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DOCUMENTATION OF 'CARE-PACKAGES' FOR CHILDREN IN OECD'S 2003 TAX/BEN MODEL, DECEMBER 2006

RESEARCH DEPARTMENT OF SOCIAL POLICY AND WELFARE SERVICES

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Documentation of 'care-packages' for children in OECD's 2003 Tax/Ben model, December 2006.

Denmark.

Public childcare. (model check).

Payment:

Three care options are considered:

Family day care (municipality quality guaranteed) for children 0-2 years of age with an average rate of 2,212 DKK /month in 2003. Source: Statistics Denmark. Is the rate correct ?

Nursery institution for children 0-2 years of age with an average rate of 2,742 DKK/month in 2003. Source: Statistics Denmark.

Kindergarten for children 3-6 years of age with an average rate of 1,569 DKK/month in 2003. Source: Statistics Denmark.

There will be a choice in the model between the two options for children 0-2 years of age.

Sibling rebate: Rate for the most expensive child is paid in full, 50% rebate for the other children from the same family.

Subsidy for payment:

Base: Personal income as calculated for taxation, cf. later.

Percentage of calculated rate (for all children in the family) paid by the parents:

If personal income is 121,000 DKK (annual amount, family income) or lower, 0% of the calculated rate is paid.

If personal income is greater than 121,000 DKK but smaller than or equal to 123,678 DKK, 5% of the calculated rate is paid.

If personal income is greater than 123,678 DKK the percentage paid increases by 1 percentage point each time the personal income increases by 2,678 DKK. The number of percentage points to be added to 5 is calculated as: $(\text{personal income} - 123,678) / 2,678$. The result is rounded up to the nearest whole number. 94 percentage points are the maximum.

For personal income greater than 375,400 DKK the full rate (100%) is paid.

Parental leave. (to be implemented in the model)

The parental leave is composed in this way:

4 weeks before delivery (mother)

14 weeks after delivery (mother), in this period also 2 weeks for the father.

32 weeks (after the 14 and 2) can be shared between the parents. The father can start using of the 32 weeks in the '14 weeks' period.

Total leave: $4 + 14 + 2 + 32 = 52$ weeks.

Compensation: 100% of lost income after deduction of general 8% social contribution, max 3,113 DKK/week.

The compensation is calculated on a per hour basis. If the hourly wage is below $3,113/37 = 84.14$ DKK, after deduction of general 8% social contribution, there is full compensation.

We will have to decide on how we handle the hourly mechanism in the model, and we have to decide on whether a fraction of APW wage is due to variation in working hours (constant wage per hour) or is due to variation in hourly wage (constant working time) or a mixture of the two. Up to now we have assumed constant working time (full), but this may be a little unrealistic for very low income levels.

It is not realistic to model full flexibility on the shared part of the leave, the following combinations after delivery are suggested:

Single parent: $14+32=46$ weeks.

Couple:

I Mother: $14+32=46$ weeks, father: 2 weeks.

II Mother: 14 weeks, father: $2+32=34$ weeks.

This gives the maximum leave possible for each of the spouses. It may also be a good idea to have a common combination for all the countries for comparative reasons.

Child benefits. (model check).

These are not components of the 'care-packages' but they are important for the 'economy' of the families with children.

The ordinary child benefits for families with children in 2003:

12,900 DKK (annual basis) for children 0- 2 years (both ages included)

11,700 DKK (annual basis) for children 3-6 years (both ages included)

9,200 DKK (annual basis) for children 7-17 years (both ages included).

For single parents there are supplements:

4,040 DKK (annual basis) for each child 0-17 years (both ages included)

4,108 DKK (annual basis) for the single parent, one per family, for children 0 –17 years (both ages included).

There are usually maintenance payments from the other parent. If these are not received the single parent can receive a guaranteed payment:

10,308 DKK plus 1,332 DKK for each child 0 – 17 years (both ages included) from the municipality. This amount is non-taxable income.

Housing benefits. (model check).

These are not a direct component of the ‘child care-package’ , but they have to be correct, because they have a substantial impact on the ‘economy’ of families with children, especially families with relatively low incomes.

Base: Rent (and here we make simple assumptions) and personal income of the family. It is assumed, that the children have no income of their own.

Rent is adjusted in different ways before entering the Housing Benefit calculation, this is ignored here. It is also assumed that a ‘full’ H.B. can be received, i.e. not restricted by m2 per person. The rent will be calculated as a percentage of the family gross wage from work, 20% is quite usual and is used here. The maximum rent, which can enter the H.B. calculation is 62,600 DKK (no children), 65,730 DKK (1 child), 68,860 DKK (2 children), 71,990 DKK (3 children) and 75,120 DKK (4 or more children).

Housing benefits: $0.63 \times (\text{rent} - \text{‘limiter’})$

The ‘limiter’ is calculated as 2% of family personal income up to a threshold of 111,900 DKK (annual basis). For income above this threshold 28.6% of family personal income is added. The threshold is increased by 29,400 DKK for each child from no. 2 up to and including no. 4.

The ‘limiter’ has a minimum value of 1,900 DKK.

The calculated H.B. can as a maximum be 33,036 DKK for families with 1-3 children, for families with 4 and more children it is 41,295 DKK. Families without children also have a max of 15% of the rent.

The ‘own payment’, (difference between rent and H.B.) has a minimum of 18,800 DKK in 2003. If the own payment is less than 18,800 DKK the calculated H.B. is reduced accordingly.

Personal taxation. (model check).

As far as components of the 'care-packages' for children are taxed, personal taxation is an integrated part of the 'packages'. Further more, personal taxation is crucial for the income concepts used for the results. Personal taxation will be documented here in the simplest way possible and will only include components relevant for the model. There are two basic income concepts relevant for taxation, they are:

Personal income, which is calculated as:

Gross income - contribution for supplementary pension (ATP)– contribution for special pension savings (SP) – general 8% social contribution (AMBI).

Taxable income, which is calculated as:

Personal income – contribution for unemployment insurance (UI) and early retirement (ER).

Personal income is relevant for state taxation, taxable income for local taxation.

The contribution for supplementary pension (ATP) was 894 DKK (annual basis) for those working 27 hours/week or more, 2/3 of 894 for those working between 18 and 27 hours/week and 1/3 of 894 for those working between 9 and 18 hours/week. For those working less than 9 hours/week there is no contribution. Recipients of parental leave benefits pay 2 times the usual contribution.

The base for calculation of the contribution for special pension savings (SP) is gross income minus the contribution for supplementary pension (ATP), The SP contribution is calculated as 1% of this base. This contribution is levied on parental leave benefits.

The general 8% social contribution (AMBI) is calculated on the same basis as the SP contribution. It is calculated as 8% of the base. This contribution is not levied on parental leave benefits.

Personal income = gross income – ATP – SP - AMBI.

The contribution for unemployment insurance (UI) was 2,988 DKK in 2003 and for early retirement (ER) it was 4,364 for full time insured (30 hours/week and more). For part time insured (below 30 hours/week) the contributions are 2/3 of these amounts. It will have to be decided whether the relatively young families with children pay contributions for early retirement (requirement: Contributions for 25 years of the last 30 before early retirement).

Taxable income = personal income – (UI + ER).

State tax:

Bottom tax: 0.055 (personal income – 35,600)

Middle tax: 0.06 (personal income – 198,000)

Top tax: 0.15 (personal income – 295,300)

Local tax: 0.333 (taxable income – 35,600)

In 2003 the top marginal taxation is 59 %. Our tax rates add up to $5.5 + 6.0 + 15.0 + (33.3 - 0.7) = 59.1$, the top tax rate is reduced by 0.1, it is then 14.9% in this study.

Spouses in a couple are taxed on an individual basis but unused personal allowance (35,600 DKK) and unused allowance for the middle tax (198,000 DKK) for one of the spouses can be transferred to the other.

Outstanding questions: The rates for childcare, especially the difference between family day care and nursery institution. Only the nursery institution rates have been applied for the Danish calculations so far.

Sweden.

Public childcare. (model check).

Payment

The Swedish 'preschool' is for children between 1 and 5 years (both ages included). It takes place in two institutions, 'förskolan' and 'familiedaghemmet'. The payment rules are the same for both types of institutions.

The general payment scheme for 'full time care' is 3 percent of the parent(s) gross income for the first child, 2 percent for the second child, 1 percent for the third child. There is no payment for child no. 4 and more children.

Within the general pay scheme the municipalities can, to some extent, have their own rules. They are concerning:

Number of 'pay months': The majority of municipalities have payment for 12 months a year. This will also be assumed here.

Reduction due to illness: Approximately 50 percent of the municipalities reduce the payment when the child is ill. The assumption here is no illness.

Time related payment: For children in families where the parents work approximately 50 percent of the municipalities have no reductions for less than 'full time care'. Approximately 25 percent of the municipalities have two intervals, 'full time' and 'part time'. The remaining municipalities have more than two time intervals. The assumption here will be: no reductions.

