	**52%**	65%	29%	***-0.53***	***-24%***	***-25%***	55.8	-	-	-6.1	-0.6
ES	**51%**	**56%**	16%	-0.19	-9%	-7%	55.8	9%	10.1	-12.2	**-6.0**
IT	**48%**	**55%**	18%	-0.21	-8%	-11%	47.7	6%	7.3	-2.3	-1.3
NL	**47%**	74%	**73%**	**-0.41**	-6%	**-30%**	-	-	-	-0.8	-3.5

Note: FTE stands for Full time equivalent, HC for Headcount, PT for part time and isco3D for 3-digit ISCO-88 classification of occupations
Source: Eurostat LFS 2003, and OECD (2002) for wage gaps and motherhood gaps of FI, SE, IE and DK.

Women can respond in two ways to the specific employment costs associated with motherhood in their country:
Either they consider existing costs to be unacceptably high and refrain completely from having children or they postpone maternity until labour market conditions change to the better (risking of course not to ever have children or a number smaller than originally wished for).
Alternatively, women decide that they are willing to bear the costs and consequences of motherhood and carry out their unmodified fertility choices.
Another key issue is the timing of partnership formation which might be postponed due to prolonged education or financial constraints. As a result, first births occur at a later point in time and completed fertility may drop (Gustafsson, Kenjoh and Wetzels, 2002).

However, public policies may play a more or less important role to reduce the cost of children and weaken negative labour market effects. In this chapter, we focus in the first place on public childcare systems, but attention is also given to systems of birth leave and child cash and tax benefits.

4.4.1. Satisfactory public policies

If the overall female headcount employment rate is high or increasing, we expect mothers' employment rate to follow the same pattern and the fertility rate to be high in case the country implements efficient public policies to facilitate the work/family balance. In other words, working women do not adjust their labour market situation or fertility choices, they continue working full-time and do not postpone or refrain from having children.

4.4.2. Unsatisfactory public policies

If instead public policies are unsatisfactory, the high (or increasing) level of headcount female employment is bound to affect the fertility rate which decreases and/or to induce a larger use of part-time employment among mothers. However, at this stage, it is important not just to look at the general level of female employment in a given country to estimate the possible effect of the cost of a child on young mothers' labour market participation and fertility but also at the level of GDP per capita in the country. Indeed, it may be the case that female employment is very high (or increasing) in a given country but that no motherhood gap in employment is worth mentioning despite the fact that public policies are unsatisfactory. The deficiency of public support will inevitably affect the fertility rate but those women who decide to have children necessarily remain active on the labour market for financial reasons. In other words, women's choices are guided by the same principle as men's, that of a dominating income effect. Note that in countries of this type as well as in those where young mothers are most likely to re-enter the labour market on a part-time basis, the price they pay for wanting to raise children may still be very high, that is in terms of professional segregation.

These two hypothetic adjustments are detailed in the next section which presents specificities for each of the former EU-15 countries.

4.5. The specific situation of each of the former EU-15 member states

Table 4.3. Main indicators of the labour market conditions, public family policies and fertility (2003)

	FTE f 2003 empl. rate	HC f 2003 empl. rate	HC f 1990 empl. rate	HC f diff rel empl. 90-03	all f work part time	Index child care	Index birth leaves	Index cash & tax ben.	TFR 2003	CFR 1964
FI	74%	79%	85%	-7%	12%	46.3	78.1	34.0	1.76	1.92
SE	73%	82%	90%	-8%	31%	69.1	63.7	**27.8**	1.71	2.00
PT	70%	74%	65%	14%	12%	**22.1**	73.9	**25.5**	1.44	1.82
DK	70%	79%	80%	-2%	27%	91.1	43.9	**26.0**	1.76	1.93
AT	64%	77%	70%	10%	**38%**	33.4	66.5	67.1	**1.39**	**1.65**
FR	63%	72%	65%	11%	29%	45.5	80.8	36.6	1.89	2.04
UK	58%	74%	69%	8%	**41%**	**24.3**	**16.7**	43.3	1.71	1.89
DE	**54%**	72%	60%	20%	**43%**	30.0	49.9	50.6	**1.34**	**1.56**
BE	**54%**	68%	55%	24%	**40%**	36.9	49.8	64.0	1.61	1.79
LU	**53%**	65%	**49%**	34%	32%	36.7	61.0	80.3	1.63	1.81
EL	**53%**	**57%**	**47%**	20%	7%	**14.0**	**12.7**	47.2	**1.27**	1.76
IE	**52%**	65%	**39%**	66%	29%	**6.8**	**31.2**	47.6	1.98	2.23
ES	**51%**	**56%**	**37%**	51%	16%	**16.4**	61.1	**16.8**	**1.29**	**1.64**
IT	**48%**	**55%**	**44%**	27%	18%	37.6	56.9	**28.4**	**1.29**	**1.52**
NL	**47%**	74%	**52%**	43%	**73%**	28.0	71.0	30.3	1.75	1.79

