# Parenthood and Couples' Relative Earnings in Norway

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**Abstract**

With the advance of the gender revolution, income dynamics in couples are changing. Nonetheless, in most Western societies parenthood still promotes specialized gender roles. Utilizing Norwegian register data on all married and cohabiting couples born 1946 to 1989, we investigate possible changes in the associations between parenthood and within-couple inequality in earnings in the years 2005-2014. Precisely, using interactions and fixed effects models, we compare the development of within-couple gender gaps in earnings over time between childless couples and couples with children of different ages, and within couples before and after childbirth. Results showed that the gender gap in earnings in couples increased with the number of children and was most distinct among couples with children below six years. However, the association between parenthood and within-couple inequality in earnings was reduced across the study period, a development partly driven by a decreasing fatherhood premium evident from 2009 onwards. Not only women's, but also men's income development is now negatively affected by having young children in the household. Our findings thus indicate important changes in how men and women prioritize paid labour after a childbirth.

## Introduction

With the advance of the gender revolution (Goldscheider, Bernhardt, and Lappegård, 2015), the gender gap in paid and unpaid work in couples has been remarkably reduced in many Western countries. The Nordic countries with their well-developed policies supporting the combination of employment and childcare for men and women are often seen as ideal templates for promoting a gender equal dual-earner/dual-carer family model (Esping-Andersen, 2009). Correspondingly, several studies report a higher prevalence of equal-income couples in social-democratic than in conservative and liberal welfare states (Bianchi, Casper, and Peltola, 1999; Vitali and Mendola, 2014). Still, women on average earn less than their partner (Vitali and Arpino, 2016), and in such diverse countries as Sweden, Italy, France and the U.S., parenthood reinforces a traditional division of labour within the household (Anxo et al., 2011). A recent study even argues that most of today's remaining 15-20% gender pay gap is due to adjustments after the arrival of children (Kleven, Landais, and Søgaard, 2018).

Work-family policies supporting mothers' employment have been found to lessen the impact of children on gender differences in time allocation (Cooke and Baxter, 2010; Dribe and Stanfors, 2009; Gornick and Meyers, 2009), and increase women's share of earned household income (Sani, 2015; Stier and Mandel, 2009). Also, the Nordic countries have implemented policies particularly directed at more father involvement in the home, often called the missing piece in the gender revolution (Goldscheider et al., 2015; England, 2010). Changes in the role of fathers' and the emergence of policies targeted at fathers do call for more research on fathers' income development (Stier and Mandel, 2009). If a two-step gender revolution (Goldscheider et al., 2015) is unravelling in Norway, fathers' as well as mothers' income may be affected by the arrival of children.

A symmetrical family model where women and men share domestic duties and paid work equally between them, has been a political goal in Norway since the 1970s (Ellingsæter and

Leira, 2006), and this family model has great and growing support in the population (Hellevik and Hellevik, 2012). Correspondingly, women's share of the couple's earned income has increased considerably in Norway in recent decades (Skrede and Wiik, 2012), and partners' earnings are currently approximately equal in about half of all co-residential couples aged 25-59 years (Bergsvik, Kitterød, and Wiik, 2016). Nevertheless, the man's income still surpasses that of the woman in about 45% of couples, and this is more common when there are young children in the household (Bergsvik et al., 2016). Despite a convergence in men's and women's time use in the labour market and the family in recent decades (Kitterød, 2016), parenthood still strengthens gender-role specialization and intensifies the gender gap in earnings, wages, and career development in Norway (Barth, Hardoy, Schøne, and Østbakken, 2013; Cools and Strøm, 2014; Hardoy, Schøne, and Østbakken, 2017). However, there is little knowledge as to whether the association between parenthood and within-couple inequality in income has changed in recent years, and whether such changes are linked to a lessened impact of children on women's income and/or a stronger impact on men's income.

Using Norwegian register data on the total population of married and cohabiting couples born 1946 to 1989, with information on partners' annual pensionable income in the period 2005 to 2014, we investigate to what extent parenthood, and the presence of young children in the household, is related to within-couple inequality in earnings. Notably, we add to the literature by assessing whether the importance of children changed in the period 2005-2014, a period in which work-family policy measures facilitating women's employment and promoting men's family involvement were substantially strengthened (Ellingsæter, 2018). We further increase the knowledge on within-couple income inequality by using data on all co-residential couples, not only married couples or cohabiting parental couples as employed in most extant studies. Specifically, using interactions and fixed effects models we compare the development of within-couple gender gaps in earnings over time between childless couples

and couples with children of different ages, and within couples before and after childbirth.

## Theoretical background and previous research

### Within-couple inequality in income

Since the 1980s, a growing body of research has explored women's and men's income contributions in couples, how this has changed over time and variations across countries, as well as the determinants and consequences of gender-equal and -unequal arrangements. For instance, in the U.S. Sørensen and McLanahan (1987) found that although few women earned as much as their partner, only a small minority was completely dependent on their husband's income. The main determinants of economic independency were women's labour supply and the amount of unearned income (e.g. social security). Another early U.S. study found that wives who out-earned their husbands typically held a male dominated occupation while the husband had a very flexible job, and there were no children in the household (Atkinson and Boles, 1984).

In tandem with the increase in women's employment and educational attainment in many Western countries, numerous studies demonstrate an increasing prevalence of gender-equal earning arrangements, although women still rarely out-earn their partners and have substantially lower earnings in a sizeable proportion of couples (Bianchi et al., 1999; Raley, Mattingly, and Bianchi, 2006; Vitali and Mendola, 2014). The minority of couples in which the woman has the highest income is highly heterogeneous, comprising couples where the woman has a well-paid job and/or works long hours, as well as couples where the man has an unstable labour market position (Drago, Black, and Wooden, 2005; Oppenheimer, 1997; Raley et al., 2006; Vitali and Arpino, 2016). A recent Norwegian study provides similar results (Bergsvik et al., 2016).

Considering that women now outnumber men in higher education in many Western

countries and are better educated than their partner in an increasing number of couples, researchers have been particularly interested in the breadwinning patterns of this latter couple type (Klesment and Van Bavel, 2017). Recent Norwegian data show that 38% of first-time mothers in cohorts born 1940 to 1964 had the same education level as the fathers, and that the share of parental couples in which the mother had the highest level of education increased from 19% for the earliest cohorts to 30% for the most recent ones (Kravdal and Rindfuss, 2008). Women in these couples may have a higher earning potential than their partner, though several factors may counteract such a development.

Obviously, female breadwinning still violates normative expectations in certain population subgroups (Klesment and Van Bavel, 2017). But most importantly, the persistent gender segregation in education and the labour market entails that even highly educated women often earn less than their male counterparts, and women usually reduce their labour market activity more than men when children arrive (Cools and Strøm, 2014; Klesment and Van Bavel, 2017). However, analysing couples' income patterns in 27 countries in 2007 and 2011, Klesment and Van Bavel (2017) found that if a woman was better educated than her partner, this increased the odds of her earning more than him and reduced the so-called "motherhood penalty" on women's relative earnings. Still, this "hypogamy bonus" is less pronounced in egalitarian countries than in countries with more conservative gender norms (Van Bavel and Klesment, 2017).

**Parenthood and couples' earnings**

The negative association between parenthood and women's relative earnings, is a consistent finding across countries and time periods (Bianchi et al., 1999; Klesment and Van Bavel, 2017; Sani, 2015; Stier and Mandel, 2009), though in the US parenthood was less predictive of wives' provider roles at the turn of the century than in previous decades (Raley et al.,

2006). The three most common explanations for changing provider roles at the arrival of children are couple specialization, relative resources and the "doing gender-perspective". Differentiated gender roles have long been regarded a functional necessity for a stable family system (Parsons, 1949). Similarly, neoclassical economics argue that men specialize in paid labour and women in domestic production and reproduction to maximize the "family utility" (Becker, 1991). Gender role specialization might be strengthened among parents due to sex differences becoming more pronounced in the process of childbearing and -rearing. The persistent gender wage gap further supports the rationality of a gender specific division of work (Becker, 1991). Hence, women's and men's earnings potential influence their bargaining over time use after the arrival of children (Angelov, Johansson, and Lindahl, 2016).

Beyond comparative advantages, there have traditionally been different societal expectations towards mothers and fathers. These gendered expectations might revive when becoming parents. New parents might therefore be more prone to 'do gender' than those without children (West and Zimmermann, 1987). Interestingly, in the 2012 Norwegian ISSP almost half of the respondents thought that a mother with children below 6 years of age should work part-time, while 11% preferred that she should stay at home completely (ISSP, 2016). Still, this is a considerable shift from opinions held in 2002, when almost 30% stated that mothers with children under school age should stay at home (ISSP, 2013).

