



*Demographic Research* a free, expedited, online journal  
of peer-reviewed research and commentary  
in the population sciences published by the  
Max Planck Institute for Demographic Research  
Doberaner Strasse 114 · D-18057 Rostock · GERMANY  
[www.demographic-research.org](http://www.demographic-research.org)

---

***DEMOGRAPHIC RESEARCH***

VOLUME 2, ARTICLE 3

PUBLISHED 15 MARCH 2000

[www.demographic-research.org/Volumes/Vol2/3/](http://www.demographic-research.org/Volumes/Vol2/3/)

DOI: 10.4054/DemRes.2000.2.3

DESCRIPTIVE FINDINGS

**New fertility trends in Norway**

**Trude Lappegård**

© 2000 Max-Planck-Gesellschaft.

## **New fertility trends in Norway**

**Trude Lappegård**<sup>1</sup>

### **Abstract**

Behind a stable and relatively high fertility level in Norway during the 1990s we find increasing differences in the pattern of fertility both in regard to the timing of the first childbirth and number of children born. In this paper, data from the Central Population Register in Norway are used to provide a review of recent fertility trends and discuss the consequences of education level on differences in fertility patterns. The paper will also provide some indication of aspects that will be dealt with in future projects.

---

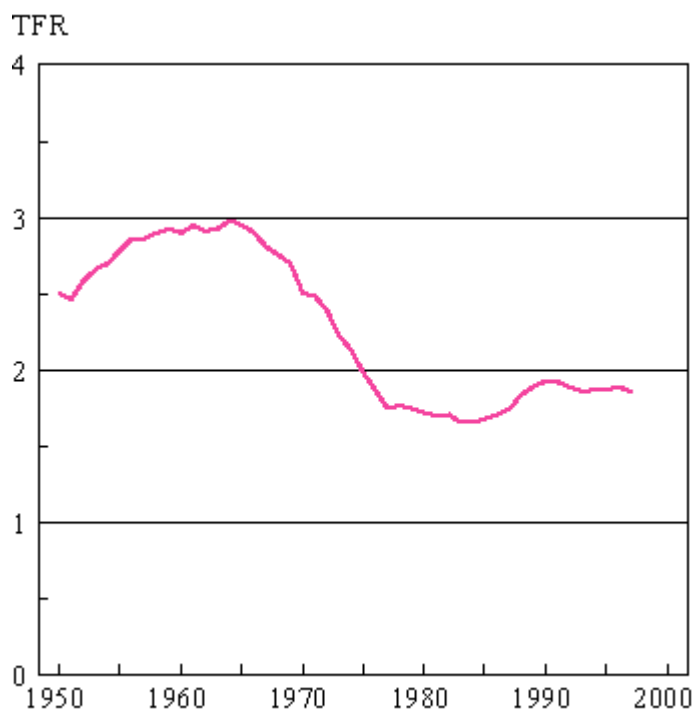
<sup>1</sup> Statistics Norway, Division for Social and Demographic Research;  
Oslo, Norway; Phone: +47 22864608; lap@ssb.no

## 1 Introduction

In recent decades fertility in Norway has gone through several significant changes. A simple way of measuring fertility levels and trends is to calculate period Total Fertility Rates (TFR) by summing age-specific fertility rates for each year of interest. Measured in this manner (Figure 1), Norway's TFR peaked around 1965 at almost 3.0 and then declined until around 1975.

**Figure 1:**

Total fertility rate 1950-1998



Source: Population Statistics, Statistics Norway

While fertility has fallen to unprecedented low levels in many industrialised countries since the 1980s, Norway has experienced a rise in fertility since that time. At the beginning of the 1990s the total fertility rate stabilised at not far below replacement level. The TFR is, however, too crude a measure of fertility to give accurate information about important features of childbearing trends. Behind TFR there can be substantial differences in fertility patterns, for example in timing the birth of the first child.

Analyses in this paper provide a review of recent fertility trends in Norway and intend to describe the changes in the pattern of fertility and family formation that have taken place in Norway in recent decades. The data for our analyses are derived from the maternity histories of complete female birth cohorts extracted from the Central Population Register in Norway. These biographies cover complete female birth cohorts after 1935 and immigrants arriving in the country after 1960 and through 1998. The paper is essentially descriptive and reports from work in progress. It does not intend to provide causal explanations or theoretical developments at this stage of analysis. However, through reflections on trends we will provide some indications and intimations on aspects that will be dealt with in future projects.