Note: FTE stands for " Full time equivalent", HC for "Headcount", TFR for "total fertility rate" and CFR for "Completed fertility rate"
Source: Eurostat LFS 2003 ; OECD (2002); own calculations for indices; Eurostat long-term indicators for TFR and CFR.

4.5.1. High score on child care policies

In the Scandinavian countries, motherhood does not, at first sight, seem to have a price in terms of labour market situation and career prospects thanks to the generosity of public support to families with children. Female employment is very high in these countries (and converging towards men's) and the motherhood gap in employment is weak. Full-time employment appears to be the norm both for men and women regardless of the presence of children. The labour market transition Swedish women are least likely to make is the one of interrupting work (Henz and Sundström, 2001, p. 259). Moreover, fertility rates are amongst the highest in Europe. There has been a continued postponement of marriage in Denmark since 1980 but the trend has been less pronounced in recent years. Also the mean age of women at first birth has been increasing, particularly among women in higher occupations. The high degree of compatibility of family and professional responsibilities as well as of gender equality is made possible by the system of childcare that is organised primarily by the state via public-sector provisions that are available at comparatively low costs. For Finland, it has been shown that the extension of maternity leave has had a positive impact on fertility, especially for higher-order births (Rønsen, 2004, p. 160). In the Scandinavian countries, there is a sharing of roles and a corresponding low degree of dependence between spouses. The social security and tax system in Sweden, for example, is completely individualised: individual tax assessment and no derived eligibility for social benefits. Denmark has had an almost independent income taxation system for married couples for a long time as well. Individualisation has had a very favourable effect on female employment (Apps and Rees, 2001). However, the increase in female employment has had its price: having been made

possible by an expansion of the public sector, it has triggered a growth in occupational segregation. In recent years, Denmark and Sweden have had some success in reducing occupational segregation although inter-industry segregation remains troublesome in Sweden. Moreover, the former taxable allowance for families with children has been replaced in Denmark by a system of family allowances that are paid to all families regardless of income and with slightly higher amounts for children aged 0-2 years.

Another country with a rather high score regarding child care policies is France. Moreover, this country has one of the highest female employment rates measured in full-time equivalent. This leads us to expect that similar adjustments might be occurring in France and in the Northern European countries. However, in France the employment penalty of motherhood is more pronounced. A possible explanation for this might derive from the peculiarities of its parental leave system, compared to the Finnish one for example. Both leaves are long and family-based although in Finland replacement rate is proportional to the wage (up to 70%) for the first ten months (combined maternity and parental leave) after childbirth while in France persons in leave receive a flat rate payment amounting to around 25% of the average female earnings. This difference is important in terms of participation rates according to LFS definition: employed persons going on a leave exceeding three months remain to be considered employed only if the replacement rate amounts to more than 50% of one's previous wage. If not, then he/she is considered inactive. Therefore, lower employment penalty in Finland than in France might partly be due to this statistical effect. In sum, the bad parental leave system in France puts pressure on mothers' employment causing an adjustment of the participation decision rather than of working hours. On the other hand, the low level of maternal labour market participation might at least partially derive from the high rate of unemployment that characterises the French labour market. The very high level of the French fertility rate (and rising in recent years) has been shown to derive from the quality of state support for families (Cfr. Letablier, 2003). Ekert-Jaffé et alii (2002) find a clear effect of French family policy on the progression to third births and the timing of births.