In addition, there is selection into parenthood, and this selection varies over time. That is, childless women, among whom the highly educated are overrepresented (Kravdal and Rindfuss, 2008), may for example be particularly career oriented. We assume, however, that this selection argument is most relevant for women born before the cohorts of the "educational revolution" in Norway (i.e. before 1950).

Family policies alter the benefits of couple specialization and may accordingly change

partners' bargaining and gradually also people's views on appropriate roles for women and men in the family and in the labour market (Hook, 2006). Several studies confirm that the design of a country's work-family policies is associated with mothers' relative income. For instance, analysing women's economic contribution to the family in 21 countries in the 1990s, Stier and Mandel (2009) uncovered that higher rates of childcare services, long maternity leave and the availability of part-time work generally increased women's labour force participation and thereby their share of the couple's earned income. However, long maternity leave and the availability of part-time work may still maintain unequal working conditions and specialized earning patterns in dual-earner couples (Stier and Mandel, 2009).

Investigating whether women in eight European countries faced a reduction of relative earned income in the event of a childbirth in the mid-2000s, Sani (2015) found that mothers' relative earned income was lowest in countries with generous family benefits, such as Sweden and Luxembourg, and highest in countries without generous family benefits, such as Italy, Portugal and Spain. However, when family benefits were included in the measured income, the negative relation between children and women's relative earnings disappeared. Hence, the extent to which work-family policies affect mothers' shares of couples' incomes depends on the type of work-family policy and the income measure. Stier and Mandel (2009) thus suggest exploring the effect of policies that affect men's working hours as well, such as restrictions on overtime work.

Most empirical studies on changing provider roles focus on first-time parents or do not address variations by parity. As subsequent births may further intensify specialization and thus increase the gender gap in earnings, we add to the literature by assessing differences in women's relative income by children's age as well as birth order. The fact that Norwegian mothers with two or more children work fewer hours than mothers with one child (Kitterød and Rønsen, 2012) suggests that specialization increases with the number of children.

## The Norwegian context

### Work-family policy and practices

The Scandinavian welfare states pioneered the transformation of parenthood into political issues. In addition to policies supporting women's paid work, these countries are famous for their policies aimed at enhancing men's domestic role (Ellingsæter and Leira, 2006). The three main ingredients in the Norwegian work-family policies; namely paid parental leave with job protection, public childcare, and cash-for-childcare benefits, have undergone major changes in our study period (2005-2014; see Appendix A for an overview). In this period, elements promoting specialized family practices, such as cash-for-childcare, were gradually reduced, whereas day-care coverage and parental leave, including some weeks reserved for each parent, were gradually extended. Women are increasingly expected to pursue continuous labour market participation even when they have young children, and fathers are encouraged to be actively involved with their children (Ellingsæter, 2018).

Nevertheless, the family friendly policies in the Nordic welfare states, particularly the generous parental leaves and the availability of part-time work, may have unintended consequences. Examples include concentration of women in public sector-jobs, high part-time working rates among women, relatively few women in top positions in industry and commerce, and a persistent gender-gap in wages (Datta Gupta, Smith, and Verner, 2008; Mandel and Semyonov, 2006).

The paid parental leave in Norway has been considerably extended since the 1990s and as of 2014 it was 49/59 weeks with 100/80 percent wage compensation up to a cap of about 500,000 NOK (approximately 50,000 Euros). This cap is well above the average annual income of women, but below that of men. However, public sector as well as some private sector employees have collective agreements guaranteeing income compensation above this ceiling. In 1993 the four-week fathers' quota was introduced, to strengthen the father-child-

relationship and promote gender equality in family-related tasks as well as in the labour market (Brandth and Kvande, 2018). The fathers' quota was adjusted to 5/6/10/12/14/10 weeks in 2005/2006/2009/2011/2013/2014 (see Appendix A). Until 2009, the fathers' quota was extended by prolonging the total parental leave, whereas extensions thereafter partly or fully came at the expense of the shareable part (i.e., weeks not reserved for either parent).[1]

Norwegian fathers' use of parental benefits has grown following each extension of the fathers' quota (Brandth and Kvande, 2018) and between the extensions (Dahl, Løken, and Mogstad, 2014). Currently, most eligible fathers use the quota, whereas the shareable part is mostly used by mothers (Kitterød, Halrynjo, and Østbakken, 2017). Several Norwegian studies show that fathers improve their parental skills while on leave (Brandth and Kvande, 2018). There is also evidence that the fathers' quota has influenced fatherhood norms so that fathers are increasingly expected to be involved caregivers (Brandth and Kvande, 2018), that it has a positive long-term effect on fathers' involvement with their children (Cools, Fiva, and Kirkebøen, 2015), and a negative effect on their income (Rege and Solli, 2013) and wages (Cools and Strøm, 2014). Similarly, uptake of parental leave negatively affects Swedish fathers' wages (Evertsson, 2016), whereas in Denmark, fathers' relative paternity leave length reduces the within-couple gender wage gap mainly through increasing mothers' wages (Andersen, 2018).

As for day care, there was long an unmet demand in Norway, particularly for the youngest children. However, following a political agreement in 2003 on the expansion of the day care sector, the percentage of children in publicly subsidised day care grew rapidly (see Appendix A). Simultaneously, socioeconomic differences in attendance decreased following a price cap reform in 2004 (Ellingsæter, Kitterød, and Lyngstad, 2017). Further, from 2009 all children were guaranteed public day-care from the first autumn they were one year old. Hence, by the end of our study period (2014), 67% of children aged 1, 91% of children aged 2 and 97% of

children aged 3-5 attended formal day care (Kitterød, 2016). Recent results confirm that the expansion of public childcare reduced couple specialization (Andresen and Nix, 2019).

In the late 1990s, a cash-for-childcare benefit was introduced to enable parents to spend more time with their children, obtain more flexibility in their childcare choices and distribute public transfers more equally between users and non-users of subsidized childcare. Several studies report negative reform effects on mothers' labour supply both during and beyond the eligibility period (Drange and Rege, 2013). Parents with children aged 1-2 who did not use state-funded childcare were entitled to the benefit and part-time users could have a reduced benefit. Since 2012 only parents with children below two years of age have been entitled (see Appendix A). In 1999, the benefit was claimed for as many as three quarters of children aged 1-2 years, but over the years, the take-up rate has diminished to only 23% of the children of an eligible age in 2014 (Egge-Hoveid, 2015).

**Women's and men's employment**

Women's employment has risen sharply in the past decades in Norway. In 2014, 81% of women in the age group 25-54 years were gainfully employed compared with 86% of men. The comparable shares in 2005 were 76% (women) and 86% (men) (see Appendix B). Currently, 60% of women work full time, but only 10% work long hours (> 39 hours per week), and part-time work is still quite common. However, there are few full-time housewives in Norway (Kitterød, 2016). Unlike women, men in the age group 25-54 years rarely work part-time, but one in four works long hours. Interestingly, we note that the unemployment rate was low during our study period and did not increase dramatically following the economic crisis in 2008 neither for women nor men (see Appendix B). In general, the recession was short-lived and had modest consequences in Norway compared with many other OECD countries (OECD, 2010).

Women's and men's different working hours are partly related to the gender segregation in the Norwegian labour market, with women being overrepresented in the more family-friendly public sector and in education, health, and social work and men in the private sector and in manufacturing and finance (Reisel and Teigen, 2014). Mothers are more likely to work in the public sector than childless women, and the difference increases with the number of children and is more pronounced in typical childbearing ages (Schøne, 2015). Importantly, many female-dominated professions are lower paid than male-dominated professions (Reisel and Teigen, 2014). According to Petersen, Penner and Høgsnes (2014) such sorting into different occupations and establishments is an important driver for wage differences associated with family status.

Women are also underrepresented in management positions in Norway, and this gender gap increases at the arrival of the first child (Hardoy et al., 2017). However, women now enter paid work faster after childbirth than in the 1990s (Rønsen and Kitterød, 2015), and only women with children under the age of two now work fewer hours than women with teenagers and those with no children in the household (Kitterød, 2016). Also, men with children under the age of two work less than those with teenagers or no children at home, but this is a quite recent pattern in Norway (Kitterød, 2016).