Children in families with unemployment or parental leave have a right for preschool for 15 hours/week. In these cases a reduction by 5/8 of the 'full' time rate is suggested. 'Full time care' is assumed to be 1,400 hours/year, 15 hours/week is assumed to be 525 hours/year.

For children 4 and 5 years old there is a free (no payment) preschool (independent on the type of institution) of 525 hours per year. This was implemented from the start of 2003. In relation to a 'full time' rate a reduction by 3/8 is suggested. For children only attending preschool for 15 hours/week and who are 4 or 5 years old a zero payment is suggested.

The assumed and suggested rates and reductions are not the only ones possible, but they are 'main stream' in the Swedish schemes.

In relation to the payment there are the following maximum amounts ('maxtaxa'):

For the first child: 1,140 SEK/month

For the second child: 760 SEK/month

For the third child: 380 SEK/month.

Parental leave. (to be implemented in the model).

The parental leave is composed in this way:

The total leave is for 480 calendar days, 390 of these will be compensated by income related benefits, 90 days by a flat rate benefit.

Each of the parents in a couple has a right for $\frac{1}{2}$ of the leave, but they can agree on a different distribution. 60 days of the leave are reserved for each of the spouses, they cannot be allocated to the other. If the 60 days are not 'taken up' they will be lost. The father has a separate right for 10 days leave with compensation to be taken in connection with the delivery. These are extra to the 480 days. A single parent also has the 60 days of the 'spouse'.

The 390 days (and the 10 days for the father) are compensated by 80 percent of the former gross income calculated on a calendar day basis, i.e. the current gross income in 2003 up to the usual ceiling, which is 7.5 times the 'basic amount' of 38,600 SEK, 289,500 SEK in 2003, divided by 365. The minimum compensation in this period is 150 SEK/day.

For the remaining 90 days the compensation is 60 SEK/day.

The Swedish parental leave scheme is very flexible, it can be distributed over the first 7 years of the life of the child and it can be taken out in fractions, $\frac{3}{4}$, $\frac{1}{2}$, $\frac{1}{4}$, and it can be distributed in many different ways between the parents. It is not possible to model all these combinations. The following combinations after delivery are suggested (leave before delivery is assumed to be 28 days, 4 weeks):

Single parent: $390/7 = 55.7$, after delivery: $55.7 - 4 = 51.7$ weeks.

Couple(rounded to nearest $\frac{1}{2}$ week):

I Mother: $390 - 60 - 28 = 302$ days, 43 weeks, father: $60 + 10 = 70$ days, 10 weeks.

II Mother: 60 days, $8\frac{1}{2}$ weeks, father: $390 - 60 - 28 + 10 = 312$ days, $44\frac{1}{2}$ weeks.

In case I the mother is having her maximum rights while the father is having his minimum leave. In case II it is the other way round. The 10 days for the father can be taken simultaneously with the leave for the mother. A common combination used for all countries should also be applied.

Child benefits. (model check).

These are not a component of the 'care-packages' but they are important for the 'economy' of families with children, especially families with low incomes.

The ordinary child benefits (almänt barnbidrag) for families with children in 2003:

11,400 SEK (annual basis) for children 0-16 years (both ages included).

There are supplements for the ordinary child benefits from child no 3.

3,048 SEK (annual basis) for child no 3.

9,120 SEK (annual basis) for child no 4.

11,400 SEK (annual basis) for child no 5 and more.

For single parents there is a supplement:

There are usually maintenance payments from the other parent. If these are not received the single parent can receive a guaranteed payment:

14,076 SEK (annual basis) up to the age of 16 (included) for the child. This is non-taxable income.

The Swedish child benefits can be prolonged in case of studies to the age of 19 (included). This is not relevant here.

Housing benefits. (model check).

These are not a direct component of the ‘child care-package’, but they have to be correct, because housing benefits have a substantial impact on the ‘economy’ of families with children, especially for families with relatively low incomes.

Base: Rent (and here we make simple assumptions), taxable gross income of the family, number of children.

The rent also includes heating, electricity etc., but this is ignored here. The rent can be reduced if the ‘norm m2 threshold’ is passed, this is assumed not to be the case here.

Housing benefits have two components, one according to the number of children and one according to the housing costs:

	Child comp. SEK/month	75% rent/month	Housing cost comp. 50% rent/month
1 child	600	2,000-3,000	3,000-5,300
2 children	900	2,000-3,300	3,300-5,900
3 or more children	1200	2000-3,600	3,600-6,600

Example: A family with 2 children and a monthly rent of 5,000 SEK will receive: $900 + 0.75(3,300 - 2,000) + 0.50(5,000 - 3,300) = 2,725$ SEK/month or 32,700 SEK in 2003, if the benefits are not tapered, cf. below.

The income which housing benefits are tapered against is taxable gross income after deduction of 117,000 SEK. The taper is 20%. The 117,000 SEK is for single parents. For couples it is for income above 58,500 SEK for each spouse. This is only different from the single parent if one of the spouses has an income below 58,500 SEK.

If our family has a taxable gross income of 200,000 SEK the housing benefits will be: 32,700 SEK – 0.2 (200,000-117,000) = 16,100 SEK in 2003.

There is also a housing benefit scheme for young families without children, assumed not to be relevant here.

Personal taxation.

Basic allowance: This is based on gross income rounded down to the nearest 100, here called IN, and the basic amount 38,600 SEK, here called B.

Income (IN)	Basic allowance (BA)
$B \times (0 - 1.49)$	$0.423 \times 38,600 = 16,328 = 16,400$
$B \times (1.49 - 2.72)$	$0.423 \times B + 0.20 \times (IN - 1.49 \times B)$
$B \times (2.72 - 3.10)$	$0.67 \times 38,600 = 25,862 = 25,900$
$B \times (3.10 - 6.87)$	$0.67 \times B - 0.10 \times (IN - 3.10 \times B)$
$IN > 6.87 \times B$	$0.293 \times 38,600 = 11,310 = 11,400$

Social contributions (SC): The mandatory contribution for pensions is 7%. The contribution is calculated on basis of IN up to a ceiling, which is $8.07 \times 40,900 = 330,063 = 330,000$ SEK in 2003. The maximum contribution is $0.07 \times 333,000 = 23,310 = 23,300$ SEK. The contribution is rounded to the nearest 100, 50 is rounded down. Social contributions are not levied on income below 16,400 SEK.

Tax calculation: Taxable income (TIN) is income (IN) minus basic allowance (BA) minus social contributions (SC).

Since the taxpayer receives a tax credit of 75% of the social contribution, the deduction in income (IN) is reduced to 25% of SC. This deduction is rounded up to the nearest 100.

The nominal state tax is 200 SEK.

The municipality tax is the local tax rate (here we apply OECD's) multiplied by taxable income, TIN.

The state tax is 20% of taxable income (TIN) between 284,300 SEK and 430,000 SEK, for taxable income above 430,000 SEK it is 25%.

When the taxes are calculated a tax credit of 75% of the social contribution for pensions is deducted. The sum of the tax credit and the deduction in income (IN) when taxable income (TIN) is calculated equals the social contribution for pensions.

When disposable income is calculated, state and local taxes (net of the '75%' tax credit) and the social contribution for pensions are deducted from gross income.

Spouses in a couple are taxed on an individual basis. Wage income and parental leave benefits are taxed identically and social contributions are levied at both with the same rate.

Outstanding questions: None.

Norway .

Public childcare. (model check).

Norwegian childcare schemes were reformed considerably in the period 2003 to 2005. It started with increased state subsidies in August 2003 with the aim of lowering the payment for child care for parents. This was followed by national maximum rates and a national scheme for siblings rebate from May 2004 and in 2005 by further reductions of the national maximum rates.

2003 is a difficult year to model because of very considerable variations in most relevant dimensions. There are many agents, both municipal and private. The rates varied considerably, there was no national scheme for siblings rebate (considerable variation) and no national scheme for earnings related rates, a dimension with very considerable variation. Some institutions had reduced rates for reduced time, but not all. It is hardly possible to construct a precise 'average' model for 2003, so what is aimed for here is to catch the 'spirit' of Norwegian child care in 2003 with the restriction that the 'spirit' should also be reasonably close to that of 2004.

Child care is for children in the age group 1-5 years (both ages included). The average full time rate is assumed to be 3,000 NOK/month for 11 months per year. Only full time use of the institutions is considered here. Some institutions have a supplement to be paid for small children, this is assumed not to be the case here. The average siblings rebate in 2002 was 32% of the full rate. This is here approximated by 1/3 for child no. 2, 3 etc. This is in accordance with the 2004 national scheme for the second child (30%), but not for child no. 3 etc. (50%). Income related rates were sometimes an alternative to siblings rebate, but here an income related rate scheme is assumed to exist. It is constructed in this way:

Minimum payment: 1,000 NOK for 11 months.

