

Two Decades of Same-sex Marriage in Sweden: A Demographic Account of Developments in Marriage, Childbearing and Divorce

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Abstract: In this study we examine period trends in same-sex marriage formation and divorce during 1995-2012 in Sweden and the role of childbearing in Swedish same-sex unions. The period begins with the introduction of the registered partnership for same-sex couples and also covers the introduction of formal same-sex marriage in 2009. We use register data for the complete population of Sweden, and contrast patterns for male and female same-sex unions with those of opposite-sex marriages. Our study shows that female same-sex union formation increased rapidly over the period, while trends for male same-sex unions show less of increase. The introduction of same-sex marriage legislation in 2009 appears to have had no noticeable effect on the pace of formation of new same-sex unions. In contrast, legal changes that supported parental rights in same-sex unions may have fueled the formation of female same-sex marriages. Further, we find that divorce risks in the marital unions of two women are much higher than in other types of marriages. We present some evidence of a convergence in divorce patterns over time. At the end of our study period male same-sex unions have the same divorce risk levels as opposite-sex marriages, while the elevated risks of divorce in female same-sex unions appear to have stabilized at levels somewhat lower than those observed in the late 1990s.

Keywords: Same-sex marriage, registered partnership, divorce, childbearing, Sweden

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Introduction

Sweden is often considered a forerunner in family change as regards many aspects of the so-called second demographic transition of increased diversity in family dynamics. New family trends have often appeared in Sweden and the other Nordic countries in order to later be observed across Europe and in other developed countries (van de Kaa 1987, p 11). It may be debatable whether this is a general pattern but it certainly holds for the development of same-sex unions and the legal recognition of same-sex marriages. This family form first gained legal recognition in the Nordic countries in order to later get established in a wide range of countries across Europe and beyond. Same-sex marriages or partnerships are now an established family form all over Northern and Western Europe, as well as North America (Chamie and Mirkin 2011).

This family form is still relatively new but in Sweden it has already existed for more than two decades. Data on same-sex partnerships and marriages in Sweden are available through the country's extensive population-register system. This makes it possible to carry out a demographic survey of the patterns in same-sex marriage formation and marriage dissolution for a period of time that covers more than just the initial phase of very new same-sex marriages. Our study expands on previous demographic research on same-sex marriages in Scandinavia by Andersson et al. (2006), Andersson and Noack (2010) and Wiik, Seierstad and Noack (2014) in order to determine whether previously observed early patterns of same-sex marriage dynamics reflected any long-standing patterns in such union dynamics or rather those of a transitional phase dominated by the pioneers in same-sex marriages. We further examine the role of childbearing in same-sex union dynamics. Earlier findings indicated a cross-over from a dominance of male couples to that of female couples in same-sex marriage formation; they also demonstrated elevated divorce risks in same-sex marriages of women. In our study we aim at providing better insight to the situation in Sweden based on data for a longer period of time and focusing on changes in patterns over time. For this purpose, we study the development in the demographic rates of same-sex marriage formation, childbearing and same-sex marriage dissolution in each calendar year during 1995-2012. We provide reliable information about the dynamics in a family form that has previously been possible to study only during limited periods of time or based on rather poor data. Our study covers longitudinal information on 2,142,905 men and 1,893,518 women born in Sweden, of which 4,230 women and 2,444 men formed a same-sex marriage when aged less than 49 in Sweden during our study period.

In our study we relate period trends in same-sex marriage formation and divorce to a few critical junctures (Neyer and Andersson 2008) in terms of legal changes in the status of same-sex marriages in Sweden: those related to the status of marriage itself and those related to the status of parenthood in same-sex unions. Legal changes related to same-sex parenting paved the way for the truly gender-neutral marriage legislation in 2009 but followed the introduction of the registered partnership in 1995. This sequencing of events allows us to study whether factors related to the symbolic framing of marriage or rather those of practical, legal matters in relation to parenthood may matter the most for the evolution of same-sex marriage trends in Sweden.

In our study, we will address the following research questions: what legal and policy changes drive patterns of same-sex marriage formation? Do these legal changes have any impact on divorce-risk trends of same-sex spouses? Do legal issues related to parenting matter more for family-demographic outcomes than the legal labelling of marriage itself? Are previously observed patterns in same-sex union dynamics stable over time or have they turned into new modes of behavior?