## Hypotheses and analytical strategy

We expect to find that parenthood, and particularly the presence of young children in the household, is associated with within-couple inequality in earnings. Correspondingly, women in couples with children below school-ages have lower relative earnings than their counterparts with older children and the childless (Hypothesis 1a). However, we expect to find that the within-couple gender gap in earnings was converging across the study period and becoming more similar between couples with and without (young) children (Hypothesis 1b).

Next, regardless of parity, we expect to find that women's relative earnings decrease in the period following a childbirth compared to the pre-birth situation (Hypothesis 2a). Last, we hypothesize that these within-couple adjustments in earnings following a childbirth have been reduced over time (Hypothesis 2b).

To clarify, we expect the reduced gap in mothers' and fathers' earnings during the study period to be driven by two parallel developments, namely a weakened association of having young children on female earnings and an emerging negative association between fatherhood and male earnings. Importantly, we do not expect this convergence to be a result of one single family policy reform, but rather as slowly unfolding changes in how men and women prioritize paid labour and childcare, visible in a reduced within-couple gender gap in earnings.

To assess our two first hypotheses, we started by analysing the relation between parenthood and women's relative earnings in 2005 to 2014 cross-sectionally using ordinary least squares regression (OLS). In these models, we focus on the role of having children below school-ages (i.e. 0-1; 2-3; 4-5 years) compared to having older (6-19 years) or no children in the household (Hypothesis 1a). To examine possible secular changes in women's relative earnings (Hypothesis 1b), we included two-way interaction terms between calendar year and age of the youngest child.

Next, to test Hypotheses 2a and 2b we ran subsample analyses using couple fixed effects models comparing earning inequalities within couples before and after they had a(nother) child. These models give the net change in relative earnings by shifting from one family status to another and eliminate baseline differences in relative income due to differential selection into parenthood.[2] To investigate whether the adjustments in earnings immediately following a childbirth varied over the study period (Hypothesis 2b), we interacted a dummy representing the transition to parenthood with the child's birth year.

To assess whether potential changes were driven by mothers' or by fathers' income

development, additional analyses were run using men's and women's earnings separately as outcomes.

## Data and measures

We utilize data from Norwegian administrative registers covering yearly observations for the period 2005-2014. A novelty for this decade is that cohabiting couples without common children can be identified.[3] The sample comprises women and men in the age-group 25-59 years who are registered living with a partner. Couples with missing household income (*n* = 78,357, 1.1%) were omitted from the final sample. In total, our sample includes 7,064,767 couple observations and about 700,000 unique couples each year. To answer hypotheses 2a and 2b, we employ subsamples of these couples, focusing on those who gave birth between 2007 and 2013. Each year we observe about 8,000 first births, 14,000 second and 7,000 third births. Using universal ID numbers, we linked these household data, including union status and age and number of children in the household, to register data on each partner's pensionable income, educational level and country of birth.

### Dependent variable

Our main dependent variable, *women's share of the couple's income*, was measured continuously as her percentage of the couple's total pensionable income. Pensionable income is the sum of labour income and income from self-employment, and transfers replacing such incomes during parental leave, sick leave and occupational rehabilitation. These benefits are included because they are important for securing the household economy and individual economic independency. Further, the included transfers have the same status as earned income for pensions, sick-leave and unemployment benefit rights. Importantly, this measure gives us the total effect of diverging wages and working hour adjustments of both partners.

**Independent variables**

*Age of the youngest child* in the household and *calendar year* (2005-2014) constitute the explanatory variables in the first part of our analysis. We distinguish between couples whose youngest child was 0-1 years, 2-3 years, 4-5 years, 6-19 years, and those with no children or children living outside the household. Further, to capture persisting adaptions to the division of labour that stem from previous children, we included a continuous variable measuring the *number of children 0-19 years in the household* as well as a dummy variable indicating whether there were stepchildren living in the household. *Calendar Year* was included as a set of dummies.

To account for changing compositions of couples during the study period, as well as selection into parenthood by individual and couple-level characteristics, in the first part of the analysis, we included a set of covariates that are associated with income dynamics in couples and our explanatory variables (Raley et al., 2006; Sani, 2015; Van Bavel and Klesment, 2017). Note that these covariates were omitted from the second part of our analyses where couple-level fixed effects capture all stable couple characteristics. First, we measured the *union status of the couple*, with values married (0) and cohabiting (1). Next, *women's level of education* was grouped into four categories: 1) primary school (≤10 years), 2) secondary school (11-13 years), 3) short university education (14–17 years), and 4) long university education (≥18 years). Regarding the *relative education of couples*, we differentiated between couples where the partners had the same level of education (1) and couples where either the male (2) or the female (3) partner had most education.

Partners' *age* was measured continuously in years, including squared terms to capture nonlinearities. We further included both partners' *country of birth* separating between those born in Norway or in another country in the EU/EEA region plus the United States, Canada, Australia, and New Zealand on the one hand, and those born in European countries outside

the EU/EEA region plus Asia, Africa, Latin America, and remaining countries in Oceania, on the other. The variable has four categories: 1) Both partners born in the EU/EEA region etc., 2) she born in Asia, Africa etc. and he born in the EU/EEA-region etc., 3) he born in Asia, Africa etc. and she born in the EU/EEA region etc., and 4) both born in Asia, Africa etcetera.

## Results

### Descriptive statistics

Descriptive statistics for the full analytic sample are presented in Table 1. In 2014, 13% of these co-residential couples aged 25-59 had children below 2 years, whereas another 19% had children in the age group 2-5 years. Most couples (39%) had children in school ages and above, whereas 29% of couples were childless or had children not living in the household. The average number of children in our sample was 1.3. Next, 33% of couples were cohabiting in 2014 compared with 26% a decade earlier, confirming that non-marital cohabitation is increasingly normal in Norway. In 2014 around 12% of the households included stepchildren, a slight increase from 2005. Regarding women's level of education, there was a sharp increase between 2005 and 2014 and the share of couples where she was higher educated than him increased with nearly 5 percentage points. Averaged over all years, the woman had more education than the man in most educationally heterogamous couples, while 44% of couples were homogamous.

**Table 1.** Descriptive statistics. Married and cohabiting couples aged 25-59 years. 2005-2014.

| | | | 2005-2014 | | |
|---|---|---|---|---|---|
| | 2005 | 2014 | | All years | |
| **Variable** | ***% / M*** | ***% / M*** | ***diff.*** | ***% / M*** | ***N*** |
| Youngest child in household | | | | | |
| 0-1 year | 12.8 | 13.0 | 0.2 | 13.3 | 946,395 |
| 2-3 years | 9.9 | 10.6 | 0.7 | 10.4 | 739,574 |
| 4-5 years | 7.7 | 8.1 | 0.4 | 7.7 | 551,747 |
| 6-19 years | 38.4 | 39.1 | 0.7 | 39.0 | 2,785,255 |
| No child(ren) living in household | 31.2 | 29.3 | –1.9 | 29.7 | 2,120,153 |
| Number of child(ren) 0-19 years | 1.34 | 1.34 | +/–0 | 1.35 | |
| Stepchildren in the household | 11.6 | 12.1 | 0.5 | 12.0 | 859,973 |
| Union status: | | | | | |
| Married | 74.4 | 67.4 | –3.4 | 70.9 | 5,007,731 |
| Cohabiting | 25.6 | 32.6 | 7.0 | 29.1 | 2,057,036 |
| Woman's education level | | | | | |
| Primary | 19.8 | 15.6 | –4.2 | 17.7 | 1,247,456 |
| Secondary | 41.7 | 32.9 | –8.8 | 37.2 | 2,628,414 |
| University, short | 30.6 | 35.7 | 5.1 | 33.6 | 2,374,296 |
| University, long | 6.1 | 12.0 | 5.9 | 9.0 | 632,618 |
| Missing | 1.9 | 3.9 | 2.0 | 2.6 | 181,983 |
| Couple's education | | | | | |
| Homogamous | 45.8 | 42.5 | –3.3 | 44.3 | 3,128,289 |
| He<her | 25.2 | 29.8 | 4.6 | 27.7 | 1,958,750 |
| He>her | 26.3 | 21.9 | –4.3 | 24.2 | 1,708,061 |
| Missing | 2.8 | 5.8 | 3.0 | 3.8 | 269,667 |
| Woman's age | 41.3 | 41.1 | –0.2 | 41.2 | |
| Man's age | 43.7 | 43.5 | –0.2 | 43.6 | |
| Partners' region of birth | | | | | |
| Both EU/EEA-region, etc. | 92.6 | 86.85 | –5.75 | 89.4 | 6,317,727 |
| She Asia, Africa etc., he EU/EEA-region etc. | 2.52 | 4.63 | 2.11 | 3.6 | 256,891 |
| He Asia, Africa etc., she EU/EEA-region etc. | 1.18 | 1.91 | 0.73 | 1.5 | 108,676 |
| Both Asia, Africa etc. | 3.7 | 6.61 | 2.91 | 5.4 | 381,473 |
| *N* | 700,889 | 721,109 | | | 7,064,767 |