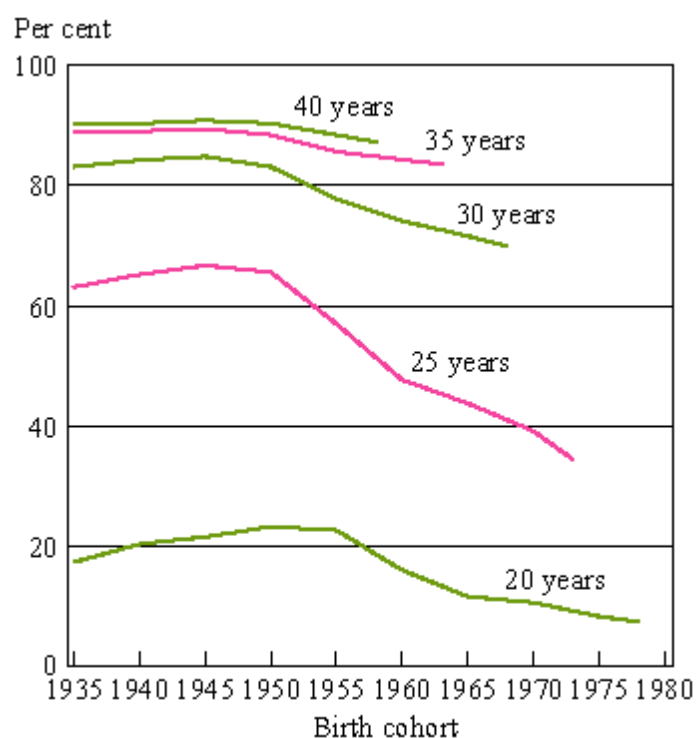
## 2 Trends in first childbirth

The fertility rates since the late 1960s reflect the considerable change in family establishment among post-WWII generations. Women born after WWII have in many significant areas had totally different opportunities than women born earlier. Free access to abortion and better contraceptives have made it a lot easier for women to choose *when* they want children and *how many*. Also, more education and participation in the labour force have given women greater economic independence. Other societal changes, such as increasing women's liberation and broader acceptance of cohabitation contribute to these changed opportunity structures.

There are significant changes in age at first childbirth. The proportions of women that have had their first child at different age levels are shown in Figure 2.

**Figure 2:**

Proportion first childbirth by age and birth cohort



Source: Population Statistics System, Statistics Norway

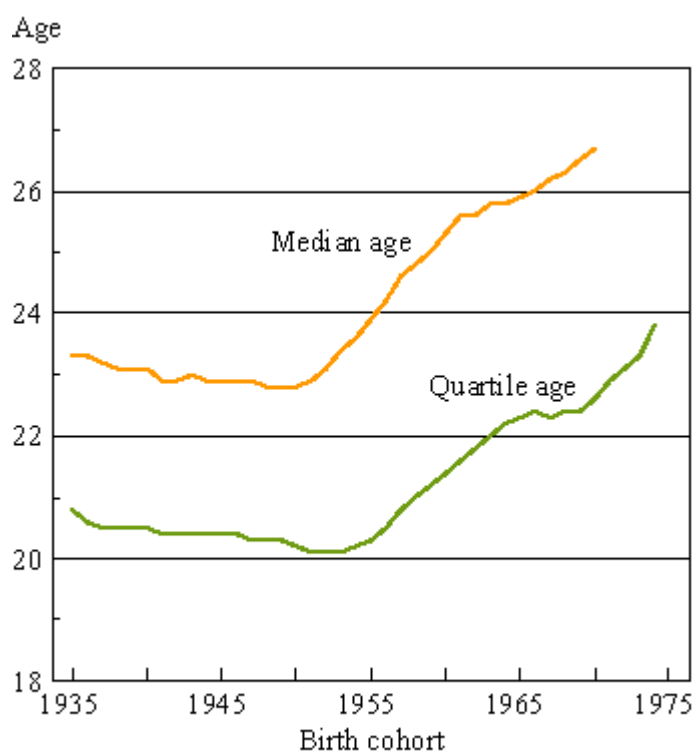
The figure shows an upward trend in age at entry into motherhood. For women born in 1950 the majority had given birth to their first child before they turned 25 and less than one fifth gave birth to their first child between ages 25 and 30. For women born in 1968, the proportion that had given birth at age 30 is almost at the same level as the proportion with children at age 25 among women born in 1950. At the same time, the proportion at age 25 had declined more than the proportion at age 30, and the proportion that gave birth for the first time between ages 25 and 30 had increased to more than one third. This illustrates a strong postponement of first childbirth among younger women in Norway. This postponement has been followed by an increasing number of births to women in their thirties. The proportion giving birth for the first time between the ages of 30 and 35 has increased from 5 per cent among the 1950 cohort to 10 per cent among those born ten years later. There is also an increasing but still small proportion with their first birth between 35 and 40 years.

