SUMMARY  The number of births as a proportion of the population has been declining in Europe since the late 19th century. In the past decade, fertility rates reached very low levels in many Member States (MS) of the European Union (EU), well below replacement levels. Low rates imply that, without migration or increased longevity, European populations will shrink.

Smaller populations may bring benefits in reducing the consumption of natural resources and society’s impact on the environment. However a society with fewer younger workers and a larger proportion of older people poses problems for economic growth and the maintenance of current social welfare systems such as pensions and healthcare. Many EU MS have policies in place that promote fertility and help people achieve the number of children that they desire.

Policy options include family-oriented policies such as financial transfers and tax breaks for parents with children, child-related leave and provision of childcare. They can also extend to a variety of measures that help with gender equality, reconciliation of work and family life or finding affordable housing. While experts generally feel that family-oriented measures can encourage women to have more children, these policies are costly and their effect on fertility may in some cases be unclear or weak.

In this briefing:
- Demographic changes in the EU
- Causes of changes in fertility
- Consequences
- Policy options
- European Parliament position
- Further reading
- Annex

Demographic changes in the EU

Europe and other parts of the developed world have been undergoing a ‘demographic transition’ since the 19th century. Falling mortality rates due to improvements in food supply and public health in the 1800s were followed at the end of that century by a steady decline in birth rates. This decline was interrupted after the Second World War by a ‘baby boom’, but since the 1970s it has resumed or even become steeper in most industrialised countries.

Fig. 1 - Average crude birth rates for selected MS¹

At the beginning of this century, fertility levels in Europe were at very low levels. A period total fertility rate (TFR) of 2.1 is the rate needed to keep the population size constant, all other factors equal.
Measuring fertility

The common measure of fertility is the **period total fertility rate** (TFR). The TFR is the number of children that a hypothetical woman would have throughout her childbearing years, calculated by summing the age-specific birth rates of all women in the reference year. (The age-specific birth rate means the average number of children born to women of a given age in the reference year.) Decisions by women to delay having children (currently the case in the EU) can lower the TFR via a ‘tempo effect’, even though in the long run, the delay may not change the total number of children those women will have.

For this reason, TFR is sometimes compared with **cohort fertility rate** (CFR), a longitudinal measure of the average number of births a woman from a particular age cohort really has over her reproductive life cycle. CFR is substantially higher than the TFR when women are having children later in their lives. However CFR can only be computed for women who have completed their child-bearing years, so it does not reflect the current behaviour of younger women. A third measure, the **crude birth rate** (the real number of live births in a year per 1 000 inhabitants), is often used when other data are not available.

In 2002, TFR was only 1.46 for the EU-27 as a whole and in a number of MS (Spain, Greece, Italy and eight of the MS that joined the EU after 2004) it fell below 1.3 to ‘lowest-low’ level. (At that rate, assuming no other changes, the population of Europe would shrink from over 500 to 120 million in one century). Some researchers argued that such a low TFR might push countries into a ‘fertility trap’ where lower fertility leads to ever decreasing expectations of family size, and population ageing creates ever more barriers to having children.

However since 2002, TFR has risen in all MS except Cyprus, Luxembourg and Portugal. In real terms, 5.2 million children were born in the EU in 2011, below the roughly 7.5 million born per year in the 1960s, but above the 5 million born in 2002. TFR remains below replacement levels in all EU MS (1.57 for the EU as a whole), but this low TFR may be due in part to the transitory effect of women delaying having children (see box). A 2013 study estimating an alternative measure, cohort fertility rate (CFR), concluded that actual births will likely be above the numbers suggested by current TFR levels, bringing many MS closer to, though still below, true replacement level.

Nevertheless concerns remain. According to a projection from the European Commission, which assumes that fertility levels converge across MS to relatively high rates, without migration the current EU population of nearly 504 million will shrink to 492 million in 2030 and 467 million in 2045. The declining number of young people and increasing longevity will also mean that society will ‘age’ rapidly. Today there is roughly one person over 65 for every four people of working age; in 2050, there will be one for every two.