4.5.2. Medium score on child care policies

Female employment rates, expressed both in headcount and in FTE, are very similar in Belgium and Luxembourg (slightly below the European average). In Belgium, the quality of public policies to support the combination of professional and family responsibilities prevents there from being an employment penalty for mothers and thus a decreasing fertility rate. Public support for 0-3 years olds appears to be more generous in Belgium than in Luxembourg, i.e. mainly because the coverage rate is much higher in Belgium whereas financial support to families with children is higher and child:staff ratios in childcare facilities better in Luxembourg. The same holds true for older children: Belgium provides a system of free and universally accessible nursery schools so that coverage is almost complete whereas Luxembourg scores better as far as financial aspects (and therefore child:staff ratios) are concerned. These differences might explain why the employment penalty of motherhood in terms of participation and segregation is much more pronounced in Luxembourg than in Belgium : while working mothers in Belgium are more numerous to find a place for their children, in Luxembourg, policies focus more on offering adequate financial support to families (a more generous leave replacement rate, child benefits, child-rearing allowances, etc.) without necessarily being in favour of mothers' continuous labour market attachment. Besides these employment penalties, the very generous level of financial support to families with children in Luxembourg is likely to sustain fertility while in Belgium relatively a high fertility rate is maintained thanks to policies that are supportive of dual-earner families. As a last remark, note that other explanations besides motherhood must be found for the low

employment rate in Belgium whereas in Luxembourg it might be precisely due to motherhood that overall female employment is so low.

4.5.3. Low score on child care policies

Austria and Germany are countries where the high level of female employment has reflected into a decrease in the fertility rate because public policies lack adequacy in alleviating the cost of children. Moreover, an adjustment by young mothers often takes place in the form of an increased use of part-time employment. In other words, there is a substantial motherhood gap in FTE employment. In these countries, an important share of childcare is provided at the household level through kinship care networks. Childcare organised through the educational system allows parents to work only very short hours in Germany given that schools end at lunchtime. National policies in Austria and Germany are traditionally familialistic favouring the economic dependence of wives on their husbands and stimulating mothers to choose inactivity rather than part-time work and part-time work rather than full-time jobs. A 2001 study of employment transitions in Germany has provided unambiguous evidence for their very gender-specific nature. Indeed, among all married West-German spouses identified in the sample, only 25 full-time employment episodes for husbands ended up in housemaking whereas no less than 1243 events of this type were recorded among wives (Blossfeld, Drobnič and Rohwer, 2001, p.60). Full-time working German dual-earner couples are punished by the household-based tax system which privileges wives' non-work or part-time work (Blossfeld and Drobnič, 2001, p.42). The rise in part-time employment is particularly worrisome in terms of segregation. Indeed, the part-time workforce faces rising occupational segregation. However, given that labour markets are highly regulated in Germany and Austria, most part-time jobs tend to be better protected and the share of marginal jobs tends to be lower compared to countries such as the UK where the unregulated, market-driven structure of employment has generated a huge population of low-earners, mostly active in the service sector, and a decreasing wage rate for 'middle-class' workers.