In the income interval 100,000-120,000 NOK (annual family personal income) the full rate increases from 1,000 NOK to 1,500 NOK/month (25 NOK for an increase of 1,000 NOK). The rate stays at 1,500 NOK/month until an income of 200,000 NOK is reached.

In the income interval 200,000-220,000 NOK the rate increases from 1,500 to 2,000 NOK/month. The rate stays at 2,000 NOK/month until an income of 300,000 NOK is reached.

In the income interval 300,000-320,000 NOK the rate increases from 2,000 to 2,500 NOK/month. The rate stays at 2,500 NOK/month until an income of 400,000 NOK is reached.

In the income interval 400,000-420,000 NOK the rate increases from 2,500 to 3,000 NOK/month, and the rate stays there for income above 420,000 NOK.

For 2 children it is the combined rate ($1 \frac{2}{3}$), which is regulated according to the scheme (41.67 NOK for an increase of 1,000 NOK in income in the relevant intervals), for 3 children it is $2 \frac{1}{3}$ of the full rate etc.

This is not a precise model, but it captures the 'spirit' of parents' payment for childcare in Norway in 2003 and to some extent also in 2004. It is based on the document: St. meld. Nr. 24 (2002-2003) and the report: Rapport 04/03 Maksimalpris i barnhager, Econ.

Parental leave. (to be implemented in the model).

The parental leave is composed in this way:

3 weeks before delivery (mother).

6 weeks after delivery (mother).

4 weeks after delivery and after the 6 weeks for the mother (father)

29 weeks after delivery can be shared between the parents.

The father also has a right for 2 weeks leave (without compensation) close to and after the delivery. This component has not been included.

Total leave: $3 + 6 + 4 + 29 = 42$ weeks. These may be stretched to 52 weeks if 80% of the 'full' compensation is accepted. The 3, 6 and 4 weeks can not be stretched, but the lower rate will be received also for these weeks, if the 80% option is selected. One of these options must be selected before starting the leave and it can not be changed during the leave. It is also possible to use a 'time account' to spread the leave over 2 years combined with part time work or 'kontantstøtte', cf. the following. Only the 29 weeks to share can be used for the 'time account'.

Compensation: The 'full' rate is 100% of former income up to 6 times the 'basic amount' (grunnbeløbet) of 55,964 NOK (average 2003), in total an income of 335,784 NOK in 2003.

If the compensation falls below 33,584 NOK for the whole period it is 'topped-up' to this level. The 33,584 NOK is a maternity grant paid to non working mothers (this grant is non taxable, it will have to be checked how topping up of a taxable income component to a non taxable minimum works).

The 80% option will be used (it is the usual one) .The distribution of the leave after delivery is suggested to be this:

Single parent: 49 weeks ($6+4+39$ using the 80% option).

Couple:

I Mother: $6+39=45$ weeks, father: 4 weeks

II Mother: 6 weeks, father: $4+39=43$ weeks

In case I the mother gets the maximum leave and the father the minimum one. In case II it is the other way round. A common combination used for all countries should also be applied.

Parental leave benefits are taxed as wage income also for social security contributions.

Cash benefits, kontantstøtte. (to be implemented in the model).

Norway has an alternative to public day care (day care with state subsidies) in the form of a benefit for the parents for looking after the child themselves. It typically follows after the parental leave.

The benefit can be received for children in the age group 1-2 years (including both ages). The only other condition is that there is no full time application of public day care. There is no tapering against other income and the benefit is non-taxable income. It is paid per child.

Rates, average 2003

Full rate, no application of day care	39,285 NOK
Day care up to 8 hours/week	31,430 NOK
Day care, 9-16 hours/week	23,570 NOK
Day care, 17-24 hours/week	15,715 NOK
Day care, 25-32 hours/week	7,860 NOK
Day care, 33 hours/week and more	0 NOK

Child benefits. (model check).

Ordinary child benefits for families with children, 'barntrygd', in 2003:

11,664 NOK (annual basis) for children 0-17 years (both ages included).

3,792 NOK (annual basis) in supplement for families living in the northern part of Norway (Finmarkstillegg), not included here.

'Ordinært småbarnstillegg' in 2003:

7,884 NOK (annual basis) for children 1-2 years (both ages included). This benefit was abolished from August 2003. The 2003 benefit was therefore 4,599 NOK (benefits for 7 months). This is for all families with children in the relevant age bracket, 1-2 years.

For single parents there are supplements:

Child benefits for one extra child is received, 11,664 NOK. If the single parent has one child she will receive $2 \times 11,664 \text{ NOK} = 23,328 \text{ NOK}$.

There is also a guaranteed advance maintenance payment per child (Bidragsforskudd). The rules for this scheme were changed by October 2003. Ideally both the old and the new rules should be implemented, but it was decided to only model the new rules, including the benefit level from October 2003.

Bidragsforskudd from June 2003: $12 \times 1,240 = 14,880 \text{ NOK}$

The benefit is tapered in steps according to the income of the recipient (single parent). The income used to taper the benefit consists of the relevant ones of these components: personal income + child

benefits (excluding the ordinary 'småbarnstillegg', which was abolished from October 2003) + extra 'småbarnstillegg' + 'kontantstøtte' for the child in case.

The benefit is paid as 100%, 75%, 50% or 0% according to this schedule:

Single provider		Income bracket for share:		
Number of children	100%	75%	50%	0%
1	<= 125,000	125,001 – 233,100	233,101- 396,800	> 396,800
2	<=125,000	125,001 – 262,300	262,301- 396,800	>396,800
3	<=125,000	125,001 – 291,500	291,501- 396,800	>396,800
4	<=125,000	125,001 – 320,700	320,701- 396,800	>396,800

The limit when the benefit becomes 0 is for an income larger than $320 \times 1,240 = 396,800$ NOK

The benefit is non-taxable income according to the new rules (it was taxable according to the old ones).

Single parents receiving ('overgangsstønad') can receive an 'extra småbarnstillegg' for children in the age group 0-2 years (both ages included). There is only one supplement (extra småbarnstillegg) per family. The rate was 7,884 NOK (annual basis) in 2003. If the single parent has an infant an 'extra' as well as an 'ordinary' 'småbarnstillegg' can be received in 2003.'Overgangsstønad is considered to be a special scheme for those not being able to work because they have to care for the child. Check this interpretation, cf. also the assumption made in the section on personal taxation.

Single parents who have to let other people look after their children can receive a benefit ('stønad til barntilsyn') covering 66% of the documented expenditures up to a maximum. The maximum benefit was 2,671 NOK/month for 1 child, 3,485 NOK/month for 2 children and 3,949 NOK/month for 3 or more children. These benefits are reduced to 50% if the annual income is between 6 and 8 times the basic amount ('grunnbeløbet'), if it is above 8 times the basic amount the benefits are reduced to 0. These benefits can be received until the child is through his or her 4. school year. This is a general scheme used to reduce the costs for day care, including public day care.

Housing benefits. (model check).

The Norwegian housing benefit scheme is relatively restricted as far as access conditions are concerned. Families with children are eligible as well as families receiving specific social benefits. In our context families with children are eligible but working families without children are not.

Housing benefits are calculated as:

$$\begin{aligned}
 & \text{Approved housing costs} \\
 & - \text{Own payment} \\
 & \text{Result} \times .7 = \text{housing benefits}
 \end{aligned}$$

Approved housing costs are here assumed to be equal to the rent, in the model calculated as 20 percent of the gross wage income of the family. This is a simplification.

In 2003 there was extraordinary high limitations for approved housing costs between May and September, due to high electricity costs. We have therefore made a two step calculation for 2003 in the model, cf. below. The limitations includes a 5000 NOK amounts for urban areas:

April:

	Max	Min
1 or 2 family members	55,000+5000	16,800
3 family members	59,500+5000	19,400
4 family members	64,000+5000	21,100
5 family members or more	68,500+5000	22,800

September:

	Max	Min
1 family members	70,000+5000	16,800
2 family members	82,000+5000	16,800
3 family members	89,000+5000	19,400
4 family members	96,000+5000	21,100
5 family members	103,000+5000	22,800
6 family members or more	110,000+5000	22,800

Housing costs outside the interval established between the min and the max are not included in the calculation of housing benefits.

Own payment is calculated on basis of personal income; cf. the section on personal taxation. (there are alternatives which will be studied). The own payment is calculated in this way:

- 1 and 2 family members: 17% of income identical to 82,000 NOK
- 3 family members: 17% of income identical to 97,000 NOK
- 4 family members: 17% of income identical to 107,000 NOK
- 5 family members: 17% of income identical to 117,000 NOK)
- more than 5 : 17% of income identical to 117,000+ 10,000 x '+5'

'+5' indicates family members beyond 5.

For income beyond these limits there is an immediate addition of 0.3 percentage point to the 17 and then for each time the income increase by 1,000 NOK. This means that a family of 2 with an income of 82,001 NOK has an own payment 17.3%* income.