As shown in Table 2, women's and men's incomes increased during the study period. Still, the increase from 2005 to 2014 was higher for women (34%) than for men (24%). Further, among women, the income of mothers with children in school ages increased most (39%). Conversely, mothers with children below 2 years (30%) and women without resident children (29%) had the lowest increase. Among men we see a similar development: Fathers whose youngest resident children were in school ages displayed the highest income increase (26%) whereas their counterparts with children below 4 years had the lowest (21%). Again, note that parental leave benefits are included in our inflation adjusted income measure.[4]

**Table 2**. Women's and men's mean income 2005-2014, by age of the youngest resident child. Fixed 2014 NOK. Married and cohabiting couples aged 25 to 59.

| | Pensionable income per year | | | | | | | | | | % change 2005-2014 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | |
| Women | | | | | | | | | | | |
| 0-1 years | 264,805 | 269,960 | 287,543 | 302,228 | 314,636 | 316,657 | 326,062 | 333,895 | 337,848 | 344,124 | 30 |
| 2-3 years | 264,270 | 276,594 | 298,631 | 314,848 | 325,050 | 324,830 | 337,936 | 350,378 | 354,524 | 358,034 | 35 |
| 4-5 years | 278,455 | 292,868 | 317,511 | 336,934 | 347,771 | 349,341 | 362,074 | 370,971 | 378,928 | 383,251 | 38 |
| 6-19 years | 303,502 | 314,910 | 338,665 | 356,916 | 368,715 | 373,122 | 389,465 | 404,472 | 414,530 | 420,998 | 39 |
| No children in HH | 286,178 | 294,191 | 314,112 | 327,514 | 335,017 | 335,929 | 346,731 | 356,046 | 363,812 | 368,616 | 29 |
| All | 287,327 | 297,234 | 318,946 | 335,175 | 345,483 | 347,794 | 360,931 | 372,577 | 380,404 | 385,967 | 34 |
| Men | | | | | | | | | | | |
| 0-1 years | 476,257 | 487,301 | 526,260 | 547,852 | 542,562 | 535,257 | 551,488 | 565,999 | 570,694 | 574,279 | 21 |
| 2-3 years | 493,048 | 506,792 | 544,165 | 566,920 | 566,060 | 558,769 | 573,257 | 586,826 | 594,700 | 597,570 | 21 |
| 4-5 years | 508,027 | 528,252 | 560,103 | 585,684 | 584,913 | 578,518 | 599,691 | 614,169 | 618,995 | 624,283 | 23 |
| 6-19 years | 534,324 | 543,148 | 583,708 | 608,949 | 609,822 | 608,735 | 632,248 | 651,757 | 662,842 | 671,249 | 26 |
| No children in HH | 464,415 | 471,726 | 504,876 | 524,997 | 525,775 | 523,668 | 540,940 | 558,636 | 566,550 | 572,548 | 23 |
| All | 498,960 | 509,450 | 546,870 | 570,174 | 569,838 | 566,538 | 586,069 | 603,362 | 611,863 | 618,178 | 24 |
| | 700,889 | 696,600 | 697,818 | 697,664 | 701,211 | 704,268 | 710,335 | 714,906 | 719,967 | 721,109 | 7,064,7 |
| *N* | | | | | | | | | | | 67 |

In line with prior studies and reflecting the lingering gendered nature of the labour market, Figure 1 shows that women, irrespective of their family status, earn less than their male partners. On average, women's share of couples' earned income in this period was 38.7%. Over the study period it increased with 1.4 percentage points, from 37.9% in 2005 to 39.3% in 2014. We further note that women's relative income increased more among couples with children than among couples without children in the household.

"Figure 1: Women's share of the couple's income, 2005-2014, by age of the youngest resident child. Married and cohabiting couples aged 25 to 59 (*N*=7,064,767)."

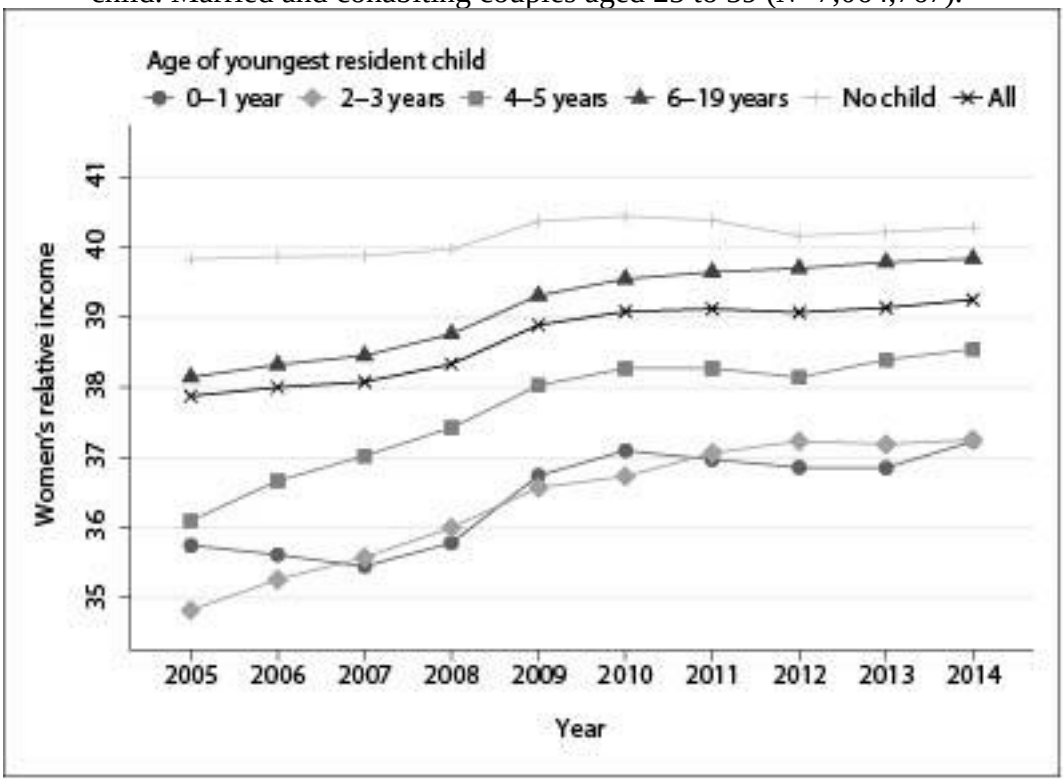
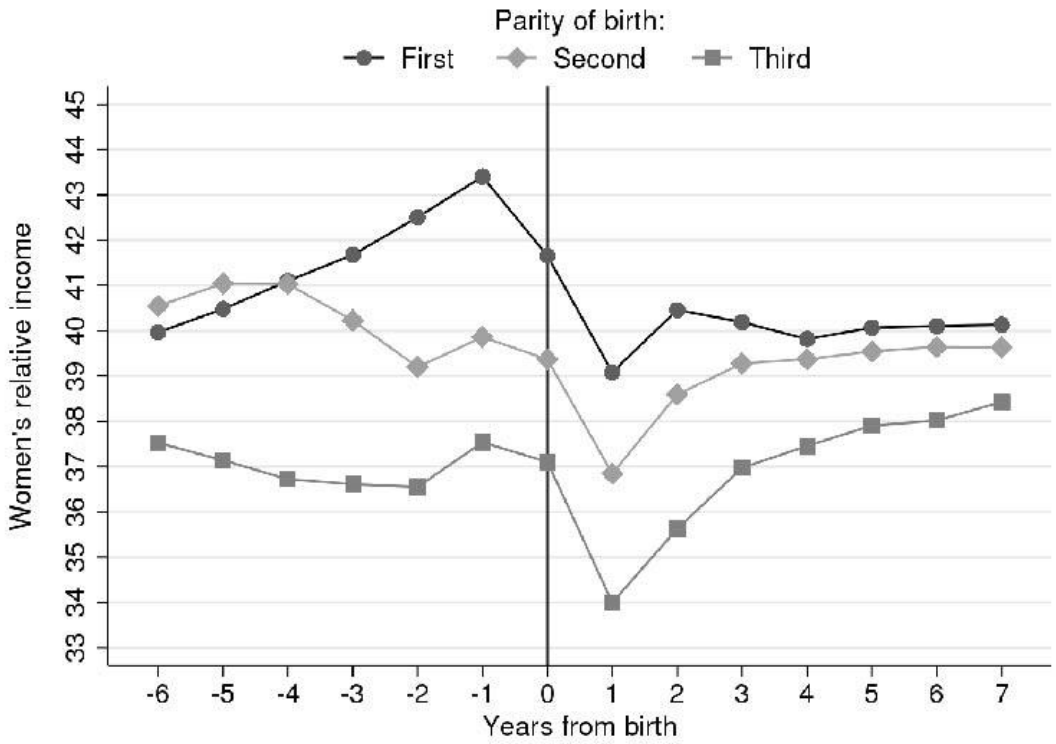