Given the inadequacy of public policies supportive of dual-earners in the UK, it is remarkable that the high level of female employment has not brought about a decrease in the fertility rate. However, in the UK fertility is sustained by an extremely high rate of teenage births. Indeed, completed fertility has been declining (starting with the 1995 cohort of women). Evidence does suggest there to be an adjustment in terms of working hours with mothers making much more use of part-time options. In general, the increase in women's participation in the post-second-World-War period should not be interpreted as an increase in labour supply, since women's total hours of work remained unchanged and the FTE employment rate stable. Moreover, part-time jobs offer very poor employment protection and often take the form of marginal jobs. Indeed, the unregulated, market-driven structure of employment has generated a huge population of low-earners, mostly active in the service sector. In the 1980s, married women's full-time participation grew and women with young children were becoming more present on the labour market so that a pattern of continuous employment gained ground along with a polarisation at the upper and lower ends of the occupational ladder due to the take-up of maternity leave around childbirth. Indeed, the group of highly educated, short break maternity leavers returning to full-time jobs is opposed to that of young mothers returning to part-time jobs after longer spells out of employment. The latter has been and still is the most common pattern among British mothers although it has been declining since the mid-1980s. The reason why childcare provisions are unsatisfactory in the UK is because they are mainly organised via the market and no direct policy measures exist to stimulate mothers' labour market participation. In 1991, the tax system was reformed so that taxes are computed based on an individual assessment of revenue. Moreover, the tax allowance associated with marriage or with having children was reduced, if not dropped altogether, over time. Also, the direct tax

burden on singles relative to couples has gradually been brought down. To sum up, we quote McCulloch and Dex (2001, p. 198): "*Combining the low priority given to men's participation in childrearing with the relatively short periods of maternity leave offered to women, it is perhaps not surprising to see growing polarisation between British women (and possibly couples) in the way they plan their family responsibilities and employment participation, although it is not necessarily desirable*". Similar trends and motherhood costs are found in Ireland although female employment is at a much lower level than in the UK. Note, however, that female employment rates have been rising over recent years. Ireland has experienced the most rapid decline in fertility of any industrialised country at the same time as it has been able to improve its child benefit package (thanks notably to the decline in fertility along with the Celtic Tiger economy).

The Netherlands deserves being treated apart from the other countries. Female employment is comparable with the EU-average in this country. However, the FTE employment rate of young mothers is particularly low in the Netherlands. Despite its progressive view on a lot of matters, the division of labour between spouses remains extremely conservative. The modal pattern is a full-time working husband and a non-participating wife (49.6%). The second highest frequency occurs for the male breadwinner/female part-time carer model (32.6%) (Hendrickx et alii, 2001, p. 80). Given that the fertility rate remains relatively high, the mediocrity of childcare provisions puts pressure on mothers' employment and leads to an adjustment in working hours. Indeed, a high proportion of married women holds part-time jobs. To quote Hendrickx et alii (2001, p. 77): "*Until the 1970s, most women stopped working after they became married. Later, many women stayed in the labour force until the arrival of children. More recently, it has also become an option to reduce the number of working hours, rather than stop working completely. In addition, many women who decide to stop working on the arrival of children re-enter the labour market once the children start going to school, often in part-time jobs. The family cycle is therefore a key factor affecting transitions between full-time work, part-time work, and outside the labour market.*"
In the Netherlands, the concentration of part-time jobs in the secondary segments of the labour market is less marked than in other countries. They are not necessarily associated with low wages and unsatisfactory social security. Nevertheless, they do entail the same negative effects on women's careers than elsewhere. Indeed, women in part-time employment tend to accumulate less human capital and employers tend to view them as a less motivated workforce. So, indirectly, part-time work does bring about a wage penalty as well as women's under-representation in the higher occupational groups.
The fact that women are assumed to be at least part-time available for childcare matters is reflected in the system of public policies. The coverage rate of the public childcare system is extremely low for under-four year olds. Parental leave is universally offered as an individual right but has to be taken up on a part-time basis and is unpaid. These two features of the parental leave make it rather ridiculous. Recall that the great majority of mothers work part-time in the Netherlands (if they are active at all). In other words, they are part-time available to assume their childcare tasks and thus there is really no incentive or sense whatsoever to take an unpaid, part-time "parental leave". The Dutch parental leave thus only seems to be helpful to parents who decide to reduce their work hours below the usual part-time hours.