Housing benefits below 2,000 NOK are not allocated. ('Retningslinjer for bostøtte – Husbanken 09.03: 4-5).

Housing benefit calculation: For housing costs below or equal to the lower (April) limits the H.B. calculation is done on an annual basis in the usual one step way.

For housing costs above the lower (April) limits the H.B. calculation is performed in two steps. The first is for the part of the housing costs, which are equal to the lower (April) limit, the annual H.B. receives a weight of 2/3. The second step is a H.B. calculation for the total housing costs (they are above the lower limit). The annual H.B. from this step receives a weight of 1/3. The H.B. is the sum of the weighted results from the two steps.

Personal taxation. (model check).

Norwegian personal taxation has two basic income concepts:

Personal income (personinntekt). This income concept is equal to gross income. It is used to calculate 'top tax' and social contributions. It is a gross income concept, there are no deductions of any kind.

Ordinary income (alminnelig inntekt). This income concept contains all taxable components. Allowances are deducted before taxes are calculated.

Norway has two tax classes, II for married couples (option) and single providers, I for all other persons. There is also a 'tax exemption' scheme, cf. below.

Allowances:

The personal allowance is 31,600 NOK for class I, 63,200 NOK for class II (a couple receives one class II allowance).

The basic relief is 24% of gross income with a minimum of 31,800 NOK and a maximum of 45,700 NOK for wage earners. For others the minimum is 4,000 NOK.

The personal allowance and the basic relief are additive.

For families with children under 12 years who have expenditures for child care there is an allowance of 25,000 NOK for one child, 30,000 NOK for two or more children. The allowance is allocated to the spouse with the highest income.

Taxes:

Ordinary income (gross income – personal allowance – basic relief) is taxed by 28 %. The tax rate is a combined state and local tax rate.

Personal income (gross income) is taxed by 13.5% for income between 340,700 and 872,000 NOK (class I) or 364,000 and 872,000 NOK (class II) and by 19.5% of income above that level. This is the 'top tax'.

Social security contributions:

The general contribution is 7.8% of personal income if this is above 23,000 NOK, there is no ceiling. Alternatively 25% can be paid of income above 23,000 NOK. The options are: 7.8% of personal income (if this is above 23,000 NOK) or 25% of personal income above 23,000 NOK, whatever is best for the employee. The rate for parental leave benefits is 7.8%.

Single providers pay taxes according to class II parameters, spouses can also do that for their combined (added) income, if it results in lower taxes than individual class I taxation. Joint taxation is an advantage when one of the spouses has none or a low income. Parental leave benefits are taxed as wages.

There are special 'tax exemption' rules for pensioners and single providers receiving 'overgangsstøtte'. The rules for pensioners will be described separately and single providers are assumed not to receive 'overgangsstøtte', cf. the interpretation in the section on child benefits.

Outstanding questions: Is the day care model for 2003 reasonable ? 10 weeks 'gap' (13 weeks after delivery) in ordinary parental leave (42 weeks) before day care or 'kontantstøtte' can start? The gap (3 weeks after delivery for the 80% option used mostly) will be filled by parental leave benefits (should ideally be holiday payment). Topping-up of parental leave benefits (theoretical question not relevant for the income levels used in our applications). 'Overgangsstønad' is here assumed to be a special scheme for single providers, not a general one. It will be included as an option (not described and modelled yet, but we know the rules, also for taxation).

Finland.

Public childcare. (model check).

All children in Finland have a right for public childcare from the time the parental leave benefits for their parents stop until the school age, which is 7 years in Finland.

The payments of the parents depend on their gross income and the family size. There are limits for the maximum payments. The payments follow this schedule:

Family Size	lower income limit	payment percentage
2	918 euros/month	11.5
3	1,132 Euros/month	9.4
4 and more	1,344 Euros/month	7.9

The payment percentage is applied to income above the lower income limits. Payments below 18 Euros/month/child are not claimed.

For each child after no. 2, the income used to calculate the payment from is reduced by 89 Euros/month.

For a family of 4 (2 children) and a monthly income of 2,000 Euros the payment is:

$$0.079 \times (2,000 - 1,344) = 51.82 \text{ Euros/month/child.}$$

Payment for two children is $2 \times 51.82 = 103.65$ Euros/month.

The maximum payment for the youngest child is 200 Euros/month, for a second child it is 180 Euros/month. For further children the maximum payment is 20% of the maximum rate for the youngest child, i.e. 40 Euros a month.

The calculation runs in this way: The payment per child is calculated. This payment is compared with the maximum for the youngest, the second and 'further' children, and, if necessary, adjusted accordingly. 51.82 Euros/month is o.k. for the youngest and the second child. If the family has 3 children the monthly payment would be 44.79 Euro per child, fine for the youngest and the second child, but too high for the third (maximum 40 Euro for the third child).

Home care allowance. (model check).

As an alternative to public day care it is possible to receive a 'home care benefit' (hemvårdstød) in Finland. The benefit can be received from after the parental leave benefits stop until the child is 3 years old. It is a condition that the child does not attend public childcare.

The benefit is 252.28 Euros/month for the eligible child. If the child has siblings there is a benefit of 84.09 Euros/month for each child less than 3 years of age and 50.46 Euros/month for each child between 3 years and school age, 7 years. It is a condition that all children are cared for in the home.

It is usually one of the parents who take care of the children, but it may also be a relative. A family with 2 children, 2 and 5 years old, who are cared for in the home will receive $252.28 + 50.46 = 302.74$ Euros /month.

The family may also receive an income related supplement, which as a maximum is 168.19 Euros/month/family. The supplement is reduced in this way:

Family Size	ceiling for full supplement	taper	income when supplement is zero
2	1,160 E/M	11.5%	2,622.48 E/M
3	1,430 E/M	9.4%	3,219.21 E/M
4 and more	1,700 E/M	7.9%	3,828.93 E/M

Income is assumed to be gross income (o.k.).

If 'our' family has a monthly income of 2,000 Euros the supplement will be $168.19 - 0.079 \times (2,000 - 1,700) = 168.19 - 23.70 = 144.49$ Euros/month. The total benefit will be $302.74 + 144.49 = 447.23$ Euros/month.

It is possible for the municipality to augment the benefits.

The benefit is taxable income, and is taxed as other benefits.

Private care. (this will not be modelled).

Finland also has a second alternative to public day care, and this is private day care approved by the municipality. The parents pay someone approved to take care of their children and at the same time the carer receives a benefit, which presumably reduces the price the parents have to pay.

If an average price for private care can be found it will perhaps be possible to calculate a 'net price' for private childcare to be paid by the parents. The benefits received by the carer depend on the economy of the parents.

There is a benefit of 117.73 Euros/month/child and a supplement of max. 134.55 Euros/month/child. The supplement is tapered against income in exactly the same way as the supplement for home care.

A family with two children and a monthly income of 2,000 Euros/month will 'receive' $2 \times 117.73 = 235.46$ Euros/month in benefits. The supplements will be $134.55 - 0.079 \times (2,000 - 1,700) = 134.55 - 23.70 = 110.85$ Euros/month/child. The carer of the family's children will receive $235.46 + 2 \times 110.85 = 457.16$ Euros/month.

It is possible for the municipality to augment the benefits.

The benefits and supplements are taxable income for the carer.

Parental leave benefits. (to be implemented in the model).

The parental leave in Finland is composed in this way:

Mother: 105 weekdays (6 days a week)
Father: 18 + 12 weekdays
To share: 158 weekdays

Total: 281 + 12 weekdays

The mother has the right for 105 days of leave, the father can take his 18 days simultaneously. Then there are 158 days the parents can share. If the father takes 12 of his 18 days in the end of the parental leave he is entitled to 12 more days (marked +12 above).

The daily compensation is the same as for sickness benefits. It follows this schedule:

Base: annual gross income minus 4.8%.

For income in the interval 4,905 – 26,124 Euros: $0.7 \times \text{base}/300$.

For income in the interval 26,124 – 40,192 Euros: $60.96 + 0.4 \times (\text{base} - 26,124)/300$.

For income above 40,192 Euros: $79.72 + 0.25 \times (\text{base} - 40,192)/300$.

The minimum for the daily compensation is 11.45 Euros.

Parental leave benefits are taxable as other benefits.

It is not realistic to model full flexibility on the shared part of the leave, the following combinations after delivery are suggested (leave before delivery is assumed to be 24 days):

Single parent: $105+158-24=239$ days, 39.8 weeks

Couple (rounded to nearest $\frac{1}{2}$ week):

I Mother: $105+158-24=239$ days, 40 weeks, father $18+12=30$ days, 5 weeks

II Mother: $105-24=81$ days, $13\frac{1}{2}$ weeks, father $158+18+12=188$ days, $31\frac{1}{2}$ weeks.

In case I the mother gets the maximum leave and the father the minimum one. In case II it is the other way round. A common combination for all countries should also be applied.

Child benefits. (model check).