The proportion of women giving birth for the first time as a teenager peaked among those born around 1950. For the 1950 cohort this proportion was 23 per cent and the corresponding proportion for the 1978 cohort was 8 per cent. The proportion of teenage mothers has remained at a stable low level during the 1990s [Note 1].

Another way of looking at these trends is through median and quartile age at first childbirth. This is shown in Figure 3.

**Figure 3:**

Median and quartile age at first childbirth by birth cohort



Source: Population Statistics System, Statistics Norway

Fifty per cent of the women born in 1950 had become mothers when they turned 22.8 years (median age). Among those born in 1970 the median age has increased to 26.7 years. Quartile age (age where one fourth of the cohort have become mothers) has also increased, but not at the same speed as median age. Quartile age among women born in 1950 was 20.2 years and 22.6 in

the 1970 cohort. Among women born in 1973 it has increased further to 23.3 years. The difference between quartile and median age has increased with almost two years from the 1950 to the 1970 cohort. There is a plateau over the cohorts born in the late 1960s in the curve for quartile age and a similar plateau for somewhat earlier birth cohorts in the curve for the median age. This happened in the late 1980s, at the same time as the total fertility rate started to increase. A possible explanation that hasn't been examined, is the start of an expansion in family reforms, such as the increase in child allowance, extended duration of paid leave at childbirth and the growth in number of kindergartens.

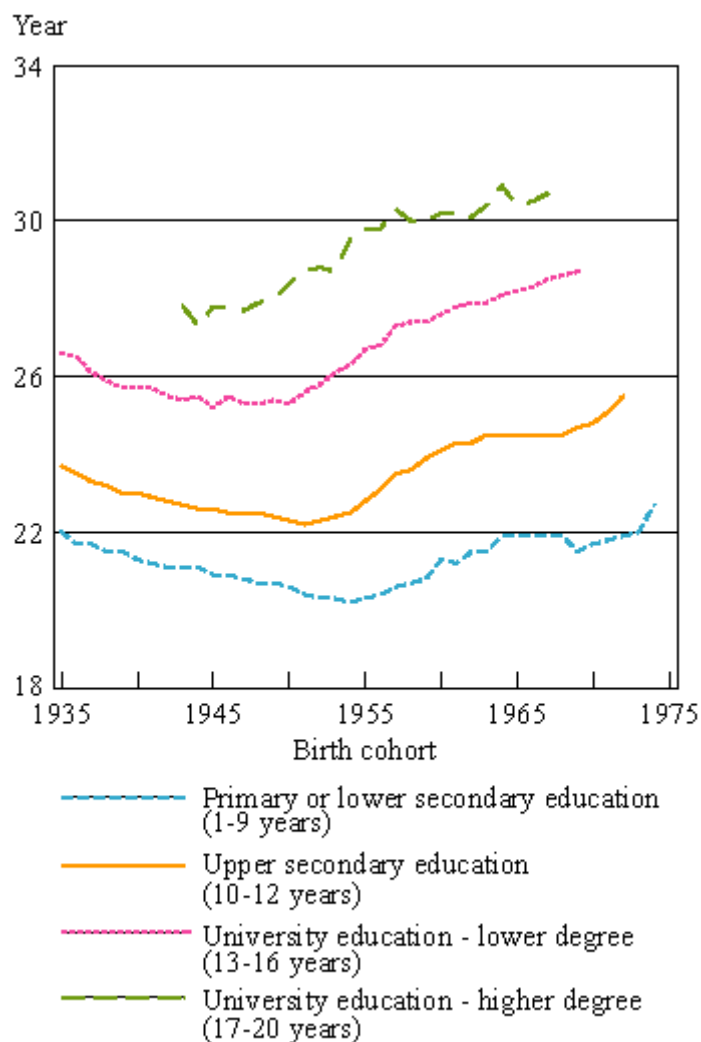
Postponement of first childbirth is more pronounced for some groups than others. When talking about women's way of living, a distinction between different generations is frequently made. Traditional patterns of fertility are typical for women in the cohorts from the 1930s to around mid 1950, while the new patterns characterise younger women. However, not all women follow new trends. Some women follow traditional patterns more closely than others which shows that women's lifestyles vary more today than they did a generation ago [1].