In the Southern European countries of Spain, Italy and Greece, female employment is relatively low. However, in recent years it has been on the increase. It follows that given the low degree of supportiveness of public policies with respect to dual-earner families, the fertility rate has witnessed a steep decline. This 'baby bust' should be interpreted as the combined effect of the postponement of marriage, a postponed arrival of the first child and a longer spell between the first and the second child. The most prominent choice made by dual-earner couples is for both partners to continue working full-time and to refrain completely from having children. Women who nevertheless decide that they want to raise children are forced to

withdraw totally from the labour market. Indeed, in the Southern European countries, very few part-time options are available. Moreover, married women of childbearing and childrearing ages are a minority among part-timers (Drobnič, 1997). Thus, these women have to become inactive. The small number of part-time jobs that do exist are associated with low-level unskilled occupations with no training and promotion opportunities (Meulders et alii, 1994, p. 10). Moreover, half of the people working part-time are employed on a temporary basis and involuntary part-time is significantly higher than in other countries: one woman in three working part-time is doing so because she has not been able to find a full-time job (Meulders et alii, 1994, p. 30). In addition, a combination of factors such as the crucial welfare-provider role of the family, the deficient housing markets that encourage adolescents to stay on living in the parental home as well as the high rate of youth unemployment has reinforced the trend towards both low female employment and low fertility (Bettio and Villa, 1998; González-López, 2001). However, the major fact explaining the low level of fertility in Italy and Spain is the low level of unions. Young people's material well-being appears to be preventing them from getting into partnerships. As regards Spain, González-López notes: "*The dramatic fall in fertility levels and the pattern of delayed marriage seem difficult to interpret today. Nevertheless, these patterns may simply be the result of the transition towards a modern egalitarian society where women's aspirations have changed, while at the same time they have not found parallel institutional support*" (2001, p.146). Public childcare provision is extremely low (except for pre-school aged children in Italy), direct family benefits are truly insufficient and there is only a limited focus on social assistance. Families are the relevant locus of social aid. In Italy, for example, public childcare provisions for infants, and particularly under-two's, are almost non-existent given that they are the non-compulsory responsibility of local authorities. Access tends to be expensive and rationed given that inter-generational solidarity is assumed. However, it is worth drawing attention to the very efficient organisation of maternity leave in Italy which is long but very well compensated. The downside is that many women are employed in the irregular economy and thus do not benefit from any maternity protection at all. Moreover, particularly in small firms, an informal regulation of employment relations risks harming women's maternity. "*In practice, punishments at the time of re-entry after maternity leave, in the form of job downgrading, or the obligation, at the time of hiring, to sign an undated dismissal letter that the employers will use at their discretion in case of maternity, are by no means rare events.*" (Bernardi, 2001, p.126). The same risks are faced by many Spanish women. Moreover, in Italy women's and mothers' employment conditions are to a high degree regionally determined, the North of the country being at a clear advantage compared to the South (in Spain also, national studies tend to conceal complex and regionally-specific patterns). Therefore, for this country, it is crucial in order to enhance continuity in women's careers while stimulating the fertility rate that childcare arrangements for under-two's be developed.

A Spanish peculiarity is the tremendous share of the workforce that holds temporary employment contracts. In 1995, 53% of part-time working women and 29% of full-time working women held fixed-term employment contracts (Jepsen et al. 2004). Moreover, it has been shown in chapter III that women with fixed-term employment contracts were more likely to refrain from having children. So, women's increasing participation in the labour market has occurred at the expense of their job quality and stability.

Finally, at first sight Portugal presents a somewhat special case. Women's decisions be it in terms of labour market participation or fertility are guided first and foremost by financial considerations. In other words, the income effect dominates. Indeed, female employment rates are very high in Portugal and the employment effect of motherhood is negligible simply because mothers have to work to contribute to family income. But Greece too has a somewhat lower penalty than the one observed in Italy or Spain. Note, however, that the necessity for women to work does not mean that the quality of female employment is high as well. Indeed,

the Portuguese labour market is very gender segregated, just as we have shown it to be the case in the fast-growing female labour market in Spain. On the fertility plan, the trend in Portugal has been the same as in its neighbouring countries although the decline has not lowered fertility rates to a level as worrisome as in Greece, Italy and Spain. In sum, Portugal does not really present an exception compared to the other Southern European countries in terms of the adjustment mechanisms that take place: in order to maintain (and to raise) female employment rates, on the one hand, the labour market is marked by segregation and on the other, fertility is decreasing despite a substantial income effect that ties Portuguese mothers more closely to the labour market than their Mediterranean counterparts.