Figure 2 illustrates how women's relative income varied the years around a birth by parity. For all parities, the year of birth and the following year was characterized by a sharp decrease in women's relative income, though the fall was biggest at first childbirth (from 43% the year before birth to 39% the year after birth). We further note that partners' earnings were converging the years before the first birth, whereas the situation was mixed in the years preceding subsequent births, likely attributable to previous births. Some years after completed fertility, or when the child grew older, a catch-up is visible.

"Figure 2: Women's share of the couple's income, before and after childbirth. Yearly means by parity. Married and cohabiting couples aged 25 to 59 giving birth after 2006 (first births *N* = 55,067; second births *N* = 104,035; third births *N* = 50,027)."




**Cross-sectional regression results**

Results from cross-sectional regression models comparing couples with children at different ages to their counterparts without children in the household are presented in Table 3. First, Model 1 confirms the negative relation between having young children in the household and women's relative earnings. Among couples whose youngest child was 1 year or younger women's share of earned income was on average 3.7 percentage points lower. For couples with 2-3-year-olds the income gap was similar. Else, the association between parenthood and women's relative earnings was less negative the older the youngest child was. Further, these results confirm that women's relative income increased during the study period.

**Table 3.** OLS results for women's relative income. Married and cohabiting couples aged 25 to 59. 2005-2014.

| | Model 1 | | Model 2 | | Model 3 | |
|---|---|---|---|---|---|---|
| **Variable** | B | SE | B | SE | B | SE |
| Youngest child in household | | | | | | |
| 0-1 year | –3.71 | 0.02 | –1.62 | 0.03 | –1.98 | 0.08 |
| 2-3 years | –3.76 | 0.03 | –1.45 | 0.04 | –2.65 | 0.09 |
| 4-5 years | –2.45 | 0.03 | **–0.03** | 0.04 | –1.18 | 0.10 |
| 6-19 years | –0.99 | 0.02 | 0.81 | 0.03 | 0.31 | 0.06 |
| No child(ren) living in household | Ref | | Ref | | Ref | |
| Number of child(ren) 0-19 years | | | –1.51 | 0.01 | –1.50 | 0.01 |
| Stepchildren in the household | | | 0.29 | 0.02 | 0.30 | 0.02 |
| Cohabiting | | | 2.98 | 0.02 | 2.99 | 0.02 |
| Woman's education level | | | | | | |
| Primary | | | Ref | | Ref | |
| Secondary | | | 1.04 | 0.02 | 1.03 | 0.02 |
| University, short | | | 3.04 | 0.02 | 3.03 | 0.02 |
| University, long | | | 5.47 | 0.03 | 5.47 | 0.03 |
| Couple's education | | | | | | |
| Homogamous | | | Ref | | Ref | |
| He>her | | | –4.83 | 0.02 | –4.83 | 0.02 |
| She>him | | | 3.75 | 0.02 | 3.75 | 0.02 |
| Woman's age | | | 2.45 | 0.01 | 2.45 | 0.01 |
| Woman's age squared | | | –0.03 | 0.00 | –0.03 | 0.0 |
| Man's age | | | –1.83 | 0.01 | –1.84 | 0.01 |
| Man's age squared | | | 0.02 | 0.00 | 0.02 | 0.00 |
| Partners' region of birth | | | | | | |
| Both EU/EEA-region etc | | | Ref | | Ref | |
| She Asia, Africa etc., he EU/EEA etc. | | | –5.68 | 0.04 | –5.68 | 0.04 |
| He Asia, Africa etc., she EU/EEA etc. | | | 7.29 | 0.06 | 7.28 | 0.06 |
| Both Asia, Africa etc. | | | –0.15 | 0.03 | –0.16 | 0.03 |
| Calendar year | | | | | | |
| 2005 | Ref | | Ref | | Ref | |
| 2006 | 0.14 | 0.03 | **0.05** | 0.03 | **–0.03** | 0.06 |
| 2007 | 0.23 | 0.03 | **0.04** | 0.03 | –0.10 | 0.06 |
| 2008 | 0.50 | 0.03 | 0.24 | 0.03 | **–0.04** | 0.06 |
| 2009 | 1.07 | 0.03 | 0.70 | 0.03 | 0.27 | 0.06 |
| 2010 | 1.26 | 0.03 | 0.78 | 0.03 | 0.25 | 0.06 |
| 2011 | 1.30 | 0.03 | 0.70 | 0.03 | **0.08** | 0.06 |
| 2012 | 1.25 | 0.03 | 0.56 | 0.03 | –0.20 | 0.06 |
| 2013 | 1.32 | 0.03 | 0.57 | 0.03 | **–0.17** | 0.06 |
| 2014 | 1.42 | 0.03 | 0.61 | 0.03 | **–0.16** | 0.06 |
| Interactions | | | | | | |
| Youngest child 0-1 year*calendar year | | | | | | |
| 2005 | | | | | Ref | |
| 2006 | | | | | **–0.18** | 0.11 |
| 2007 | | | | | **–0.34** | 0.11 |

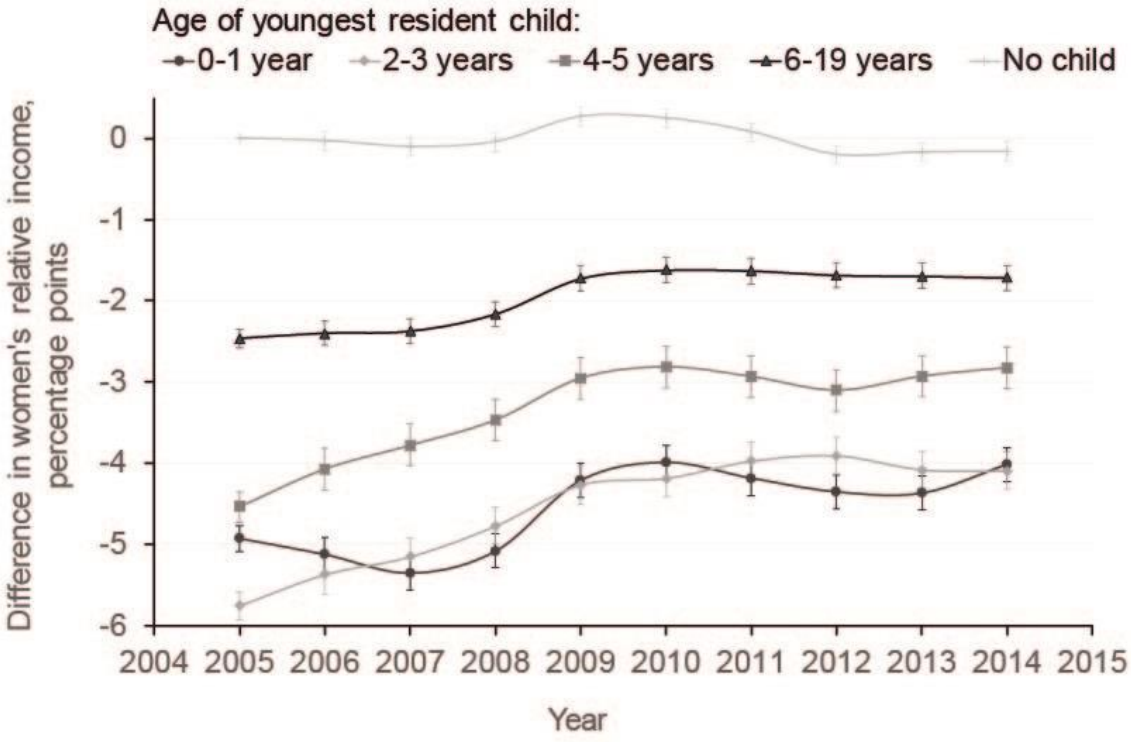
| | | | | | | |
|---|---|---|---|---|---|---|
| 2008 | | | | | **–0.13** | 0.11 |
| 2009 | | | | | 0.42 | 0.11 |
| 2010 | | | | | 0.65 | 0.11 |
| 2011 | | | | | 0.61 | 0.11 |
| 2012 | | | | | 0.71 | 0.11 |
| 2013 | | | | | 0.65 | 0.11 |
| 2014 | | | | | 0.98 | 0.11 |
| Youngest child 2-3 years*calendar year | | | | | | |
| 2005 | | | | | Ref | |
| 2006 | | | | | 0.40 | 0.12 |
| 2007 | | | | | 0.68 | 0.12 |
| 2008 | | | | | 0.99 | 0.12 |
| 2009 | | | | | 1.17 | 0.12 |
| 2010 | | | | | 1.25 | 0.12 |
| 2011 | | | | | 1.61 | 0.12 |
| 2012 | | | | | 1.95 | 0.12 |
| 2013 | | | | | 1.85 | 0.12 |
| 2014 | | | | | 1.82 | 0.12 |
| Youngest child 4-5 years* calendar year | | | | | | |
| 2005 | | | | | Ref | |
| 2006 | | | | | 0.46 | 0.13 |
| 2007 | | | | | 0.81 | 0.13 |
| 2008 | | | | | 1.06 | 0.13 |
| 2009 | | | | | 1.26 | 0.13 |
| 2010 | | | | | 1.40 | 0.13 |
| 2011 | | | | | 1.43 | 0.13 |
| 2012 | | | | | 1.53 | 0.13 |
| 2013 | | | | | 1.66 | 0.13 |
| 2014 | | | | | 1.74 | 0.13 |
| Youngest child 6-19 years*calendar year | | | | | | |
| 2005 | | | | | Ref | |
| 2006 | | | | | **0.09** | 0.08 |
| 2007 | | | | | **0.18** | 0.08 |
| 2008 | | | | | 0.32 | 0.08 |
| 2009 | | | | | 0.44 | 0.08 |
| 2010 | | | | | 0.55 | 0.08 |
| 2011 | | | | | 0.70 | 0.08 |
| 2012 | | | | | 0.92 | 0.08 |
| 2013 | | | | | 0.87 | 0.08 |
| 2014 | | | | | 0.84 | 0.08 |
| Constant | 39.29 | 0.03 | 25.99 | 0.21 | 26.52 | 0.21 |
| *N* | 7,064,767 | | 7,064,767 | | 7,064,767 | |