Education is a significant factor in analyses of women's fertility [2]. Postponement of first childbirth may be seen in connection with the sharp growth in the proportion of women with a higher education among younger women. We shall look closer into educational differences in the timing of the first childbirth among women of different generations. The proportion of women completing college or university has doubled since 1980 and in 1996 more than 20 per cent of all women over the age of 16 had a higher education. Among women aged 30-39, 30 per cent had completed college or university in 1996, while the proportion was 18 per cent in 1980 [3]. Median age at first childbirth by educational level is shown in Figure 4.



**Figure 4:**

Median age at first childbirth by birth cohort and educational level



Source: Population Statistics System and Educational Statistics Systems, Statistics Norway

Median age is increasing by education level. In all birth cohorts women with a lower education level become mothers earlier than women with a higher education. There has been a postponement of first childbirth in all education groups, but it started first among university-educated women with higher degrees. For them the postponement started among those born in 1945 and was more pronounced for women born until the late 1950s. For women with no

education beyond compulsory level median age started to increase first among women born in the mid-1950s.

The postponement of first childbirth has occurred at different paces and education has had an increased effect on the timing of first childbirth. Education induces differences in the timing of first childbirth, and these differences are increasing. Among women born in 1967 with no education beyond compulsory level median age was 21.9 years, while it was 30.7 years among university-educated women with higher degrees. Compared to women born a few decades earlier the difference in median age among those with lower education and those with the most education has increased. For instance median ages were respectively 20.6 years and 28.4 years among those born in 1950 in the two education groups.

### **3 Trends in childlessness**

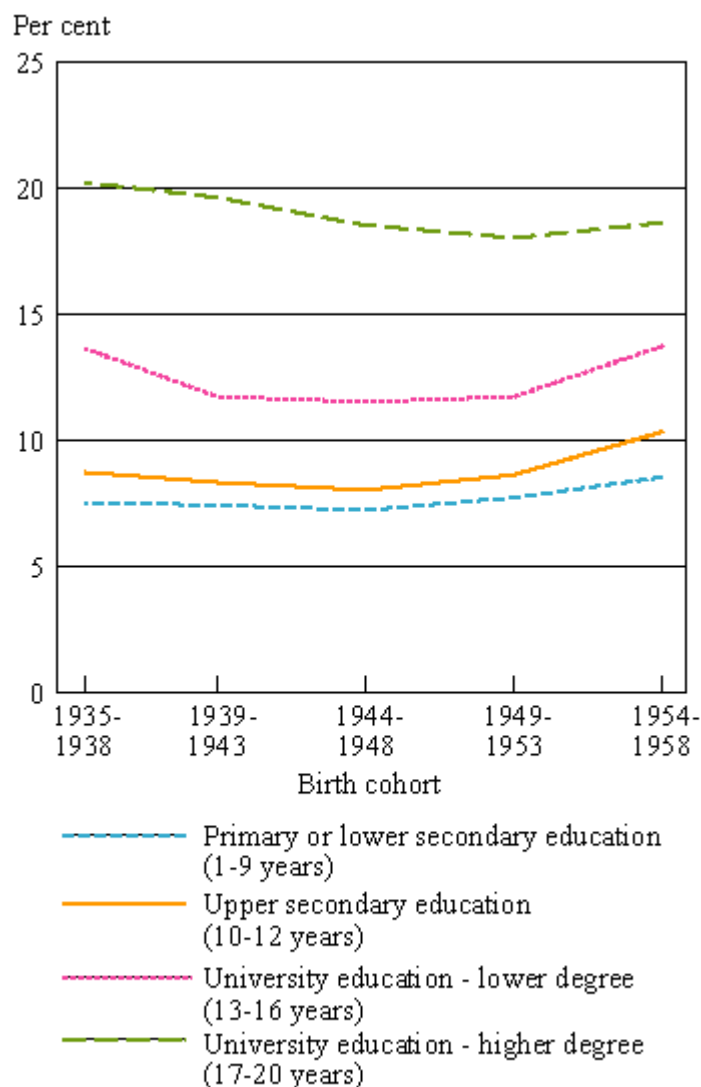
An interesting question is how a continued postponement of first childbirth will affect the number of women that remain childless. The first Norwegian cohorts that adopted new patterns of fertility, with postponement of first childbirth, were born early in the 1950s. For these women we observe a 10 per cent level of childlessness at the age of 45 (Table 1), which is very low by international standards.