Causes of changes in fertility

Fertility is a complex phenomenon and there are no simple explanations for long-term changes in fertility levels. Various suggestions have been made, including urbanisation, increases in women’s status and activities, and the higher cost of modern education which leads parents to invest in ‘child quality’ rather than quantity.

Additional suggested causes for the more recent decline since the 1970s include:

- Changes in personal values that emphasise self-realisation and freedom from traditional authorities
- State pension systems that mean that the elderly do not need the support of their own children
- Women’s increasing participation in the workforce
- Modern contraceptive methods (though
most experts feel that contraception serves primarily to time childbirth rather than to reduce family size.

- In Central/Eastern Europe, uncertainty about the future caused by the collapse of socialist regimes in the early 1990s.

The effects of the economic crisis
Most researchers now agree that periods of recession and high unemployment most commonly result in lower TFR. The effect is relatively small (up to 5%) and is largely caused by women deciding to postpone having children, so a short recession may not change the number of children they eventually have. However if economic difficulties persist, a permanent effect may occur as opportunities to have children are foregone.

These research findings are consistent with results seen in the EU between 2008 and 2011 (the latest year for which figures are available), when TFR rose by more than 1% in four MS, fell by more than 1% in 18 MS and stagnated in the rest. For the EU as a whole, TFR dropped by almost 2% from 1.60 to 1.57. In the same period, the average age of women at childbirth increased in all MS and by 0.3 years overall. Decreased fertility rates (or in some cases, slower rates of increase) were more pronounced for women in the countries hardest hit by the recession.

Consequences
Though the effects of a smaller population will depend on many factors and are difficult to predict, some outcomes are likely. A smaller population may have beneficial effects through using fewer natural resources and causing less environmental change; on the other hand, it may have negative effects on minority languages and cultures or on the political influence of the EU in the world. However the main concerns about lower fertility are economic and social.

Lower fertility rates mean a smaller working-age population (projected to decline 14% between 2010 and 2060). Experts agree that, in the absence of substantial increases in productivity, this will probably lead to less production and therefore a slowdown in economic growth. Over the long term, per capita income will decline and living standards will be lower. Savings may decline and asset prices drop. It may become increasingly hard to find highly skilled workers. Innovation (higher where large populations are concentrated) may fall off.

However the most serious problems will arise because society will ‘age’ rapidly as the proportion of young workers declines. Most social welfare systems such as pensions, healthcare and long-term care are largely financed on the ‘pay as you go’ principle, where benefits are paid out of current contributions made by, or on behalf of, the working population. If the number of workers decreases, contributions will fall, and governments will face the prospect of high deficits, steep rises in taxes and social contributions or large cutbacks in benefits. Social cohesion could suffer as younger generations bear an increasingly heavily burden of support for their elders.

Fig. 2 - Total fertility rates; MS view, policy, 2011

Source: TFR figures, Eurostat, 2013; MS views as reported to UN/DESA, 2011
MS (which have the main responsibility for social policy in the EU) are aware of these potential problems: almost two thirds of MS believe that population growth is too low; all consider that the ageing population is a major concern. At the same time, in the EU about 30% of men and women aged 40 or above stop having children before they reach their declared ideal family size. This ‘fertility gap’ indicates there are barriers to having children. More than four fifths of MS have policies to promote fertility.

Policy options

Having children is a personal decision, but family policies in MS provide the context in which those decisions are taken. Many family policies have other goals, such as reducing child poverty, improving child education or encouraging participation of women in the workforce. However they may also have a significant effect on fertility.

Evaluating policies

In evaluating policy options, it is important to keep in mind that even experts have only an imperfect understanding of the reasons underlying fertility decisions. Some remain sceptical that government policies can successfully influence fertility; others even question whether measures are necessary or intervention is wise given the high cost of most of these social policies.

Proving the effectiveness of a particular measure is difficult, given complex social environments and different welfare systems in EU MS. Studies frequently point to contradictory results or only weak effects. Effects on the final number of children are often difficult to distinguish from changes in TFR due to timing of births.