Child benefits in Finland are graduated according to the number of children. The benefits can be received from the age of 0 to 16, both ages included. The rates in 2003:

1. child:	90.00 Euros/month
2. child	110.50 Euros/month
3. child	131.00 Euros/month

- 4. child 151.50 Euros/month
- 5. and more 172.00 Euros per month

For single providers there is a supplement of 33.60 Euros/month per child.

The advance maintenance payment in Finland is 118.15 Euros/month (2005 rate, should be 2003). This is a guarantee payment to single providers.

Housing benefits. (model check).

Housing benefits in Finland depends on three factors:

1. Maximum number of m2 for specific family sizes.
2. Maximum housing costs per m2 depending on:
 - Age of dwelling (3 intervals)
 - Size of dwelling in m2 (7 intervals)
 - Location of dwelling (4 municipality groups)
 - Standard of dwelling (2 groups)
3. Own payment
 - Below an income limit depending on family size (lower limit) there is no own payment
 - Above an income limit depending on family size (upper limit) there is no housing benefits.
 - Between the two limits there is a positive own payment.

Ad 1. The maximum number of m2 for specific family sizes are:

Family size	1	2	3	4	5
Max m2:	37	57	77	90	105

The max m2 increases by 10 for each additional family member.

It is suggested that the m2 rent always is calculated with the max number of m2 for each specific family size.

Ad 2. The maximum housing costs per m2 per month are tabulated according to the mentioned criteria. It is possible to include the whole table in the model or to make a selection. An example for a new dwelling in municipality group I (Helsinki) with modern facilities (this is used in the model):

M2	36-45.9	46-60.9	61-80.9	> 81
Euros/m2	10.41	10.11	9.67	9.59

If the actual rent/m2 is lower than the max, the actual is used, if not the max rent/m2 is used.

Ad 3. The own payment is tabulated according to variation in income and family size. It is a very comprehensive table, which could be included in the model, but it would be easier to include the algorithm, which generates the table (has not been found). A table for municipality group I was implemented in the model. 90 Euros/month is deducted from the gross income/month in case of a single parent with one child.

When the applicable rent for housing benefits and the own payment have been calculated the housing benefits are calculated in this way:

$$\text{H.B.} = 0.8 \times (\text{applicable rent} - \text{own payment}).$$

Personal taxation (model check).

The base for state taxation is gross income minus a deduction for work related expenditures, max 590 Euros (it cannot be larger than the wage income and is only deducted from earned income, not transfers) and social contributions for mandatory pensions and unemployment insurance (the basic component). It will have to be examined if the work related expenditure also can be applied for parental leave benefits (it cannot).

Social security contributions:

Mandatory pensions: 4.60 % of gross wages.

Mandatory basic unemployment insurance: 0.20% of gross wages.

These contributions are not levied on transfer payments, here parental leave benefits.

Taxable income for state taxation:

Gross wage – work related expenditures (standard 590 Euros) – social contributions for mandatory pensions and unemployment insurance.

State tax:

Taxable income	tax at lower limit, Euros	tax in interval, %
11,600-14,400	8	12
14,400-20,000	344	16
20,000-31,200	1,240	22
31,200-55,200	3,704	28
over 55,200	10,424	35

Local tax:

The starting point is taxable income for state tax.

Earned income deduction: base is gross wage income and gross wage income – work related expenditures.

Build up phase: 40% of gross wage income between 2,500 Euros and 7,230 Euros and 14% of gross wage income above 7,230 Euros. Maximum deduction is 2,550 Euros.

Tapering phase: the earned income deduction, 2,550 Euros, is tapered by 3.5% of income (gross wages- work related expenditures) above 14,000 Euros.

Basic deduction: Maximum 1,480 Euros, but tapered by 20% of income (taxable income for state tax-earned income deduction) above 1,480 Euros. This deduction is tapered to zero at an income level of $1,480 + 1,480/.20 = 8,880$ Euros, a low income level.

The average local tax rate was 18.3% (check !) in 2003. This tax rate is applied to: taxable income for state tax- earned income deduction-basic deduction.

Contribution for health insurance: 1.5% of the same base as applied for local taxation.

Outstanding questions: Is it o.k. to use 300 pay days when the annual rate of income is calculated for parental leave benefits, or should it be 312 or a third number of days? The guaranteed advance maintenance payment for children should be in 2003 level.

Great Britain.

Child care. (model check).

I have not found any descriptions of 'Registered' and 'Approved' childcare, the only forms, which qualify for the child care element of the Working Tax Credit Scheme. A joint publication from the Department for Education and Skills and the Department for Work and Pensions (ISBN 1844780619) mentions an average price for childcare of 2.50 GBP per hour. For a 40 hours week this will be 100 GBP/week. This will be the rate applied here

Parental leave. (to be implemented in the model).

Statutory Maternity and Paternity Pay during parental leave is available in Great Britain on the condition that the parents have worked for the same employer for a certain length of time and have an income above the Lower Earnings Limit (LEL).

The mother can receive Statutory Maternity Pay for 26 weeks, and start to receive the benefit 11 weeks before delivery at the earliest. The benefits for the mother are 90% of the former gross income for the first 6 weeks, and 100 GBP/week for the remaining 20 weeks or 90% of the former gross income if this (the 90%) is lower than 100 GBP/week.

The father can receive Statutory Paternity Pay for 2 weeks. His leave has to be placed within 8 weeks after delivery. The benefits are 100 GBP/week or 90% of the former gross income if this (the 90%) is lower than 100 GBP/week.

The single parent has 22 weeks after delivery on the assumption of 4 weeks leave before delivery.

In the couple the mother has 22 weeks after delivery, the father has 2 weeks.

Statutory Maternity and Paternity Pay is taxable income and National Insurance Contributions are levied on the benefit if they are above the Primary threshold, cf. the section on personal taxation.

Child benefits. (model check).

Child benefits in Great Britain are paid on a weekly basis for children in the age group 0-15 (both ages included):

For the first child (the eldest): 16.05 GBP/week

For each other child : 10.75 GBP/week

Lone parents with protected rights will get 17.55 GBP/week for the first (eldest) child. Protected rights mean that child benefits were claimed for the first time before July 1998, indicating that the eldest children of lone parents younger than 5 years in the first half of 2003 will not receive the augmented rate but just the ordinary, 16.05 GBP/week in 2003. There is no guaranteed advance maintenance payment for children in Great Britain.

Child Tax Credit, CTC . (model check).

This scheme is a successor to the married tax allowance, which was replaced by the 'Children's Tax Credit' in 2001 and this again from April 2003 by the 'Child Tax Credit'.

The scheme provides benefits for families with children whether the families are working or not. The benefits have a family element, a baby element and a child element.

In 2003 the family element was 545 GBP (annual basis), one per family, the baby element was also 545 GBP and is paid in addition to the family element if there is a child under 1 year. The child element was 1,445 GBP (annual basis) and is paid for each child.

A single parent with a baby in 2003 would receive $545 + 545 + 1,445 = 2,535$ GBP in 'Child Tax Credit'.

The 'Child Tax Credit' is received for children from the age of 0 years to the first 1 September after the age of 16 years has been reached.

If the 'Child Tax Credit' is received alone, i.e. without the 'Working tax Credit', and the gross income is below 13,230 GBP (annual basis) there is no tapering. For income above that level the child element is tapered by 37%. The family element and the baby element are tapered by 6.67% for income above 50,000 GBP.

Working Tax Credit, WTC. (model check).

This scheme is for families working and with or without children. With children the work requirement is at least 16 hours/week for each person, without children the work requirement is at least 30 hours/week for each person. The working tax credit can be received together with the child tax credit.

The scheme has the following elements:

Basic element, one per family	1,525 GBP (annually)
Couple's and lone parent element, one per family	1,500 GBP (annually)
30 hour element, one per family	620 GBP (annually)
Child care element, 1 child	max 94.5 GBP/week
Child care element, 2 and more children	max 140 GBP/week

The 30 hour element is for persons working at least 30 hours/week. For families with children it is sufficient that the parents work for 30 hours/week combined.

WTC can also be received by persons participating in maternity leave (26 weeks, receiving Statutory Maternity Pay) or by persons participating in paternity leave (2 weeks, receiving Statutory Paternity Pay). These leave situations are considered to be work situations.

The childcare element is 70% of the costs for registered or approved day care with the stated ceilings. It will have to be checked whether the childcare element can be received in the situation when the family receives Statutory Maternity or Paternity Pay, e.g. for a second child while the first is in day care.

The working tax credit is tapered for income above 5,060 GBP (annual). This is also the threshold if the WTC is received together with the CTC. The taper is 37 percent. The sequence of the tapering is:

Basic element, couple's and lone parent element and 30 hour element (all WTC).

Childcare element (WTC)

Child element (CTC)

For income above 50,000 GBP (annual) the family element (CTC) and the baby element (CTC) are tapered. The taper is 6.67% of income above 50,000 GBP.