#### **TABLE 1**

Today we can follow cohorts born until 1958 to age 40, of which 12.3 per cent were childless. It is still too early to draw a conclusion about the consequences of the new fertility pattern on childlessness in younger cohorts. Meanwhile, we can make some assumptions by looking at childlessness around the age 35. For the 1958 cohort 15.2 per cent were childless when they turned 35, while it was 16.5 per cent among the 1963 cohort. It is likely that some of these women born in 1963 will enter into motherhood in the years to come more frequently than their five-year-older sisters. However, the possibility of those younger cohorts ending their fertile period with a childless rate below 10 per cent, like women born between 1930 and 1950, seems very doubtful.

**Figure 5:**

Childlessness by birth cohort and education level



Source: Population Statistics System and Educational Statistics Systems, Statistics Norway

The proportion of childless women is highest among those at the highest education level. For women with a high-level university education born between 1954 and 1958, almost 19 per cent were childless at age 40. For women in the same cohorts with no education beyond compulsory level the proportion was less than 10 per cent. The proportion of childlessness has been relatively stable, but different, for women with different educational levels from the 1935 cohort to the 1958 cohort. We do, however, observe a slight convergence between educational

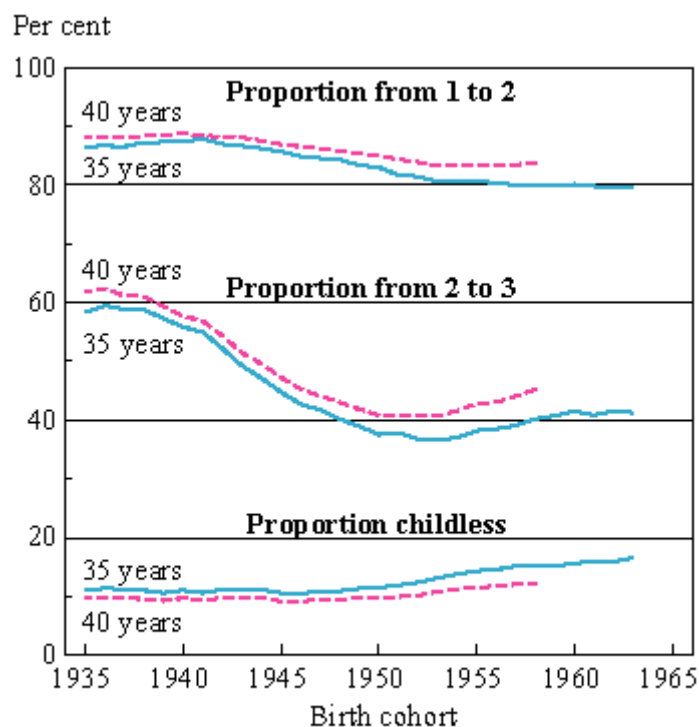
groups. The level of childlessness among women at the lowest educational level has increased among younger cohorts. Contradictory to this, younger cohorts at the highest educational level have a lower level of childlessness than we observe for cohorts born some decades ago. Even though more women get more education than before, the postponed pattern of first childbirth provides women the opportunity to establish themselves in the labour market before having children. There can be different explanations for the low level of childlessness among younger women with high degrees compared to older women at the same educational level. One explanation might be that changes in family policy in the 1990s were successful in making it easier to combine labour market participation with childcare. Another explanation is that women with a high university degree is a small group in all cohorts, but are probably more selected among the oldest generation than among today's young women.