Financial incentives

Cash transfers are meant to offset some of the direct costs of having children. A child bonus is paid out to parents once at the time of birth; a child or family allowance is paid on a continuing basis until the child reaches a given age (usually 16 to 18 years but often later if the child is still in education). The amounts paid per child may rise for second or subsequent children or with the age of the child. More than half of MS grant basic child allowances to all, whereas others set an income ceiling above which the allowance is not payable, or gradually reduce the amount as family income rises. The administration of these direct payments can be costly, but if they are paid to the mother it is more likely that the money will be spent directly on the child (important for reducing child poverty, for example).

In addition to direct transfers, ongoing tax reductions or credits can be provided to families on the basis of the number and/or age of children. These may be less visible to parents than cash payments but are less expensive to administer. Tax reductions provide a greater financial incentive to higher income families paying tax at higher marginal rates; on the other hand, if the amounts of such tax measures are reduced as income rises or a benefit ceiling is fixed at relatively low income levels, the payments may only have impact on fertility decisions of lower earning parents.

Most, though not all, studies find that cash transfers or tax measures have a positive relation to fertility. Estimates of the magnitude of that effect vary widely however, perhaps because the effects are different on different population groups, or simply the fact that these financial transfers only cover a portion of the real costs of having children.

Child-related leave

Maternity or paternity leave is time off work granted to mothers and fathers at or around the time of birth; a portion of this leave may be transferable from one parent to another. Parental leave involves time off to care for children after the immediate birth period. Eligibility for parental leave may extend over a number of years.
Leave policies determine the financial compensation parents will receive as well as the maximum duration of the leave. There is a wide variety of approaches across MS: depending on the type and extent of leave, parents may be paid based on different proportions of their earnings with various limits. For example, in the Czech Republic, maternity leave is paid at 70% of earnings, reduced for those earning more than €34 per day and with a ceiling of €1 300 per month. Parental leave in Italy can extend for ten months, of which only six months is paid, at 30% of salary.

The effects of the duration of maternity leave on fertility are unclear: some studies find that long leave (up to two years) has positive fertility effects, others a negative effect, and still others an insignificant one. It is less contested that long leave has a negative impact on female employment as women find it harder to return to work. A high level of benefits, even if for a shorter leave period, may be more important in influencing women to have more children.

Some evidence shows that women are more likely to have a subsequent child if fathers take paternity leave with the first child, but there is no proof that this leave is the cause. Nevertheless some MS have dedicated some amount of leave to fathers to encourage them to take a greater role in child care.

**Speed premium**

One unique leave policy is the so-called ‘speed premium’ introduced in Sweden in 1980s. This allows mothers to keep the same level of leave benefit they received for an earlier child if they have an additional child within 30 months. This has been shown to affect the timing of births, though the effect on ultimate family size is not clear.

**Cash for care**

Finland is often singled out for its policy to provide cash in lieu of the formal childcare entitlement to mothers who choose to look after their children under the age of three in the home. This is cited as a factor in Finland avoiding the decrease in TFR that Sweden suffered during the recession in both countries in the 1990s.

**Childcare provision**

The availability and affordability of formal childcare, especially for the youngest children, can make having children easier, particularly where both parents want to continue working. Many academic studies, as well as Eurostat, have noted a strong correlation between MS fertility rates and the provision of formal childcare and/or childcare enrolment rates. A German study focusing on expansion of childcare capacity found that a 10% increase in public childcare coverage created a 3.2% increase in TFR. Long opening hours for childcare facilities can also help to accommodate the different schedules of working parents.

Affordability of childcare is also important. Studies have found that a high cost of childcare is associated with lower fertility. Public spending on childcare is one way to make it affordable for parents: Denmark, Sweden, the UK, Finland and France all have high levels of public spending on childcare (including pre-primary care) as a percentage of GDP; they are also among the EU MS with the highest fertility rates.

Most studies find a strong positive relationship based on availability, enrolment rates or childcare spending; a number of researchers argue that childcare is the family policy with most influence on fertility. However some research indicates weaker effects, or effects limited to highly educated women or women giving birth for the first time. One study concluded that a 10% increase in childcare subsidy corresponded to a 0.4% increase in the actual number of children born.