Housing benefits. (model check).

Housing benefits in Great Britain depends on three components, the 'eligible' rent, the 'applicable' amount and net income.

'Eligible' rent.

It is assumed here, that 'eligible' rent is equal to actual rent. This is not always the case, especially for singles younger than 25 years, who sometimes may accept a lower rent as basis for the calculation of housing benefits.

'Applicable' amount and earnings disregards.

The 'applicable' amount is the ceiling for your net income, if you want to receive unreduced housing benefits, here assumed to cover the actual rent. The applicable amount depends on the size and composition of the family. It has the following elements:

Personal allowances:

Single person over 25	54.65 GBP/week
Lone parent	54.65 GBP/week
Couple	85.75 GBP/week
Children (0-18 years)	38.50 GBP/week
Premiums	
Family premium	15.75 GBP/week

Lone parent	22.20 GBP/week (if claimed before April 1998, else 15.75)
Earnings disregards 1)	
Single	5.00 GBP/week
Couple	10.00 GBP/week
Lone parent	25.00 GBP/week

1) increased by 11.90 GBP/week if working hours are 30 or more

The 'effect' of children is from the personal allowances and for the lone parent also the family premium in the calculation of the 'applicable' amount.

Net income.

Net income is gross income minus social contributions (NICs) and personal taxation. Tax credits (CTC and WTC) are added as well as ordinary child benefits. The earnings disregards and a disregard for child care costs are subtracted and the result is called net income.

Housing benefits.

Housing benefits are calculated in this way:

H.B. = 'eligible' rent - .65 x (net income - 'applicable amount')

An example:

Assume a couple earning 5,200 GBP (annual basis) having two children (4 and 6 years old, no child care) and a rent of 2,700 GBP (annual basis). The couple works less than 30 hours.

Applicable amount: $52 \times 85.75 + 52 \times 2 \times 38.50 + 52 \times 15.75 = 9,282$ GBP

Net income: $\text{NIC} = 0.11 \times (5,200 - 52 \times 89) = 62.92$ GBP, $\text{Tax} = 0.10 \times (5,200 - 4,615) = 58.5$ GBP, $\text{Tax credits} = 545 + 2 \times 1,445 + 1,525 + 1,500 = 6,460$ GBP, $\text{Deduction} = 0.37 \times (5,200 - 5,060) = 51.80$ GBP, $\text{Child benefits} = 52 \times (16.05 + 10.75) = 1,393.60$ GBP. $\text{Earnings disregards} = 52 \times 10.00 = 520$ GBP.

Net income = $5,200 - 62.92 - 58.50 + 6,460 - 51.80 + 1,393.60 - 520 = 12,360.38$ GBP.

H.B. = $2,700 - 0.65 \times (12,360.38 - 9,282) = 2,700 - 2,000.95 = 699.05$ GBP

If child care costs are involved the child care element would be included in the WTC and the costs up to a maximum equal to that of the child care element would be deducted (child care disregard) in the calculation of net income.

Council Tax Benefits. (model check).

Council tax is levied on dwellings in Great Britain, whether they are rented or owned. The tax varies over the councils and over the 8 bands into which all buildings are classified according to their assessed value.

I have not succeeded in finding a pattern linking the council tax to the rent. Further work may result in such a link, which can then be used for modelling purposes. Another option is to leave this element out of the model, this is the present situation.

The Council Tax Benefit scheme is a kind of parallel scheme to Housing Benefits. The Council Tax replaces the 'eligible' rent. The 'applicable' amount and the 'net income' are calculated in exactly the same way as for housing benefits. The taper in the scheme is 20%, not 65% as in H.B.

If the Council Tax is known it is easy to calculate the Council Tax Benefit together with calculation of Housing Benefits.

Personal taxation. (model check)

Taxable income in Great Britain is calculated as gross income minus the personal allowance. For 2003-2004 (April 2003 to April 2004) the personal allowance is 4,615 GBP (annual basis) for non pensioners. This is the only standard allowance for families in their working ages. Spouses are taxed on an individual basis in Great Britain.

Taxable income = gross income – personal allowance (4,615 GBP).

Tax schedule: Taxable income is taxed stepwise according to this schedule:

Taxable income	Tax rate
0 – 1,960	10%
1,961-30,500	22%
> 30,500	40%

National insurance contributions (NIC):

Gross income /week	Contribution rate
89-595	11%
> 595	1%

NICs are levied on work related social benefits if these are above the Primary threshold, 89 GBP/week in 2003.

The taxes and the social contributions (NICs) are calculated independently of each other. The tax credits in the British system are dealt with in relation to the programmes specifying the tax credits, cf. the sections on Child Tax Credit and Working Tax Credit.

Outstanding questions: Can the child care element of WTC be received at the same time as parental leave benefits? Council tax is not included in the model, ideally it should be.

Germany.

Public child care (model check)

The Kindergarten-coverage for children at the age of 3-6 years is more than 90 pct. The coverage for small children between 0 and 3 years differs a lot across the country. The coverage for small children in the new Länder is 37 pct. In the old Länder it is 2.8 pct.

The prices for day care differ considerably across the country. Often each institution has its own prices and decides for itself whether the income of the family should be taken into account and whether there should be a discount for siblings. We have selected a model, which (like the original OECD-model) reflects child care in the state of Nordrhein-Westfalen, as our base. In this model the prices for day care are income related and the family does only pay for one child.

The model we have used is this:

Annual Income	Parents payment/month	
	Kindergarten 3-6 years	Krippe-children 0-3 years
Up to 12271	0	0
Up to 24542	$26.08+15.85 = 41.93$	68.00
Up to 36813	$44.48+26.08 = 70.56$	141.12
Up to 49084	$73.11+41.93 = 115.04$	208.61
Up to 61355	$115.04+62.89 = 177.93$	276.61
Over 61355	$151.34+83.85 = 235.19$	312.91

Note: The first amount in column 2 is for the care, the second is for the meal at noon. The total is comparable with full time rates for the other countries.

The annual income (column 1) concept used includes the following components relevant for this study:

Gross wage income.

Maintenance payments (unterhaltsvorschuss included).

Public benefits like parental leave benefits and housing benefits. Enhanced parental leave benefits (erziehungsgeld) and child benefits (kindergeld) are not included.

From the sum of the above mentioned components the tax allowances (freibeträge) for the third and further children are subtracted, assuming there are three or more children in the family.

The basic model is, as mentioned, the one for Nordrhein-Westfalen with the pay scale presented and payment for one child only.

(Landesamt für Statistik: Brandenburg, BaWü, NrW, Bayern

Publication: Statistische Ämter des Bundes und der Länder: Kindertagesbetreuung regional 2002, www.tageseinrichtungen.nrw.de, www.stadt-gengenbach.de, www.weidenstetten.de)

Tax allowance for child care costs.

If the parents can prove that their childcare costs exceed the sum of 1,548 euros per year, they can have an extra tax allowance, which is calculated this way for the couple:

Allowance = Childcare costs – 1,548 up to a maximum of 1500 euros.

For single parents the allowance is calculated this way:

Allowance = Childcare costs – 774 euros up to a maximum of 750 euros

If the single parent is receiving the advance maintenance payment (unterhaltsvorschuss), cf. the section on child benefits, the tax allowance is calculated as for the couple.

To get the allowance both parents must be working, as must the single parent. The children taken care of must be under the age of 14.

Parental leave. (to be implemented in the model).

Ordinary maternity leave (Mutterschaftsgeld), only for the mother.

Eligibility for maternity benefits (Mutterschaftsgeld) requires membership of the health insurance scheme for a certain time. Eligibility is assumed in the cases here. There is a maternity allowance (Entbindungsgeld) for mothers with no rights for maternity benefits.

The maternity leave is for 6 weeks prior to delivery and 8 weeks after, in total 14 weeks and only for the mother. The 6 weeks before delivery is interpreted just as the Danish 4 weeks, the proportion you do not take you lose.

The maternity benefit is 13 Euros per day, but this amount is ‘topped-up’ to the usual net wage by the employer. There is no maximum limit. The easy way to do this is just to apply the former net income already calculated in the model. (In addition to the ‘Mutterschaftsgeld’ the Bonn-based Federal Insurance Office grants the mother a one-off maternity allowance amounting to 210 euros, not included in the model.)

Taxation: The maternity benefit is not taxed (it is already a net income concept), but it is subject to ‘progression’ just as other net benefits are, e.g. unemployment benefits. This means that the net benefit is included when the tax rate of other income, e.g. wage income, is calculated. This is also the case for a couple applying the ‘splitting’ taxation method. In this case the tax rate of the working spouse is influenced by the maternity leave benefit of the other spouse.

Enhanced parental leave (Erziehungsgeld).

Erziehungsgeld can be paid to mothers/fathers who take care of children (until they become 2 years) themselves and do not work for more than 30 hours a week. Parents can choose a monthly benefit of 460 euros for one year (Budget) or 307 euros a month for two years (Regelbetrag). Only the regelbetrag will be modelled.