Previous research on same-sex union dynamics

Evidently, the legal recognition of same-sex registered partnerships and same-sex marriages adds new dimensions to family-demographic research. It offers new possibilities to study how, for example, family dynamics are influenced by the gendered interaction of spouses and how the democratization of marriage is influenced by and influences society at large. For people with any gay or lesbian sexual orientation it provides new freedoms and opportunities for better legally and socially recognized family life (Weston 1991; Badgett 2009). It may also produce pressures to conform to heterosexually-based family norms that are prevalent in society at large (Rydström 2011). In the wake of recent social and legal change, the field of research on same-sex couple relationships has expanded exponentially (Moore and Stambolis-Ruhstorfer 2013). The US based family-demographic literature covers a wide range of topics stretching from the outcomes of partners in same-sex unions (e.g. Rosenfeld 2014; Manning, Brown and Stykes 2016; Bennett 2017) to those of children who grow up in same-sex headed households (e.g. Biblarz and Stacey 2010; Calzo et al. 2017).

Thanks to the availability of excellent demographic data – and to a longer history of legally

recognized same-sex unions than in other countries – there is also a relatively vast body of empirical research on same-sex unions in Sweden and other Nordic countries. For example, Andersson et al. (2006) provide the first evidence of same-sex couple dynamics in terms of the formation and divorce of registered partnerships in Norway and Sweden during their first decade of legal existence; Andersson and Noack (2010) extend the same study to also cover Denmark, and Wiik, Seierstad and Noack (2014) provide an updated study on divorce risks in same-sex marriages in Norway during 1993-2010. These studies demonstrate what can be labelled a feminization of same-sex couple dynamics as women in the Nordic region have become much more prone than men to enter same-sex marriages but are also much more likely than men to dissolve their union through divorce. Aldén et al. (2015) provide additional insight into same-sex couple dynamics in Sweden. They studied the earnings and fertility trajectories in same-sex registered partnerships and argue that resource pooling is an important motivation for men to enter a same-sex registered partnership while for women this legal status mainly matters as a basis for family building and parenthood. Other research has focused on further aspects of same-sex family life. For example, Evertsson and Boye (2017) study patterns of parental leave use in same-sex and opposite-sex spousal families in Sweden; Kridahl and Kolk (2017) cover the retirement dynamics in those marriages; and Aldén, Björklund and Hammarstedt (2017) provide evidence of the early-life health (see also Chihaya, Baranowska-Rataj and Nilsson 2015) and educational outcomes of children with lesbian parents. Malmquist (2015a, 2015b) offers a set of studies with qualitative research on the different considerations that lesbian couples in Sweden face in relation to family building and family dynamics.

Our study is situated in the field of family demography. It is based on demographic methods and the analysis of demographic data. Like all quantitative demographic research, it relies heavily on the quality of available data. In this regard, we are fortunate to have access to excellent data in the manner of longitudinal records of complete civil-status histories of everyone with legal residence in Sweden during a period of almost two decades of same-sex registered partnerships and marriages. Evidently, this avoids many of the issues related to selective non-response or mis-reporting of events or an individual's own sex that otherwise create much obstacle for quantitative research on sexual-minority family dynamics. For example, available census data from several countries offer only cross-sectional information on people's living conditions; in addition, they may be biased by sexual-minority individuals' potential unwillingness to disclose sensitive issues related to their sexual orientation or by the

marginally huge impact of any mis-classification of records on a person's sex (cf. Black et al. 2000; Festy 2007; Cortina and Festy 2014). Evidently, the same holds for sample surveys that are not explicitly geared towards individuals with a sexual-minority belonging (e.g. Sullins 2017). Other surveys may be directed towards GLBT individuals but build on sampling methods that make it hard to judge what population the surveyed participants actually represent.

Evidently, there are also disadvantages in relying on official records of civil-status changes. These records provide little information on any subjective dimensions of couples' lives, they are also unable to tell about other dimensions of union trajectories, such as those related to non-marital cohabitation and dating or living-apart-together relationships (cf. Lau 2012; Manning et al. 2016; Joyner, Manning and Bogle 2017; Orth and Rosenfeld 2018). In what follows, we proceed with a presentation of the Swedish context of same-sex registered partnerships and marriages, our data and methods, before presenting our empirical results in terms of same-sex marriage formation, childbearing and divorce.