*Note*: Estimates not in bold $p < .001$.

Including relevant demographic and socioeconomic variables in Model 2 of Table 3, differences between the years were reduced, implying that part of the general increase in women's relative income during the study period was due to compositional changes in for example educational level. At the same time, the negative association between children and women's relative earnings persisted. On average, each resident child was associated with a 1.5 percentage points lower female income share. Having a child below 4 years was associated with an additional reduction in women's relative incomes, amounting to 1.6 (0-1-year-old) and 1.5 (2-3 years old) percentage points. Having older children (4-5 and 6-19 years old) did not add to couples' income gaps. Overall, these results are in accordance with Hypothesis 1a claiming that women in couples with young children have lower relative earnings than their counterparts with older children and those without resident children.

Including two-way interaction terms between calendar year and age of the youngest child, we further set out to investigate whether the negative association between having (young) children and women's relative income was reduced across the study period (Hypothesis 1b). Coefficients are given in Model 3 of Table 3 and Figure 3. In accordance with Hypothesis 1b, these results confirm that the within-couple gender gap in earnings was converging across the study period between couples with and without (young) children, net of other measured characteristics.

"Figure 3: OLS regression of women's relative income on age of the youngest resident child, calendar year, their interaction, and number of children (Ref.: no child, 2005). With 95 % confidence intervals."




"*Note*: Figure summarizes coefficients from Model 3 of Table 3. Sample is married and cohabiting couples aged 25 to 59, observed yearly 2005-2014 (*N*=7,064,767). Age of youngest child is allowed to interact with calendar year. Adjustments for number of children are based on annual group means. The model further controls for stepchildren, union status, women's education level, couples' relative education, both partners' age and age squared, and both partners' region of birth."

As shown in Figure 3, among couples without resident child(ren), women's relative income remained relatively stable. Among couples with children living in the household, on the other hand, women's relative income increased mainly in the first half of the observation period (2005 to 2010). This increase was particularly evident among couples whose youngest resident child was of kindergarten age (i.e. between 2 and 5 years old). There was no clear trend among couples with 0-1-year-old children, and within this group, differences across the years 2005 to 2008 were not statistically significant. We further note from Figure 3 that the magnitude of the gender gap in couples' earnings was relatively similar among those with

children between 0 and 3 years, hovering around 4 to 5 percentage points below the childless (reference).

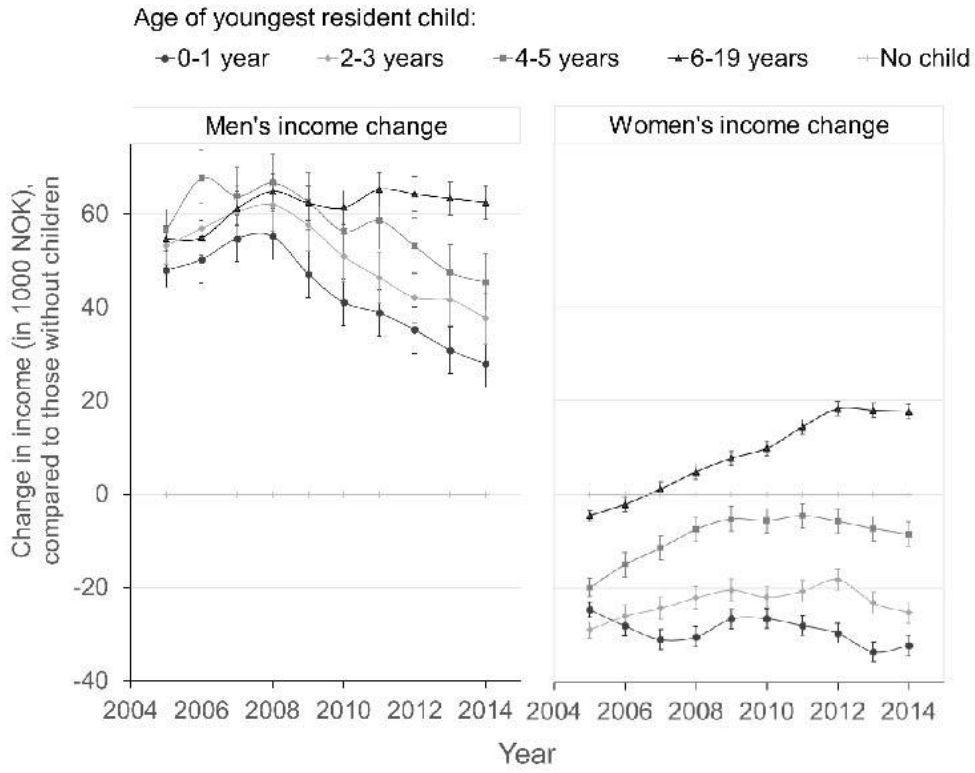
At the onset of the observation period, the earnings of couples with children up to one year were even more gender equal than among those with 2-3-year-olds. One possible explanation is that parental leave benefits already then compensated large parts of mothers' lost earnings during the first year of their children's life, while day-care coverage for the youngest children was still improving until reaching a top in 2010 (see Appendix A). The most important change in the parental leave system in our observation period is represented by the 2009 extension of the fathers' quota, which is also the year with the largest increase in the relative income of women in couples with children below 2 years. From 2008 to 2009 the relative income of these women rose with 0.9 percentage points. However, for all couples the biggest shift toward more equal incomes occurred between 2008 and 2009, possibly implying that the 2008/2009 financial crisis affected men more strongly than women.

To assess whether the reduced gender gap in parental earnings over the study period was driven by changes in mothers' or fathers' income, we ran additional models estimating developments in the absolute annual incomes of fathers' and mothers' separately (see Appendix C). These models confirm that fathers' annual earnings premium was 12,000 NOK per child, whereas each child on average was associated with 13,000 NOK lower annual income among mothers. However, among fathers and mothers alike there were important differences by age of the youngest child, and this association changed across the study period.