Erziehungsgeld is dependent on the parents’ income:

Income limits in the first 6 months (Regelbetrag and Budget): 51,130 euro net wage (annual basis) for couples and 38,350 euro net wage for lone parents. Families with income higher than these limits can not receive Erziehungsgeld.

Income limits from the 7th month of the child's life:

Regelbetrag: 16,470 euro net wage (annual basis) for couples and 13,498 euro net wage for lone parents. The income limits in 2003 are increased with 3,140 euros for each child already in the family (the newborn child does not change the limits). 4.2% of income above the income limits is withdrawn from the *erziehungsgeld*.

Income: The income concept used to calculate the '*Erziehungsgeld*' is a kind of '*Pauschalische*' net income. The gross wage is reduced by 27 %.

The income, which regulates the '*Erziehungsgeld*' in the first year (2003 rules), is expected income in the year of delivery. We assume that the child is born on January first, why the expected income is the working income of the spouse not receiving '*Erziehungsgeld*'. The '*Mutterschaftsgeld*' is not included in the regulating income. In the second year it is the expected income of that year which regulates the benefit. It is obvious that the time of the year the delivery takes place has a significant impact on the expected income of the year of delivery. This was changed in the 2004 legislation.

Erziehungsgeld is assumed to be tax free income just as social assistance.

Child benefits. (model check).

Child benefits (*kindergeld*) in Germany are received until the child reaches the age of 18 years. There are possibilities for prolongation of the benefit period in case of education etc.

The ordinary child benefits are tax credits, they have the following values both for couples and single parents:

1-3 children: 154 euros pr month ~1,848 Euros/child, annual basis

4 and more: 179 euros pr month ~2,148 Euros/child, annual basis

Advance child maintenance payment (*Unterhaltsvorschuss*) (to be included in model)

The advance maintenance payment comes to the assistance of single mothers and fathers if the other parent fails to make his/her maintenance payments. This benefit is paid for maximum 72 months.

- In the old federal länder:

$(111+122)/2=116.5$ euros per month for each child under 6 years and $(151+164)/2=157.5$ euros for each child between 6 and 11 years.

- In the new federal länder (not included in model):

$(97+106)/2=101.5$ euros per month for each child under 6 years and $(134+145)/2=139.5$ euros for each child between 6 and 11 years.

(Bundesministerium 2005: Overview of the standard benefits and tax concessions relevant to family policy and the amounts involved in the federal republic of Germany). Rates from '*Übersicht über das Sozialrecht 2003, 16 Familienleistungsausgleich*).

Tax credit alternative (model check)

As an alternative to the tax credit it is possible to apply tax allowances, if this is an advantage for the family. The tax allowances are:

Single parent: $1,824 + 1,080 = 2,904$ Euros/child, annual basis

Married couple (splitting taxation): $3,648 + 2,160 = 5,808$ Euros/child, annual basis.

To determine what is most advantageous for the family, the tax credits or the tax allowances, the following calculation is made:

The income tax of the family is calculated with and without using the tax allowance(s). If the difference between the two tax amounts is larger than the value of the tax credit(s), the allowance(s) is used; if not the tax credit(s) is used. This is the procedure for the couple.

For single parents it is a little more complicated: Each parent has $\frac{1}{2}$ of the allowance (Freibetrag). This is compared to $\frac{1}{2}$ of the child benefits (Kindergeld). If the tax value of the allowance ($\frac{1}{2}$) is larger than the child benefits ($\frac{1}{2}$) the single parent keeps his or her child benefits (1/1) and the tax is reduced by the difference between the allowance ($\frac{1}{2}$) and the child benefits ($\frac{1}{2}$).

If the single parent receives advanced maintenance payments for children (Unterhaltsvorschuss) the interpretation is that the other parent is not meeting his or her provider obligation in relation to the child. In this case the $\frac{1}{2}$ allowance is transferred to the single parent and the decision on child benefits or allowances is made in the same way as for couples (1/1 Kindergeld against 1/1 Freibetrag). This is the case implemented in the model.

Supplement for single parent:

Tax allowance of 2,340 Euros/family. This tax allowance does not enter the 'what is best' calculation just mentioned. Rate from OECD 'Taxing Wages', 2003.

Housing benefits (Wohngeld).

German housing benefits depend on the size of the family, the level of the rent and the family income. Each of the three components will be described in the following.

Family size.

For this study the size of the family is easily determined. It is a single, a single parent and her children, a married couple and a married couple and their children. Typically the family size is 1, 2 or 3 persons. The standard case is 1 child in the family, but this can be extended to more children, although not in all situations.

Rent.

The rent level in the model is calculated as 20 percent of the gross wage income of the family. This is the 'entry' rent, if it is not constrained, cf. below, for the housing benefit calculation.

In the German scheme there are ceilings (constraints) for the rent, which can enter the H.B. calculation. The ceilings depend on the standard of the dwelling (there are two categories) and when the dwelling was built (there are 3 age bands). The standard of the dwelling is only relevant for the oldest buildings. That leaves 4 categories according to standard and age of the building. OECD has selected dwellings built in the band January 1966 to January 1992 for the model. Our choice is

dwellings built after January 1992, but if focus is on H.B. more choices can be build into the model. Each region of Germany is divided into 6 rent levels (mietenstufe), and each 'stufe' has 4 maximum rent levels, one for each of 4 standard/age categories. OECD has selected mietenstufe III for the model. We select stufe VI, but if desired the model can be extended to cover all 6 'stufe'.

The family size is important for the maximum rent level. Each family size has $4 \times 6 = 24$ maximum rent levels. For a family of up to 6 persons the selected maximum rents are, for dwellings built after January 1992 and in 'stufe' VI:

	1	2	3	4	5	6
Max rent/month	370	455	540	630	715	805

The amounts are in EUR/month. These are the maximum rent levels to enter the housing benefit calculation in the model, as it is constructed now. If the actual rent (the 20 percent of gross wage income) is less than the maximum, it is the actual rent, which is applied. If it is the other way round it is the maximum rent, which is applied.

Income.

The income to enter the Wohngeld calculation is the family income. This is calculated from the individual income of each family member after deductions, cf. the following. The income sources are assumed to be wage income of the parents, Mutterschaftsgeld and Erziehungsgeld. An allowance related to the costs of earning this income is deducted. For wage income the standard allowance (used here) is 1,044 EUR on an annual basis for each wage earner in the family, 87 EUR on a monthly basis. For Mutterschaftsgeld and Erziehungsgeld it is assumed that there is no allowance. This allowance is deducted as the first step in calculation of the relevant income.

The next step is to reduce the income further according to payment of social contributions and taxes.

The basic deduction is 6%. It is for unemployment benefits and (assumed) Mutterschaftsgeld and Erziehungsgeld.

If the family member pays social contributions for health and care insurance or for pensions or pay taxes the deduction is 10%. In our case this will typically be for an old-age pensioner who always pays contributions for health and care insurance.

If the family member pays contributions for health and care and for pensions the deduction will be 20%. This is also the case if he or she pays taxes and contributions for health and care insurance or for pensions. In our case this will typically be for wage earners who pay the social contributions (health, care and pensions) but where the income is not high enough to pay taxes.

If the family member pays taxes as well as contributions for health, care and pensions the deduction is 30 %. This will typically be for wage earners where the income is high enough to pay taxes.

For a single parent receiving Unterhaltsvorschuss this income is included in the family income. The deduction for this benefit is 6%.

The individual incomes are added and they constitute the family income.

The last step is to deduct any disregards from the family income. In our case the relevant one is a Freibetrag for single parents. It is 50 EUR/month/child if the child is living with one of the parents (our case). It is a requirement that the single parent works or is under education.

For each family size, mietenstufe, and standard/age combination there is a maximum family income. If the actual income, adjusted in the described way, is higher than the corresponding maximum, there is no access to Wohngeld.

The maximum corrected family income for dwellings built after January 1992 in mietenstufe VI and for varying family size (1 to 6 persons) are:

	1	2	3	4	5	6
Max. income 830		1,140	1,390	1,830	2,100	2,370

The amounts are EUR/month for a family size of 1 to 6 persons.

We are now ready to calculate the Housing Benefits:

German Wohngeld (WG) is calculated according to this formula:

$$WG = M - (A + B \times M + C \times Y) \times Y$$

Where M is the monthly rent (actual or maximum) and Y is the adjusted monthly family income. A, B and C are coefficients with the following values according to family size (1 to 6 persons)

	1	2	3	4	5	6
A x E-2	6.3	5.7	5.5	4.7	4.2	3.7
B x E-4	7.963	5.761	5.176	3.945	3.483	3.269
C x E-5	9.102	6.431	3.250	2.325	2.151	1.519

An example: One person, Monthly rent 275 EUR, adjusted monthly family income 622.35 EUR.