**Other measures**

Women assume the greater part of household and childcare work; this greater burden is felt by some to be a possible reason for women deciding not to have (more) children. Various experts have identified gender equality as a significant
policy goal to promote fertility. Measures to encourage fathers to take on more childcare might have an effect on fertility.

Other measures that help reconcile working and family life can make women's lives easier and may encourage them to bear another child. Part-time work is the preferred option of many working mothers so the availability of part-time work, and the right to request it, can help women to avoid choosing between having children and accepting a full-time job. Flexible working hours and the ability to take short leave (e.g. to care for a sick child) are also important for parents. Research finds a weak but positive relationship between TFR and policies like these, which help to reconcile work and family life.

Affordable and available housing can encourage young people to leave their parents' home, form couples and establish their own families. Social housing programmes in some countries provide special support or privileged access to families with children. However, little research has been done on housing and its effects on fertility. Countries with high home ownership levels and low access to mortgages (such as Greece, Spain and Italy) appear to have low fertility, but cause and effect cannot be assumed.

Coordinated policies
Experts attribute, in part, the relative success of the Nordic countries and France in maintaining high fertility rates to the coordinated and consistent nature of those countries' policies. If the goal of promoting fertility informs family policy but also housing, gender, fiscal and employment policy, the effects (though perhaps individually weak) may be reinforced. Creating the expectation of comprehensive and continuous policy support to families in the future may be a key factor in encouraging men and women to have more children.

European Parliament position
The European Parliament has long recognised the importance of demographic change in the EU. As early as 2005, it called on MS to step up exchange of best practices, particularly with Nordic countries, where high levels of employment, affordable childcare and generous parental leave policies were found alongside some of the highest fertility levels in Europe (2005/2147(INI)). More recently it highlighted the role of affordable housing in helping young families have children (2010/2157(INI)), and recognised that immigration, which is volatile, was an uncertain solution to decreasing population growth (2008/2330(INI)). An EP intergroup discusses issues related to the family and the rights of the child.

Further reading
Towards a 'baby recession' in Europe / Eurostat, 2013

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http://www.library.ep.ec
http://libraryeuroparl.wordpress.com
## Annex

### Comparison of policies in selected MS

Four MS have been selected for comparison of social policies, one from each of the groupings of countries commonly described in research dealing with fertility and government policies: Sweden from the Nordic countries, Italy from the Southern European countries, Poland from the Central and Eastern European countries, and France from the (more heterogeneous) Continental countries.