The interaction between age of the youngest child and calendar year on men's and women's earnings is illustrated in Figure 4 (see Appendix C for full model results). As can be seen from this figure, the income of men with resident children below school ages declined after 2008 compared with their counterparts without children. Conversely, men, and particularly women, with children above school ages improved their income across the observation period compared

to those without children. A similar improvement is seen among mothers with children aged 4 to 5 years in the first half of the observation period (2005-2009), when mothers of children aged 2 to 3 years also increased their income slightly. However, the incomes of mothers with children below 2 years remained at a low level and even declined throughout the observation period. For the latter group these findings imply that the reduced gap in within-couple earnings is a result of an emerging negative association between having a baby and earnings also for fathers. These couples will be examined closer in the next part of the analysis.

"Figure 4: OLS regression of men's and women's income on age of the youngest resident child, calendar year, their interaction, and number of children (Ref.: no child). With 95 % confidence intervals."




"*Note*: Figure summarizes coefficients from results shown in the two last columns of Appendix C. The income development of men and women in couples without children in the household serves each year as reference (see Table 2 for general income trends over the period). Sample is married and cohabiting couples aged 25 to 59, observed yearly 2005-2014 (*N*=7,064,767). Age of youngest child is allowed to interact with calendar year. Adjustments for number of children are based on annual group means. The model further controls for stepchildren, union status, women's education level, couples' relative education, both partners' age and age squared, and both partners' region of birth."

**Fixed effects panel regression results**

To obtain unbiased estimates of the effect of parenthood on income gaps within couples, we ran couple-level fixed effects models. For the subsample of couples who gave birth between 2007 and 2013 we investigate how their income gap changed during the time they had a new-born- to 1-year-old child at home, compared to the two years preceding the childbirth. Table 4 reports the corresponding couple fixed effects estimates of women's relative income. The results indicate that first-time mothers' relative income during and after childbirth was 2.6 percentage points lower than before the childbirth. The corresponding fall in women's relative income at subsequent births, including the first year thereafter, was 1.4 percentage points. To be sure, the increase at subsequent births came on top of the higher pre-existing inequality as can be read from the constant, which is at 43% before first birth, 39% before the second and 37% before third birth (see Table 4).

To investigate whether the adjustments in earnings immediately following a childbirth varied over the study period, we interacted the parenthood dummy with the child's birth year (see Model 2 in Table 4). As can be seen in the second model for first births in Table 4, women's relative income decreased with 3.5 percentage points for first childbirths occurring in 2007. The corresponding decrease for second and third births were 2.4 and 2.1, respectively. In subsequent years, the changes were smaller, and particularly a birth in 2009 had less impact on within-couple income gaps than in other years.

**Table 4.** Fixed effects panel regression results for women's relative income. By birth parity. 2005-2014.

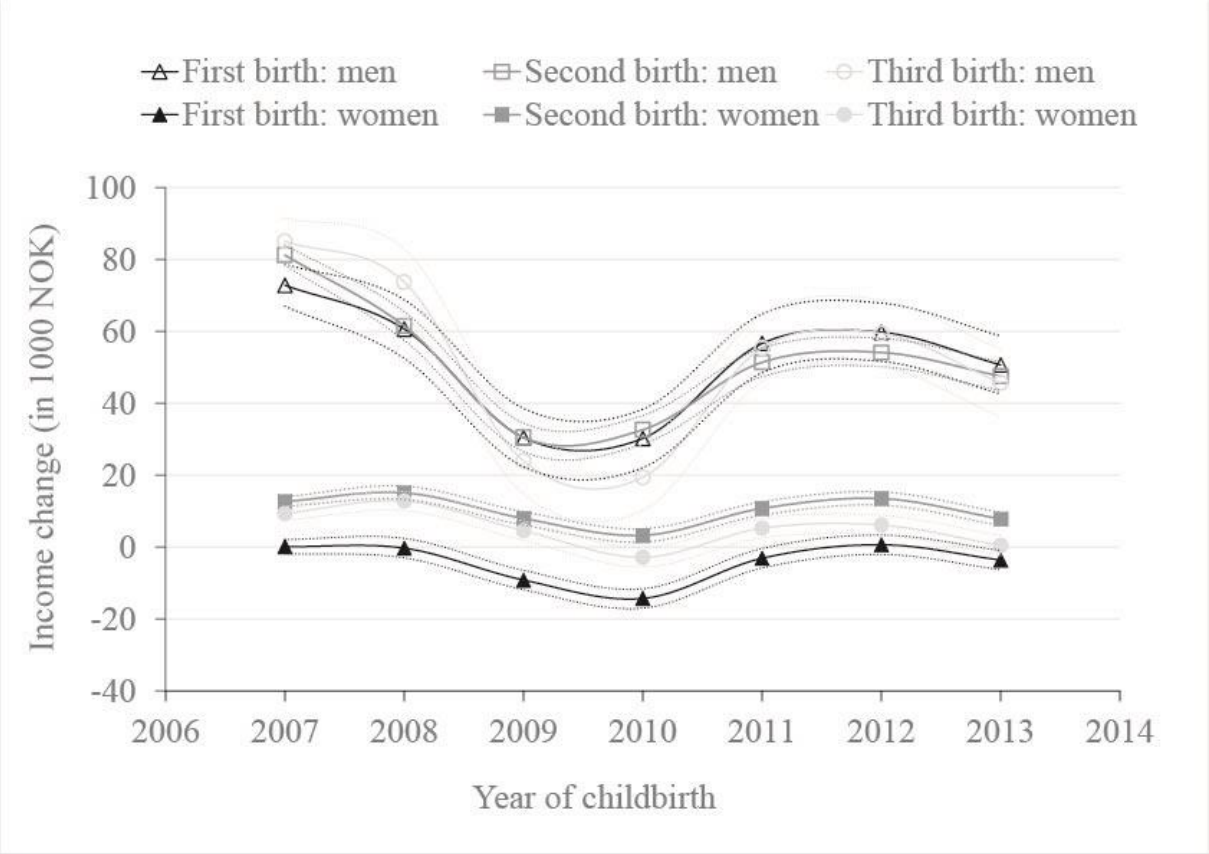
| | First birth | | | | Second birth | | | | Third birth | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Model 1 | | Model 2 | | Model 1 | | Model 2 | | Model 1 | | Model 2 | |
| **Variable** | B | SE | B | SE | B | SE | B | SE | B | SE | B | SE |
| Family status | | | | | | | | | | | | |
| 2 years preceding childbirth | Ref | | Ref | | Ref | | Ref | | Ref | | Ref | |
| Child 0-1 year | –2.62 | 0.04 | –3.50 | 0.10 | –1.38 | 0.03 | –2.42 | 0.07 | –1.39 | 0.04 | –2.14 | 0.10 |
| Interactions | | | | | | | | | | | | |
| Child 0-1 year* child's birthyear | | | | | | | | | | | | |
| 2007 | | | Ref | | | | Ref | | | | Ref | |
| 2008 | | | 0.59 | 0.14 | | | 0.91 | 0.10 | | | 0.77 | 0.14 |
| 2009 | | | 1.39 | 0.14 | | | 1.71 | 0.10 | | | 1.58 | 0.14 |
| 2010 | | | 1.12 | 0.14 | | | 1.44 | 0.10 | | | 1.05 | 0.14 |
| 2011 | | | 0.85 | 0.14 | | | 1.15 | 0.10 | | | 0.70 | 0.14 |
| 2012 | | | 0.96 | 0.14 | | | 1.04 | 0.10 | | | **0.44** | 0.14 |
| 2013 | | | 1.18 | 0.14 | | | 0.99 | 0.10 | | | 0.71 | 0.14 |
| Constant | 42.98 | 0.03 | 42.98 | 0.03 | 39.44 | 0.02 | 39.44 | 0.02 | 36.90 | 0.03 | 36.90 | 0.03 |
| *N* | 217,988 | | 217,988 | | 412,519 | | 412,519 | | 197,827 | | 197,827 | |

*Note*: FE estimates (B) and robust standard errors (SE) based on the equation in note 2 for the sample of married and cohabiting couples aged 25 to 59 who had a childbirth 2007 to 2013. Estimates not in bold $p < 0.001$.

Separate fixed effects analyses for men's and women's income changes after a birth are presented in Figure 5 (see Appendix D for full model results). First, it is striking how little a woman's income changed when having a baby. Her average income in the birth year and the year after was almost identical to her average income the two years preceding the birth. Still, as earnings increased considerably in Norway during the study period, this stagnation implies a negative development for mothers in relative terms (see Table 2). Indeed, fathers' earnings were also increasing after a birth even if their income growth was attenuated across the observation period. Again, we note that the largest drop in fathers' earnings occurred in 2009, concomitant with the 2008/2009 financial crisis. Further, Figure 5 confirms that the income changes in the birth year and the following year, compared to the two preceding years,

regardless of parity over time varied more for fathers, whereas mothers' incomes showed relatively persistent patterns during the decade of study.