The introduction of same-sex marriages in Sweden

During the late 1980s and early 1990s the Nordic countries were forerunners to grant legal recognition to partners of the same sex. Denmark initiated this development in 1989 by introducing a new civil status, the *registered partnership*, for this purpose. This civil status was different in name but otherwise similar in contents to that of heterosexual marriage. Norway and Sweden followed the example of Denmark a few years later; Sweden introduced its registered partnership in 1995. In terms of legal rights and social practice, the registered partnership amounted to a de facto same-sex *marriage*. With a few but important exceptions, the registered partnership gave the same legal rights and duties as what a marriage provides to opposite-sex couples. Clearly, in the Nordic countries these rights are not very extensive as most social rights hold independently of a person's marital or family status. This holds for issues related to, for example, taxation, pension benefits and access to health care and social insurance. The exceptions compared to heterosexual marriages consisted of one or more of the following issues: the opportunity to jointly adopt a child, to have medically assisted insemination, the forms of how to solemnize the partnership, and requirements of legal residency in the country before entering partnership. Swedish historian Jens Rydström (2011) refers to these exceptions as the three C's related to Children, the Church, and Citizenship.

These exceptions were, however, questioned and many of them abolished during subsequent years. In 2003 registered partners in Sweden were allowed to jointly adopt a child and in 2005 medically assisted insemination was made available to women in same-sex relationships. The legal changes in 2003 were particularly important: this was the first time the law acknowledged that a child can have two legal parents of the same sex (Malmquist 2015a). Crucially, the access to adoption was restricted to partners in a registered partnership. Already from the onset, the procedures for dissolving a registered partnership were the same for registered partners as for opposite-sex spouses. In our study we refer to both registered partnerships and formal marriages as “same-sex marriage”, as little else than the label of the union actually changed with its full legal recognition in 2009.

The introduction and broad acceptance of the registered partnership paved the way to the final adjustments of the marital code to make it stand in a truly gender-neutral manner. Sweden completed its process of granting same-sex couples the same rights to marriage as those granted to couples of opposite sexes in 2009: it then adopted a fully gender-neutral marriage legislation. In the same year, the clergy of the Church of Sweden voted to embrace the new legislation by enacting equal rights for the solemnization of same-sex and different-sex marriages in Swedish churches. No new registered partnerships could be formed subsequent to the introduction of the new legislation. Couples who had already entered a registered partnership may however retain their civil-status label as registered partners if they want to, and the majority have done so. If they prefer they can choose to instead convert their civil status to that of marriage. This is mainly a symbolic act, as there are no longer any legal differences attached to the statuses of already registered partnerships and same-sex marriages. Symbolic issues may still matter in relation to marriage formation and divorce, a fact that we will exploit in our research design.

Data and Methods

Our analyses are based on Swedish register data, and in particular the civil status register that covers information on all registered changes in the marital status of each individual living in Sweden. Records on civil status changes can be linked to birth histories and migration histories by means of an administrative personal identity number (PIN) of each person with legal residence in Sweden. During our study period Sweden lacked a register on residence by unique dwelling units, which makes it impossible to study cohabiting unions. However, even

with the presence of such registers, same-sex cohabitants would be very hard to detect on the basis of administrative data sources (Festy 2007; Kreider and Lofquist 2015).

After the introduction of the registered partnership in 1995 Statistics Sweden collected data on the new family form. As for other Swedish statistics, data were collected on an individual basis showing statistics on the number of women and men in different family types and on changes in the civil status of women and men with residence in Sweden. Opposite-sex marriages can be solemnized through local municipalities as well as through the procedures of a number of religious denominations in Sweden. Beginning in 1995, local authorities also carried out the solemnization of registered partnerships. After May 1st in 2009 with the introduction of formal same-sex marriage, the Church of Sweden, previously the state church of Sweden, also carry out same-sex weddings.

Our statistical analyses are based on Swedish-born individuals that were under the risk of experiencing any civil status change during 1995-2012, and the civil-status changes experienced by these individuals. To avoid considering how migration and family formation interrelate with each other, we choose to exclude foreign-born individuals from our study population (a substantial fraction of spouses in male same-sex couples are foreign-born, see Andersson et al. 2006). We control for any previous civil status histories during the 1970s onwards. Our analyses include both women and men who may form or dissolve same-sex and opposite-sex marriages. For opposite-sex marriages we mainly present trends for women as the trends for men mirror those of women. We only study the risk of first marriage formation, and the dissolution of first marriages, as the number of same-sex marriages in higher order marriages is very small. Our analyses also include women and men at risk of same-sex marriage formation, who previously had been in an opposite-sex marriage.