4.6. Conclusion: proposal for a country classification

In light of the discussion in the previous section, a typology that ranks countries according to the type of adjustment mechanisms that take place in response to the different levels of public support for families can be derived in a more or less straightforward manner. Three main aspects are looked at to classify countries: the level and quality of female employment, the level of and trend in fertility rates and the generosity of family policies towards the dual-earner model. Roughly three main groups can be distinguished (table 4.4).

The Scandinavian countries, France and to a lesser extent, Belgium, can be grouped together as far as adjustments in the fertility behaviour of working women are concerned. Indeed, these countries share the same combination of public policies in favour of dual-earner families, high (or increasing) female employment rates (in FTE), a small employment penalty for mothers and high fertility rates.

Another group of countries includes Luxembourg, Austria and Germany on the one hand and the UK, Ireland and the Netherlands on the other hand. In this group, relatively high female employment rates contrast with large motherhood gaps in employment and a lack of public policies for families with children. Nevertheless, in the first three countries, relatively generous level of financial support is guaranteed almost universally through a system of child benefits. Note that such policies are more appropriate to fight child poverty than to encourage the dual-earner model. The main difference between the two groups concerns the level of and trend in the fertility rate. In the Netherlands and in the UK, women do not appear to decrease their fertility rate in response to employment penalties induced by motherhood. Note that in Luxembourg, the very high level of financial support main partly explain why fertility has remained high compared to Austria and Germany. In Ireland the level of fertility remains high as well but has been decreasing sharply over the last decades.

A third group of countries includes the four Southern European countries of Spain, Italy, Greece and Portugal. Similarly to those in the second group, these countries are also characterised by a low level of public intervention in terms of child care, especially for 0-3 years olds. On the contrary, the employment penalty for mothers is much lower than in the former group for several possible reasons. Firstly, this may be so because participation is lower so that the small minority of women who do decide to work are expected to have greater job attachment. Secondly, the penalty might be smaller precisely because more women work (Portugal), even if they are concentrated in specific jobs. Working women are driven by financial reasons and it is absolutely crucial to them that they hold on to their jobs in order to contribute to family income in the presence of children, regardless of the price this implies in terms of time allocation. Finally, the small penalty might be associated with the fact that in the Southern European countries, working mothers can count on extended family ties, more so

than in German-speaking countries where mothers are subject to social pressure to take care of their children themselves whilst they are very young, or in the UK where family networks are generally much looser. Moreover, postponed partnership formation due to high youth unemployment rates and prolonged studies has put downward pressure on fertility rates which are amongst the lowest in the world.

Table 4.4. EU-15 classification according to fertility responsiveness to public policies and employment conditions (2003)

	Sub-group a	Sub-group b	Sub-group c
First group - high level of public policies supportive of dual earner-couples, - high fertility rates,	**DK, SE, FI, FR** - high FTE employment rates	**BE** - medium FTE employment rates due top large part-time use	
Second group - low level of public policies supportive of dual earner-couples (child care), - very high employment penalty for mothers - medium to high employment rates (although large use of part-time)	**NL, UK, IE,** - high fertility rates - low level of financial support	**AT, GE** - low fertility rates - relatively high level of financial support	**LUX** - high fertility rates - very high level of financial support
Third group - low level of public policies supportive of dual earner-couples - low fertility - very little use of part-time	**EL, ES, IT** - low employment rates	**PT** - high employment rates although high level of segregation	

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5. Dissemination and/or exploitation of results

5.1. MOCHO Newsletters

Intermediate results have regularly been disseminated by way of the MOCHO web site. Indeed, every six months a newsletter was made available as well as a rich set of news and announcements related to the project or its members. Also, the full text of all deliverables has been available electronically as soon as these were finished and due to the EC.