## **4 Number of children born**

There is a pronounced trend towards larger variation in the number of children born. Although the proportion of women with one child is increasing (Table 1), it is still very common that Norwegian women with one child proceed to number two. Around 80 per cent of all mothers with one child still have another child (Figure 6). Among 35-year-olds the proportion of one-child mothers was lowest for the 1940 cohort (11.3 per cent) and highest for women born in 1963 (16.9 per cent) (Table 1). Postponement of first childbirth will lead to postponement of second childbirth. An increasing proportion of women entering motherhood in their early thirties will lead to an increasing proportion giving birth to their second child after the age of 35. The increasing proportion of one-child mothers must be seen in connection with postponement of first childbirth, and the fact that biological fecundity probably is declining with increasing age.

**Figure 6:**

Proportion childless, proportion of those with at least one child who proceeded to number two, and proportion of those with at least two children who proceeded to number three. Measured at cohort level at ages 35 and 40



Source: Population Statistics System, Statistics Norway

The most recent developments indicate a new trend towards an increased proportion with three or more children. However, almost half of the women born in 1935 had three or more children, and it is unlikely that we will reach this level again. For women born between 1935 and 1950 we observe a decreasing proportion of women having three or more children to around 30 per cent for women born in 1950, measured by age 40 (Table 1).

The proportion of women with at least two children that carried on to number three is shown in Figure 6. Measured at age 40 we find a proportion of around 60 per cent of those with at least two children in the oldest cohorts who also had at least one more child. For women born around 1950 this proportion had declined to around 40 per cent, while there was a slight but consistent increase in the proportion for the younger cohorts. By looking at women of age 35 we can follow the development for women born until 1963. Among mothers with two children, born

in 1953, 36.6 per cent had had their third child. For women born ten years later this proportion increased to 41.3 per cent.

To sum up, we can say that among mothers with two children there is an increasing trend towards having another child among younger cohorts, but simultaneously, the proportion who had three or more children among all women in each cohort is relative stable. This shows that there is no general trend among Norwegian women towards having many children, although this is the case for some groups, i.e. we are seeing increasing diversification.



## **5 Summary and guidelines for future projects**

Behind a stable and relatively high fertility level during the 1990s we find increasing differences in the pattern of fertility both in regard to the timing of the first childbirth and number of children born. Education differentiates increasingly between age at first childbirth. New forms of social inequality are emerging and old social dividing lines have been maintained. In Norwegian gender equality policy, education and labour force participation have been considered the main road to women's liberation. Attitudes towards women's labour force participation vary between social classes. The transition from traditional to modern patterns of fertility has not developed in parallel for all women. Increased gender equality has been the reality and ideal for many, but this modernisation of women's life does not involve all groups of women.

Nevertheless, the fact that women wish to participate in the labour market does not mean that they do not want children. The family institution is strongly embedded in the Norwegian society. Surveys indicate that women want a family, but that they also want to participate in the labour force. Generations of women have lived their lives influenced by different regimes of family policies. Younger female generations have grown up in a time when gender equality and new patterns of family formation have been established. From a life course perspective these women probably consider labour force participation as natural as child-raising.

An interesting hypothesis for future research is that family policy measures aimed at facilitating the combination of child raising and family life with occupational activity will have significant effects on fertility development. Family policy reforms have often been introduced as delayed responses to new family forms and practices in Norway. During the 1990s there has been a substantial expansion in family reforms. It is conceivable that a combination of child raising and family life with labour force participation has been facilitated through recent expansion of Norwegian family policies. Such a combination is also common for different groups of today's young women. Norwegian women have to a large extent developed a dual strategy towards employment and children, where they do not choose between employment and children, but choose both. Studies have shown that Norway has a high level of occupational sex segregation.

The public sector has through female-friendly working conditions been an attractive employer for women. In the light of these observations it would be interesting to look closer into the connection between fertility trends and choice of education and further choice of occupation.

## **6 Acknowledgement**

I gratefully acknowledge useful advice and suggestions on an earlier version on this paper from Professor Dr. Jan M. Hoem. I also wants to thank my colleagues Senior Research Fellow Kari Skrede and Director of Research Lars Østby for helpful comments and valuable support. I also wish to thanks several anonymous reviewers for their useful comments of this paper.