$WG = 275 - (0.063 + 0.0007963 \times 275 + 0.00009102 \times 622.35) \times 622.35 = 64.3$ EUR/month. Using the table the result is 63.0 EUR/month.

Taxation (model check).

Personal taxation will be documented here in the simplest way possible and will only include components relevant for the model. Only taxation of couples according to the 'splitting method'. Will be mentioned here.

Social contributions.

Social contributions in Germany are only levied on wage income. There are 4 mandatory schemes, i.e. Rentenversicherung, Krankenversicherung, Arbeitslosenversicherung and Pflegeversicherung. The 2003 contribution rates for the employee for these 4 schemes are:

Rentenversicherung: 9.75 percent of the gross wage up to 61,200 EUR (annual basis).

Krankenversicherung: 7.15 percent of the gross wage up to 41,400 EUR (annual basis).

Arbeitslosenversicherung: 3.25 percent of the gross wage up to 61,200 EUR (annual basis).

Pflegeversicherung: 0.85 percent of the gross wage up to 41,400 EUR (annual basis).

No additional contributions are paid for income above the mentioned ceilings.

The employer pays the same shares of the gross wage.

The social contributions for employees are paid from a minimum income, including a 'Gleitzone' up to the already mentioned ceilings, cf. above.

The minimum gross income below which no social contributions are paid is 400 EUR/month. From April 1 2003 a 'Gleitzone' was introduced. In this 'Gleitzone' the social contributions paid by the employee increases gradually (i.e. linearly) from 4.15 percent of the gross wage to full contribution rate, i.e. 21 percent of the gross wage, which is reached at an income of 800 EUR/month. The contribution paid by the employee is calculated in four steps:

1. Base for the calculation. F is a factor calculated as the ratio between the contribution rate for 'low employment', i.e. 25 percent, and the usual contribution rate, i.e. 42 percent.

$$\text{Base} = F \times 400 + (2 - F) \times (W - 400)$$

Where W is the gross wage income.

2. Total contribution in the zone.

$$\text{Contribution} = \text{base} \times \text{usual contribution rate.}$$

3. Employer's share.

$$\text{Empl1} = 0.5 \times \text{usual contribution rate} \times W$$

4. Employee's share.

$$\text{Empl2} = \text{Contribution} - \text{Empl1}$$

An example:

$$W = 600 \text{ Eur/month}$$

$$\text{Base} = 0.5952 \times 400 + (2 - 0.5952) \times (600 - 400) = 519.04 \text{ Eur.}$$

Contribution= $519.04 \times 0.42 = 218.00$ Eur.

Empl01= $0.21 \times 600 = 126.00$ Eur.

Empl02= $218.00 - 126.00 = 92.00$ Eur.

In this study we only calculate on an annual basis and it is assumed that the 'Gleitzone' is for income for the whole year of 2003. In this way the contributions paid by employees in the income interval 400-800 EUR/months are somewhat underestimated.

Allowances.

The contributions paid by employees are reducing the income to be taxed in this way:

1st step.

Default: 3,068 EUR

Minus 16 percent of the gross wage

Deduction step 1 (if negative the deduction is = 0)

2nd step

Actual contributions paid

Minus deduction from step 1

Deduction step 2 (maximum 1,334 EUR)

3rd step

Actual contributions paid

Minus deductions from step 1 and 2

Result/2 = deduction step 3 (maximum 667 EUR)

Total deduction from social contributions: Deduction step 1 + deduction step 2 + deduction step 3.

For a married couple the default amount and the maximum deductions are doubled. The 16 percent is of the combined gross wage, and the actual contributions paid are the combined contributions paid by the spouses.

The basic personal allowance is built into the tax schedule, it was 7,235 EUR in 2003 (it should not be deducted in the calculation of taxable income).

The standard work related allowance is 1,044 EUR for each person working.
There are special tax credits/allowances for children, cf. later.

Single parents have an allowance of 2,340 EUR in 2003.

The standard allowance for church taxes was 36 EUR, 72 EUR for a married couple. This allowance is used here.

Taxable income.

Taxable income is calculated as: Gross income minus relevant allowances (not including the basic allowance).

Before entering the tax calculation the taxable income is rounded down to an amount divisible by 36. If rounded down 18 EUR is added. If the taxable income is divisible by 36 in the first place no further corrections are made.

Taxes.

The tax schedule is formula based. In the following X denotes the taxable income. Two parameters need to be calculated: $Y = (X - 7,200)/10,000$ and $Z = (X - 9,216)/10,000$.

Taxes = 0 for X in the interval 0 – 7,235 EUR.

Taxes = $(768.85 \times Y + 1,900) \times Y$ for X in the interval 7,236-9,251 EUR.

Taxes = $(278.65 \times Z + 2,300) \times Z + 432$ for X in the interval 9,252 – 55,007 EUR.

Taxes = $0.485 \times X - 9,872$ for X larger than 55,008 EUR.

For a married couple the tax is calculated for ½ of the combined taxable income of the spouses. The tax is calculated and then multiplied by 2. This is taxation according to the splitting method.

The solidarity surcharge is calculated as 5.5 percent of the taxes, calculated as described above. There are no solidarity surcharge for taxes below 972 EUR for a single 1,944 for a married couple. When the taxes increase above the mentioned limits the solidarity surcharge is phased in by 20 percent of the taxes above the limits until this surcharge equals 5.5 percent of the total taxes (disregarding the limits). Thereafter the 5.5 percent surcharge takes over.

Tax credits and tax allowances for children.

Child benefits in Germany usually are fixed tax credits and then of no consequence for marginal taxation.

The tax credits may, however, be replaced by tax allowances if this is of advantage for the family. The tax allowance is 5,808 EUR for each child. If the single parent receives 'Unterhaltsvorschuss', and it is the assumption here, the tax allowance is equal to that for the married couple, 5,808 EUR in 2003.

The calculation runs like this: The taxes (not including the solidarity surcharge) are calculated with and without the tax allowances. If the difference in taxes between these two calculations is larger than the tax credits, these are replaced by the tax allowances. Isolated this will decrease the marginal tax rates with increasing income.

There are alternative ways of implementing this. One way of doing it is the already mentioned, i.e. by a complete replacement, the constant child benefits (tax credits) are replaced by a varying tax reduction not immediately visible. An alternative way could be to keep the tax credits and reduce the taxes by the difference between the tax value of the tax allowances and the tax credits. A third way is to let the total tax value of the allowance represent the child benefits. For the moment it is the first and the last mentioned options, which are implemented.

The single parent allowance is not included in the 'what is best' calculation.

It should be noted, that the solidarity surcharge for families with children is always calculated on basis of taxes where the tax allowance for children has been applied.

Outstanding questions: None.

Appendix.

Assumptions for child care packages.

Day care: Day care for children is assumed to be on a full time basis. The rates the parents pay for day care are constructed according to this assumption. It will be difficult to get information on rates for typical part time care, but may, anyhow, be attempted.

Parental leave: It is assumed that either the mother or the father (for a short while may be both) takes care of the children on a full time basis. Part time is possible in the Nordic countries, but is ruled out here. Same assumption for 'follow on' schemes, kontantstønad in Norway and hemvård in Finland.

Income: It is assumed that all income is earned on a full time basis. This is obviously not realistic at low income levels in the Nordic countries, where incomes below approx. 0.6 APW on a full time basis are rare.

The main problem with the full time assumption seems to be that the flat rate social contributions in the Danish case are exaggerated by being 100% instead of 66.67%, as they would be in case of part time work. Calculation of Danish parental leave benefits could also be wrong because fewer hours at a high hourly wage rate will not necessarily give the same result as more hours (full time) at a lower hourly wage rate due to the low cap in the Danish scheme. As I see it we might reconsider the assumption on full time work at least in the Danish case.

Income is either wage income or parental leave benefits or a mix of the two.

Income concept: The results of the calculations by the models are presented in graphic form according to this schedule:

	Gross income
Minus	Personal tax and social contributions
Plus	Child benefits
Minus	Payment for childcare
Minus	Net housing costs

Family purse income concept

Net housing costs requires an assumption concerning housing costs. Here it is rent and the rent is always assumed to be 20% of the gross wage of the family when it is working. This is a very simple assumption, but it allows variation of housing costs according to variation in income level. OECD always uses 20% of the gross wage of the 100% APW (Benefits and Incentives, an annual publication by OECD).

The family purse income concept reflects disposable income after costs for day care and housing, more or less fixed costs at least in the short term. OECD does not subtract gross housing costs (but add housing benefits) in their disposable income concept. The family purse concept seems to reflect what is left for consumption and savings after fixed costs in a better way than the OECD disposable income concept.

Age: The age of the children can vary freely from 0 to school age. There are no specific assumptions concerning the age of the parents, but they could be in the age bracket 25-35 years. This is of importance in the Swedish case where young families without children can receive housing benefits, but 'not-young' families cannot. The standard reference in the calculations is to a family without children.