Dialogue Workshop "Researching Family, Employment and Welfare Issues in Europe: the quantitative approach", joint conference: MOCHO, DynSoc, Fenics

On February 18-20, 2003 a joint conference took place in Brussels. The starting point for this working conference was that several of the research projects commissioned under Improving the Socio-Economic Knowledge Base have been studying closely related issues within the broad areas of family, employment and welfare. Within the theme labelled 'Family and Welfare', three projects, DynSoc, FENICS and MOCHO, were all using quantitative analysis of existing large-scale data sets to investigate a series of linked issues around family formation, men's and women's employment, poverty and deprivation, and so on. The conference directly involved all the national teams associated with the projects and provided them with the opportunity to meet each other and exchange detailed results and work in progress. There was also time for technical discussion. The MOCHO team was well represented at this conference. We presented some of our most interesting results. Contact was made with some potential partners for future research.

5.2. The publication of a special issue of TRANSFER

TRANSFER is a publication of the European Trade Union Institute (ETUI). The aims and scope of the journal are the following:
It stimulates dialogue between the European trade union movement and the academic and research community;
It helps to foster understanding of significant developments in the field of European trade union policy and industrial relations;
It contributes research findings of practical relevance to the trade unions. At the same time, it enables the academic research community to gain access to the world of industrial relations;
It contains contributions from a wide range of disciplines (sociology, economics, politics, law and history).
The Belgian coordinator of the MOCHO project, Danièle Meulders, has coordinated the edition of a special issue of this journal on the subject of "Work and the Family". It has been the Spring 2004 issue. The members of the MOCHO team have each written at least one article.

Editorial
Author: Danièle Meulders

Article on future policy aspects of ETUC in the field of motherhood and work
Author: Sinead Tiernan, ETUC's Women's Committee

« The role of welfare state typologies in analysing motherhood »
Authors: Danièle Meulders and Síle O'Dorchai

« New evidence on work among new mothers. What can trade unions do? »
Authors: Siv Gustafsson and Eiko Kenjoh

« Parenthood and time allocation in the countries of the EU »
Author: Haris Symeonidou

« The relative generosity of the EU countries' childcare systems »
Authors: Jérôme de Henau, Danièle Meulders, Síle O'Dorchai and Hélène Périvier

« Motherhood and wages »
Author: Cécile Wetzels

« Labour supply of Italian mothers. A comparison with other EU countries: facts, data and public policies »
Authors: Daniela Del Boca and Silvia Pasqua

5.3. Special MOCHO session at the IAFFE conference in Oxford

The 13th Annual Conference on Feminist Economics sponsored by the International Association for Feminist Economics was held August 5-7th 2004, at St. Hilda's College, Oxford, England. Our special MOCHO session was entitled "Balancing motherhood and employment" and included two MOCHO papers, one by the Brussels team and one by the Amsterdam team:

« New evidence on work among new mothers. What can trade unions do? »
Authors: Siv Gustafsson and Eiko Kenjoh

« The relative generosity of the EU countries' child policies »
Authors: Jérôme de Henau, Danièle Meulders, Síle O'Dorchai and Hélène Périvier

5.4. Publication of the State of the Art in book-format

The MOCHO State of the Art has been published by the EC following the first 12 months of research. However, the information contained in the State of the Art turned out so rich that it was decided to be worthwhile restructuring and rewriting it so as to make it appropriate for publication in book format.
This publication is being edited by Daniela Del Boca and Cécile Wetzels. It will probably be an Oxford University Press publication. The book will have the following outline:

Introduction
Daniela del Boca & Cécile Wetzels

Part 1. Public policies, labour markets and motherhood:

Chapter 1: short introduction on welfare state typologies (based on Transfer)
Danièle Meulders and Síle O'Dorchai

Chapter 2: The family-friendliness of public policies across Europe: building synthetic indicators: child care
Jacques Le Cacheux, Danièle Meulders, Hélène Périvier, Jérôme de Henau and Síle O'Dorchai