Our civil-status records are related to childbearing records through Swedish birth registers. They cover biological parenthood, and as such every child is supposed to be registered with their biological father and mother. In practice, close to 99 percent of children are indeed registered to a (presumably) biological mother and father; however, in the case of children born in same-sex relationships these fractions are much lower (see our results section). In this manner, the multigenerational register contains information on biological parenthood if the parent is registered as a resident of Sweden. The multigenerational register also contains information on children born outside Sweden, including children who arrived to Sweden as international adoptees. While all children have two biological parents, these linkages are for

many reasons not necessarily available in the Swedish multigenerational register (Statistics Sweden 2009).

Our analyses of same-sex and opposite-sex marriages cover all new unions formed by Swedish-born individuals aged 16-48 during 1995-2012. For our analyses of first marriage formation individuals are under risk from age 16 or January 1, 1995 until the event of marriage or censoring due to emigration, age 49, death, or the end of 2012, whatever comes first. The analyses of opposite-sex marriage formation censor at same-sex marriage formation, and vice versa. Individuals who divorce from an opposite-sex marriage, re-enter the study upon divorce as being under risk again of first same-sex marriage formation. We include a time varying covariate to identify these individuals. With the introduction of the new gender-neutral marriage legislation in 2009, a minority of registered partnerships were converted into formal marriages. These conversions are not included in our analyses, as they represent no change in the de facto civil status.

In a similar manner, our analyses of divorce risks consist of all individuals who formed a registered partnership or marriage in 1995 and later; individuals are under risk until a divorce occurs or until censoring due to widowhood, emigration, own death, reaching age 49, or the end of 2012, whichever comes first. Individuals who transformed their registered partnership into a formal marriage in 2009 or later remains in the study population with the characteristics carried over from the partnership union. In Sweden, legal divorce is a swift procedure but if partners disagree about getting divorced they have to observe a waiting period of six months before the divorce gets registered by the authorities.

We use event history analyses to present time trends of the relative risks of first marriage formation and dissolution. Our strategy is similar to that first suggested by Hoem (1991, 1993). We include a covariate with annual period dummies in our regression models to examine how the relative propensity of marriage formation and divorce has changed over all calendar years since 1995. In our models we use 2002 as a reference year, as in that year the absolute number of newly formed male and female same-sex marriages were approximately the same. In our models, we standardize for the effects of a number of demographic background variables, which means that we control for the effects of compositional changes among men and women over these variables. We include covariates for age and parity and, in the divorce models, for premarital childbearing and the duration since marriage formation. Additionally, for same-sex marriage formation we apply a time-varying covariate on whether

an individual had previously experienced being in an opposite-sex marriage. Further, we present descriptive statistics to study the prevalence of previous childbearing at the time of marriage formation and circumstances for continued childbearing during the first five years following marriage formation.

The purpose of our depiction of period trends in same-sex marriage formation and divorce is to follow how these trends have evolved over time. In particular, we aim at relating them to two critical junctures in terms of the legal status of same-sex marriages in Sweden: one related to the liberalization of the rules connected to parenthood in same-sex marriages that occurred in 2003 and 2005, respectively, and one connected to the change in the status of marriage in terms of solemnization procedures and the actual labeling of “marriage” that occurred in 2009. Both changes may have had an impact on intensities in marriage formation and divorce; the impact may have been different for women and men.