"Figure 5: The effect of a childbirth on men's and women's income development. By child parity and year of childbirth (2007-2013). Fixed effect panel regression results with 95% confidence intervals."




"*Note*: Income during the year of birth and following year, compared to the two years preceding the birth in fixed 2014 NOK (see also note 2). Separate samples by parity. Fixed effects estimates derived from interactions with the child's birthyear. Full model results in Appendix D. General income trends over the period are found in Table 2. Sample is married and cohabiting couples aged 25 to 59 with a childbirth between 2007 and 2013 ($N$ = 55,067 first, $N$ = 104,035 second and $N$ = 50,027 third births)."

## Summary and discussion

The extent, to which parenthood affects gender inequality within couples, has been an important research topic in several countries in recent years. Numerous studies have found considerable changes in mothers' behaviour, but less is known about how parenthood affects fathers' employment and income (Stier and Mandel, 2009). In this paper, we used register data on the total population of married and cohabiting couples ages 25 to 59 to investigate within-couple inequality in earnings in Norway, a social democratic country with high gender-equality ambitions and extensive work-family policies that may affect both parents' employment. As most extant studies used data on married or cohabiting parental couples only, a novel contribution of the current study was the inclusion of childless cohabiting couples.

Although it is well-known that women, and especially mothers, still earn less than their male partners, few studies have so far investigated recent changes in the association between parenthood and women's relative earnings. We were particularly interested in assessing whether the importance of children changed during the study period 2005 to 2014, when work-family policies facilitating mothers' employment and encouraging fathers' family involvement were considerably strengthened. Of importance is the rapid expansion of affordable high-quality day-care, as well as the extension of fathers' parental leave quota from five to 14 weeks. Several Norwegian studies have found evidence of more involved fatherhood during the study period, a period that was also characterised by an increase in women's educational level and more favourable attitudes towards mothers' labour market participation.

Our study shows that the gender gap in earnings in couples is still clearly present, increases with the number of children, and is most distinct among couples with the youngest children. These findings are in line with Hypotheses 1a and 2a and may partly reflect general labour market conditions (persistent gender segregation and gender pay gap), but also persisting

gendered time allocations after the arrival of a child. Women still use most of the shareable parental leave (Kitterød et al., 2017) and more often reduce their working hours (Kitterød, 2016) and switch to jobs in the public sector than men (Schøne, 2015), even though their education in many cases surpasses that of their partners. Still, in Norway, having a baby comes with relatively small earnings reductions, implying that the country has a well-functioning social security system.

In line with Hypothesis 1b, the analyses of change over time revealed that the within-couple gender gap in earnings was slightly converging across the study period and becoming more similar between couples with and without (young) children. The increase in women's share of the couples' income was heterogeneous across couples with children of different ages and largest among couples with children below school ages. Further, and confirming Hypothesis 2b, the adjustments in earnings immediately following a childbirth changed over time. In our study period, 2009 stands out as the year with the least pronounced inequality increase following a childbirth. Similarly, cross-sectional comparisons confirmed that, for most couples, the trend towards more equal earnings peaked around 2009/2010.

Separate analyses for men's and women's income developments revealed that the income of fathers with children below school age declined after 2008. In return, mothers with children between 2 and 5 years steadily increased their income until 2009, while the income of mothers with children below 2 years stagnated throughout the period. Hence, we conclude that for couples with children of kindergarten ages (2-5 years old), the combination of mother's and father's opposing income trends reduced the gender gap. For couples with the youngest children (0-1 year), on the other hand, more of the reduction in within-couple income inequality between 2005 and 2014 was due to fathers' income development rather than mothers'. This latter finding holds both in the cross-sectional comparison and when comparing each partners' income before and after a childbirth in couple fixed effects models.

To be sure, our data did not reveal whether these developments were due to changes in hours worked or wage penalties. Previous Norwegian studies provide evidence for both. According to the Norwegian Labour Force Survey, the working hours of employed mothers increased across our study period, while the working hours of fathers decreased (Statistics Norway, 2019). Further, Kitterød (2016) found that men more often than previously reduce their working hours when becoming fathers while Cools and Strøm (2016) found fatherhood wage penalties. Nevertheless, in line with the 'stalled and uneven' gender revolution our results confirm that in Norway the remaining potential for more gender equality between partners' rests upon mothers as well as fathers.

Interestingly, we found that fathers' incomes stagnated especially after 2008, that the trend towards more equal earnings peaked around 2009/2010 and that 2009 stands out as the year with the least pronounced inequality increase following a childbirth. On the one hand, this timing displays striking simultaneity with the implementation of major family policy reforms in Norway. Notably, in these years there were major extensions of the fathers' quota and of day-care coverage for young children. As shown in previous studies, the introduction of the «daddy quota» (Rege and Solli 2013) and the actual use of paternity leave (Cools and Strøm 2014) did have effects on fathers' incomes and wages.

On the other hand, the 2008/2009 financial crisis might have affected young fathers more strongly than young mothers. That is, as men more often than women are employed in private sector jobs, their wages may have been more affected than women's. Further, as first family formation often overlaps with the establishing phase in the labour market, (perceived) economic uncertainty could, at least in theory, make selection into parenthood versus pursuing a career more salient (Hofmann and Hohmeyer, 2013). This is, however, highly speculative given the relatively low impact of the economic crisis in Norway (OECD, 2010). The unemployment rate was low throughout our study period and did not increase

dramatically following the economic crisis in 2008/2009 neither for women nor men (see Appendix B). Alternatively, men with high career ambitions could have started to delay or forego fatherhood due to increased parenting demands. Empirical evidence from Norway does, however, point in the opposite direction as it is still lower educated men and higher educated women who most often remain unpartnered and childless (Kravdal and Rindfuss, 2008; Wiik and Dommermuth, 2014). So, although we need to be cautious about pinpointing underlying mechanisms, our study reveals that new parents are increasingly equal-earners and that this pattern is at least partly driven by changes in the incomes of fathers with children below school ages.

However, attitudes towards the proper roles of women and men are still mixed and family policy implementations do not follow a continuum in Norway: Our study period ended with a reduction of the fathers' quota (14 to 10 weeks) and an increase in the monthly sum for the cash-for-childcare benefit. If institutional support to advance the second part of the gender revolution becomes weaker, then what we might interpret as a trend of shifting priorities about paid labour among young fathers' and mothers', again might vanish. What is unlikely to change fast, though, is women's success in the educational system and the concomitant increase in female employment, which has been vital for the first part of the gender revolution (Goldscheider et al., 2015).

## Notes

1. Parental benefit entitlements require that parents had a pensionable income in 6 of the 10 months prior to take up equivalent to approximately 5,200 Euros. Else, she receives a lump sum of approximately 6,650 Euros. Entitlement to the fathers' quota requires that both parents have parental leave rights. Regarding the shareable leave, fathers have independent rights and can draw parental leave benefits if the mother is occupied in employment, enrolled in education, or has severe health limitations. In addition to the paid leave, each parent is entitled to one year of unpaid leave with job protection.

2. Variations of the following equation are estimated:

$$Y_{i,t} = \alpha_i + B_1 Child\text{-}0\text{-}1\text{-}year_{i,t} + e_{i,t}$$

$Y_{i,t}$ denotes the change in couple's income gap for couple $i$ in period $t$ ; $\alpha_i$ is the couple fixed effect; $Child\text{-}0\text{-}1\text{-}year_{i,t}$ is a dummy variable set to 1 for the year of birth until the year after. The pre-childbirth period is the reference period and is also limited to the preceding 2 years to have the same window around all couples. $e_{i,t}$ is the error term.

3. The introduction of a unique address for all dwellings made it possible to identify cohabitors from 2005 onwards. A cohabiting couple is defined as a man and a woman registered in the same dwelling, both 18 years or older, who are not relatives or married and whose age difference is less than 16 years.

4. These benefits substitute the incomes of those staying at home with infants. In alternative analyses we ran the same models on women's share of couples' earned income, excluding benefits. These analyses confirmed that in couples with infants, women's relative earned income was around 10 percentage points lower compared to models using pensionable income. Among couples with older children as well as childless couples, there were no or only minor differences (results available in Appendix C).

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