Chapter 3: To what extent do labor markets across Europe accommodate to new needs and realities of women and families? Part-time and leave (parental leave / maternity leave)
Jacques le Cacheux, Sile O'Dorchai, Hélène Périvier, Jérôme de Henau & Danièle Meulders

Part 2. Fertility, Participation, Wages and Time allocation of Mothers

Chapter 5: Fertility trends in Europe
Siv Gustafsson and Eiko Kenjoh

Chapter 6: Motherhood and labor force participation
Daniela del Boca & Marilena Locatelli

Chapter 7: Motherhood and Wages
Cécile Wetzels

Chapter 8: Motherhood and Time Allocation
Haris Symeonidou

Part 3. Empirical analyses: Fertility, Participation, Wages and Time Allocation of Mothers in the European Union

Conclusion
Daniela del Boca & Cecile Wetzels

The book will be targeted at three main reader categories: researchers in Economics and Demography, Undergraduate students at senior level and graduate students and last but not least at policy-makers. For the time being, it is entitled : "The rationale of motherhood" but this might still be changed.

5.5. MOCHO Conference at Pau in March 2005

As a follow-up to the project, the following conference will be organised:

The Rationale of Parenthood Choices

Call for papers
University of Pau (France), March 4-5, 2005

Scientific Committee (provisional):
Jacques LE CACHEUX (CATT/UPPA and OFCE) and Danièle MEULDERS (ULB/DULBEA).
Miriam BEBLO (ZEW, Berlin), Jérôme DE HENAU (ULB/DULBEA), Daniela DEL BOCA (U. Torino/CHILD), Jeanne FAGNANI (U. Paris 1), Janet GORNICK (City U. New York), Siv GUSTAFSSON (U. Amsterdam), Maia GÜELL (U. Barcelona), Adriaan KALWIJ (U. Tilburg), Marie-Thérèse LETABLIER (CEE), Jane LEWIS (U. Oxford), Margaret MARUANI (Iresco/MAGE), Antoine MATH (IRES), Monique MERON (DARES), Síle O'DORCHAI (ULB/DULBEA), Hélène PERIVIER (OFCE), Henri SERBAT (AEA, Paris), Nina SMITH (Aarhus School of Business), Haris SYMEONIDOU (EKKE, Athens), Jane WALDFOGEL (Columbia U. New York), Cécile WETZELS (U. Amsterdam).

Organisational Committee:
Frédérick DIVIALLE (FédEco), Anne PERRIN (CATT/UPPA).

Attitudes towards parenthood are at the core of all economic and social problems raised by the decline in fertility rates and the ageing process of Europe's population.
In this context, the question of the influence of labour market conditions on fertility choices and the question of the adequacy of public policies in order to facilitate the combination between employment and parenthood have to be raised.

These have been the central question of the MOCHO research project (**Motherhood choices: The influence of employment conditions and of public policies**[1]) during the last three years. The aim of the project was to study how the motherhood decision is affected by labour market conditions and how public policies can be designed in order to promote parenthood by dual career couples, which is becoming the normal way of life in the European Union's member states.

To go beyond the issues raised within this project and to establish a general state of the art of where research stands in this domain as well as to broaden the perspective, a call for papers has proven an interesting method. The call involves the following themes which are often interdependent:

- **Household decision-making analyses**
- **Family policy: design and evaluation**
- **Labour market conditions and fertility**
- **Parenthood and earnings**
- **Timing of parenthood**
- **Future employment and demographic trends**

Papers need to conform to the tradition of conferences organised by the Applied Econometrics Association and need to be based on a rigorous scientific analysis of data.

If you wish to present a paper, then submit the full paper (preferably) or a one page summary by filling the "Paper Registration" sheet on the Conference Web site (**http://www.aea.Fed-Eco.org/2005Pau**) no later than December 12, 2004.

Decisions of the scientific committee concerning the papers to be presented will be sent to the authors by January 15, 2005.

Working languages during the Conference will be English and French.

[1] EC Commission funded project n° HPSE-CT2001-00096, http://www.ulb.ac.be/soco/mocho/