## **Notes**

1. Induced abortions among teenage women have also remained at a stable and low level during the 1990s. In 1990 there were 19.8 induced legal abortions per 1000 teenage women. The same proportion was 18.7 in 1998. For comparison, the proportion was 22.5 per 1000 teenagers in 1980. Source: Division for Health Statistics, Statistics Norway.

## References

1. Ellingsæter, A.L, T. Noack and M. Rønsen (1997): "Sosial ulikhet blant kvinner: Polarisering, utjevning eller status quo?", *Tidsskrift for samfunnsforskning*, 1, 33-69
2. Kravdal, Ø. (1992): "The emergence of a positive relation between education and third birth rates in Norway with supportive evidence from the United States ", *Population Studies* 46:459-475
3. Statistics Norway (1999a): *Aktuell utdanningsstatistikk*, nr. 1/99.

**Table 1:**Parity distribution and average number of children by age and cohort<sup>1</sup>

no. Age	Birth-cohort	Parity distribution (per cent)					Average of children
		0	1	2	3	4+	
20	1935	82.6	14.9	2.4	0.1	0.0	0.20
	1940	79.6	16.9	3.2	0.3	0.0	0.24
	1945	78.4	17.2	4.1	0.3	0.0	0.26
	1950	76.7	19.0	4.0	0.3	0.0	0.28
	1955	77.3	19.8	2.8	0.1	0.0	0.26
	1960	83.9	14.4	1.6	0.1	0.0	0.18
	1965	88.3	10.6	1.1	0.1	0.0	0.13
	1970	89.3	9.7	0.9	0.1	0.0	0.12
	1975	91.6	7.6	0.7	0.0	0.0	0.09
	1978	92.5	6.8	0.7	0.0	0.0	0.08
25	1935	36.9	31.2	24.2	6.4	1.3	1.04
	1940	34.8	28.5	26.4	8.1	2.2	1.14
	1945	33.3	29.4	27.3	8.2	1.8	1.16
	1950	34.4	32.0	27.4	5.4	0.7	1.06
	1955	43.0	30.7	22.8	3.2	0.4	0.87
	1960	52.3	27.6	17.3	2.6	0.3	0.71
	1965	56.2	27.0	14.2	2.3	0.3	0.63
	1970	60.8	24.7	12.4	1.9	0.3	0.56
	1973	65.5	22.1	10.7	1.5	0.2	0.49
30	1935	16.9	18.5	35.5	20.2	8.9	1.86
	1940	15.8	16.8	36.0	22.0	9.3	1.92
	1945	15.2	18.4	41.3	19.1	5.9	1.82
	1950	16.9	21.1	44.8	14.3	2.9	1.65
	1955	22.3	23.8	39.5	12.1	2.3	1.48
	1960	25.9	25.1	35.1	11.7	2.2	1.39
	1965	28.4	25.8	33.0	10.8	2.0	1.32
	1968	30.1	26.2	31.7	10.0	2.0	1.27
35	1935	11.2	11.9	32.0	26.8	18.1	2.29
	1940	11.0	11.3	34.2	28.0	15.4	2.26
	1945	10.6	12.8	42.2	25.2	9.1	2.09
	1950	11.6	15.0	45.8	21.5	6.0	1.95
	1955	14.4	16.5	42.7	21.0	5.4	1.86
	1960	15.7	16.7	39.6	22.1	5.9	1.86
	1963	16.5	16.9	39.1	21.7	5.8	1.83
40	1935	9.8	10.5	30.4	27.4	21.8	2.41
	1940	9.7	10.1	33.9	29.0	17.3	2.34
	1945	9.2	11.9	41.6	26.3	11.0	2.18
	1950	9.7	13.5	45.4	23.3	8.0	2.06
	1955	11.6	14.5	42.2	24.0	7.7	2.02
	1958	12.3	14.2	40.2	24.9	8.4	2.03
45	1935	9.6	10.4	30.4	27.4	22.2	2.42
	1940	9.5	10.1	33.7	29.1	17.6	2.35
	1945	9.0	11.8	41.5	26.4	11.3	2.19
	1950	9.4	13.3	45.4	23.5	8.4	2.08
	1953	10.4	14.6	44.1	23.0	7.8	2.03

<sup>1</sup> Women living in Norway by 31.12.1998  
Source: Population Statistics System, Statistics Norway