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<th>Sweden</th>
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<tr>
<td><strong>Total fertility rate, 2011</strong></td>
<td>1.90</td>
<td>1.40</td>
<td>1.30</td>
<td>2.01</td>
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<tr>
<td><strong>Ideal number of children (mid-2000s)</strong></td>
<td>2.22</td>
<td>2.04</td>
<td>2.41</td>
<td>2.5</td>
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<td><strong>Total public spending, family benefits, 2009</strong></td>
<td>3.75% of GDP</td>
<td>1.58% of GDP</td>
<td>1.53% of GDP</td>
<td>3.98% GDP</td>
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<td><strong>Family allowances, 2009</strong></td>
<td>0.8% of GDP</td>
<td>0.4% of GDP</td>
<td>0.3% of GDP</td>
<td>1.1% of GDP</td>
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<td><strong>Child bonus, child or family allowances, 2012</strong></td>
<td>Child benefit is universal. Child allowance of about €122 per month for each child plus supplements for subsequent children (from €17 for the second child up to €145 for fifth and subsequent children). Payable up to 16 years of age. Another similar allowance is provided for children in upper secondary schools. Benefits are taxable.</td>
<td>Child allowance varies from €10 to €258 per child per month depending on parents’ earnings and number of family members. For example, a family with four members and an annual income below roughly €13,500 would receive the maximum benefit. With an income of about €26,000, the benefit would be about €125; with a family income over €72,000 no benefit would be paid. Payable until child is 18 years old. Benefit is taxable. Family allowance is increased for single parents. Families with three children are eligible for municipal support for 13 months.</td>
<td>Child bonus at birth is €243. Increased by the same amount if family per capita income does not exceed approx. €120 per month. Child allowance targets low-income families where per capita family income does not exceed approx. €120. Benefits range from €16 to €24 per child per month, depending on the age of the child. Paid until the child is 18 years old or until the child is 21 if in education. Supplement for single parents of between approx. €40 and €105 per month per family, depending on number of children and family per capita income.</td>
<td>Child bonus: at birth is €912 and is subject to means test. Basic allowance of €183 paid per month per child until age 3. Child raising allowance paid only after a second child is born, and then until age 20 as long as child earns no more than roughly half minimum income. Monthly allowances are €127 for two children, €289 for three children, plus €162 for each additional child. Supplements of €64 for children over 14. Supplement of €90 if child raised by single parent. Supplementary allowance of €165 per month is paid to families with more than three children and a low household income. Single parent allowance provides a single parent with minimum income which varies depending on number of children (€813 per month for a single parent with one child and no other income; €189 per additional child). Families also benefit from tax relief, based on civil status and number of children (greater relief for families with three or more children).</td>
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<td><strong>Child-related leave, 2012</strong></td>
<td>Mother and father together entitled to total of 16 months paid leave. Two months reserved for mother, two for father, and rest shareable (up to 30 days can be taken by each at the same time). Leave must be taken within 18 months after birth. Payment for 13 months at 80% of salary up to approximately €50,000 per year and three months at €21 per day. Gender equality bonus of €5.73 per day (up to a max. of €1,570 per child) if parents share leave evenly. Temporary parental benefit up to 120 days a year to care for a sick child under age of 12, paid at 80% earnings. Another person can receive this benefit to look after child of a single parent who has fallen ill.</td>
<td>Maternity leave for 20 weeks paid at 80% (public sector employees receive 100%). Can be taken starting four or eight weeks before the birth. Parental leave of up to ten months during first eight years of child's life. Six months are paid at 30% of salary for if the child is under 3 years of age; otherwise the leave is unpaid. Fathers that take three months of leave have rights to an additional month.</td>
<td>Maternity leave for 20 weeks paid at 100% of reference wage. Extendable by another six weeks. Paternity leave is two weeks. Parental leave can be taken for up to three years before the child reaches the age of 4. During two of those years, a flat monthly payment of approximately €100 is available for low-income families. Leave to look after a sick child under the age of 14 is allowed for a maximum of 60 days per year compensated at 80% of wage. Benefits are not subject to taxation.</td>
<td>Maternity leave covers equivalent of full salary for 16 weeks (26 weeks in the case of a third child). Paternity leave is 11 consecutive days within four months of the birth, paid at full salary. Most collective agreements specify leave duration and compensation to look after a sick child. (e.g. 14 days in the public sector).</td>
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<td><strong>Childcare and pre-primary education, 2009</strong></td>
<td>1.4% of GDP</td>
<td>0.7% of GDP</td>
<td>0.3% of GDP</td>
<td>1.1% of GDP</td>
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<td><strong>Childcare enrolment, 2008</strong></td>
<td>46.7% (0 to 2 year old) 91.1% (3 to 5 years old)</td>
<td>29.2% (0 to 2 year old) 97.4% (3 to 5 years old)</td>
<td>7.9% (0 to 2 year old) 47.3% (3 to 5 years old)</td>
<td>42.0% (0 to 2 year old) 99.9% (3 to 5 years old)</td>
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<td><strong>Childcare availability, 2012</strong></td>
<td>Public childcare guaranteed for all children. Long opening hours. 51% of children under 3 and 94% of children between 3 and 6 enrolled in formal care.</td>
<td>Formal childcare available to 22% of children under age of 3. 94% of other pre-school children</td>
<td>Lack of appropriate childcare facilities. 2% of children under 3 enrolled; 42% of children between three and school age. Currently reform programme being implemented to increase number of publicly funded childcare facilities.</td>
<td>Comprehensive system of childcare. Nurseries (crèches) for children 2 months to 3 years; fees depend on parental income. Nursery schools (maternelles) for children 3 years until school age; pre-school education is free. For both types of care and after school care, opening hours are long. Trained and registered ‘childminders’ will care for children in their home (providing 2/3 of care for under 3 year olds). Recent government initiatives to increase number of places.</td>
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<td><strong>Childcare allowances, 2012</strong></td>
<td>Pre-school for up to 15 hours per week is free for children between age 3 and 6. Other fees depend on parental income and number of children. Parental fees cover on average 11% of costs. Municipalities may offer allowance for children over the age of one but younger than three. Up to €344 per month but this amount is reduced by the value of publicly-funded childcare the child receives. Intended to increase opportunities for parents to stay at home and look after their children.</td>
<td>No special allowance.</td>
<td>Childcare allowance paid to parent who forgives work to look after a child provided family per capita income does not exceed 25% of average wage for previous year. Benefit is for 24 months. Payment is approx. €95 per month.</td>
<td>Cost of care below age 3 depends on family income. Pre-school education (from age 3 to school age) is free. Child education supplement is paid if one parent reduces working hours to look after a child under 3 years old; this rises to €570 per month if the parent gives up all employment and lesser amounts for part-time work. Amount reduced for 3 to 6 years old. Parents choosing care by a registered ‘childminder’ receive a monthly ‘childcare choice’ supplement depending on child's age and household income (between €170 and €450 for a single child under age 3). Social contributions are also covered for the caregiver. New school year allowance paid once a year dependent on means-testing (e.g. €290 for child 6 to 10 years.)</td>
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<tr>
<td><strong>Housing benefit, 2012</strong></td>
<td>Means-tested housing allowance for low-income families. Depends on housing cost, size of home and number of children. Threshold at which allowance is paid was lowered in 2012.</td>
<td>Regions set criteria based on income of the applicants and location. Priority given to people in bad living conditions, large families and people in forced cohabitation.</td>
<td>Preferential mortgage scheme to help middle-income families to buy a house or flat.</td>
<td>Housing benefit available dependent on rent and household income. (On average the amount granted is €210 per month.)</td>
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**Endnotes**

1 Various European MS are included in the average, starting in the first year for which data is available: Denmark, Finland, France, Sweden from 1800; Belgium, 1830; UK, 1838; Spain, 1858; Ireland, 1864; Portugal, 1886; Italy, Netherlands, 1900.

2 In all 20 EU MS for which data exists, from 2002 to 2011 the mean age of women at first child birth increased between 0.5 and 2.5 years. Special supplement on demographic trends, EU employment and social situation: quarterly review, March 2013, European Commission, 30 p.


4 For a discussion of earlier research that suggested high unemployment led to increased fertility, see The increasing importance of economic conditions on fertility / D. Örsal, J. Goldstein, 2010, 16 p.; Economic recession and fertility in the developed world / T. Sobotka, V. Skirbekk, D. Philipov, 2010, 36 p. See also Towards a 'baby recession' in Europe / Eurostat, 2013.


6 Policy options are also available to mitigate the effects of declining fertility, including increasing retirement age, indexing pension benefits to life expectancy, favouring contribution-based pension schemes, investing more in human capital or encouraging immigration to make up for fewer native-born workers. Discussion of these options is beyond the scope of this briefing.

7 Evaluations of different policies given here are based primarily on literature reviews found in Kalwij, op. cit.; Sobotka, Skirbekk, Philipov, op. cit.; Family policies in developed countries: a 'fertility-booster' with side-effects / O. Thevenon, A. Gauthier In: Community, Work & Family (2011) v. 14 n. 2, p. 197-216 (Available on EbscoHost); The costs of raising children and the effectiveness of policies to support parenthood in European countries: a literature review / M-T. Letablier et al., European Commission, 2009, 164 p. See also the conclusions of The impact of family policy packages on fertility trends in developed countries / A. Luci, O. Thévenon, INED, 2012, 60 p.

8 Fertility and social policy / J. Bradshaw, S. Attar-Schwartz In: Takayama, M Werding, op. cit.

9 Ibid.


13 Haan, Wrohlich, op. cit.; Sobotka, Skirbekk, Philipov, op. cit.