Results

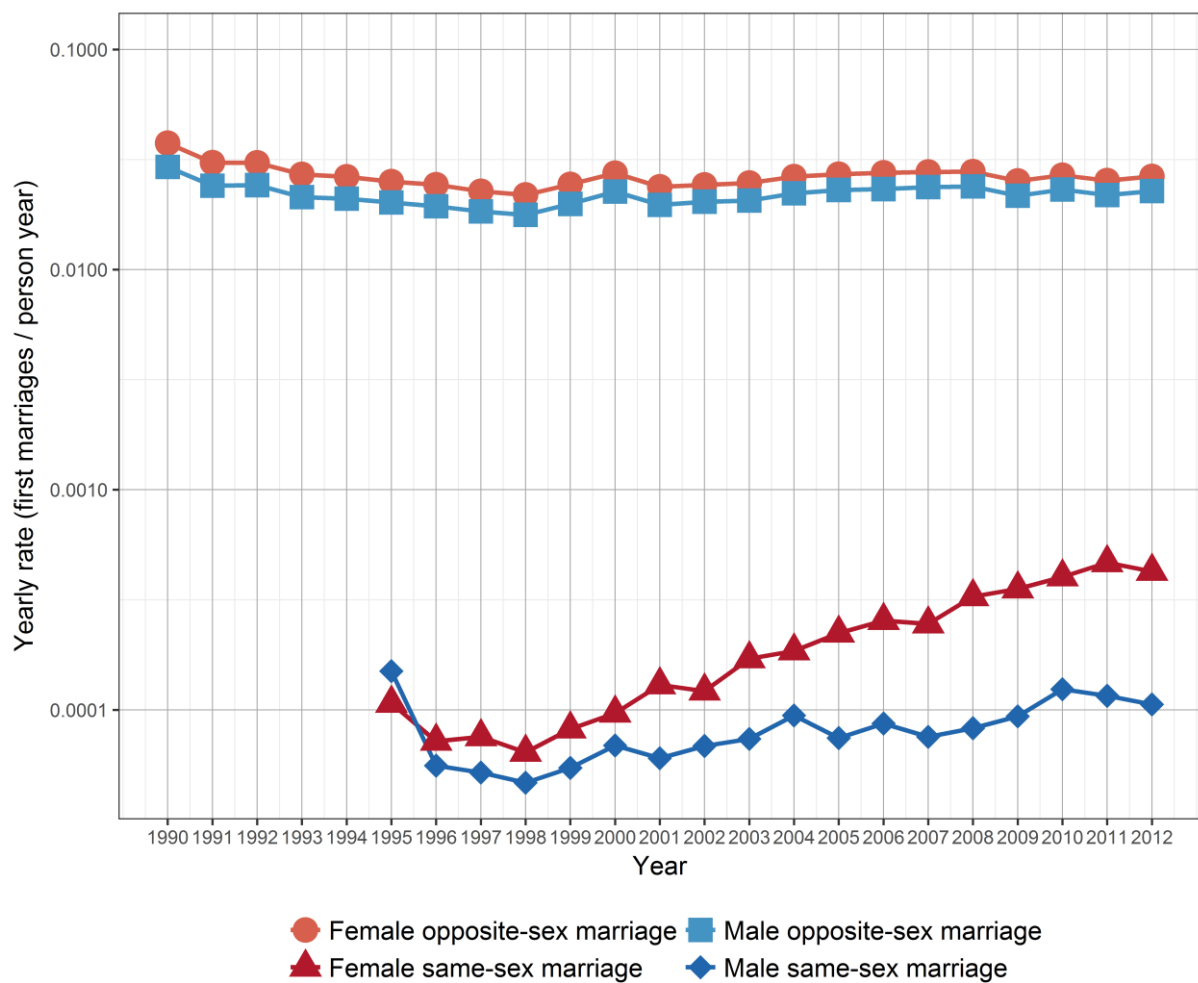
Changes in same-sex marriage formation, 1995-2012

We begin by showing how the crude rates of same-sex marriage formation have changed since the introduction of the registered partnership in 1995 (Figure 1). We define first same-sex marriages of women and men at ages 16 to 48 as our occurrences, and the unmarried population at ages 16-48 as our exposures (thus, excluding episodes in which individuals were married in an opposite-sex marriage). We also present the corresponding rates of opposite-sex marriage formation as comparison; due to different magnitudes in rates these differences are shown in a logarithmic scale. There was an initial spike in rates of same-sex marriage formation just after the introduction of the registered partnership in 1995, reflecting a situation of pent-up demand. This spike was more marked for men than for women as more men than women got married in a same-sex union in that year. However, during all calendar years after 1995 Swedish-born women have had consistently higher rates of same-sex marriage formation than men. This early cross-over towards elevated propensities for female same-sex marriage formation is not visible in simple statistics on just the numbers of marriages formed in each year, where no account is taken for the size of the un-married population under risk.

There were clear increases over time in the rates of same-sex marriage formation of men,

amounting to a doubling of the crude rates from 0.005% to 0.010% over a year between 1996 and 2012, but the crude rates for women increased even much more rapidly (Figure 1). The probability of a woman getting married in a same-sex union in a given year has increased almost six times from 0.007% to 0.043% between 1995 and 2012. We note that these increases took place during a period in which also the rates of opposite-sex marriage formation increased (cf. Ohlsson-Wijk 2011; Andersson and Kolk 2015). A closer inspection reveals that the marriage rates started to increase for all three types of marriages around 1999. The increase in heterosexual marriage formation does not come out very strong in our logarithmic representation but amounts to a relative increase by 20 percent in marriage rates between 1998 and 2012.

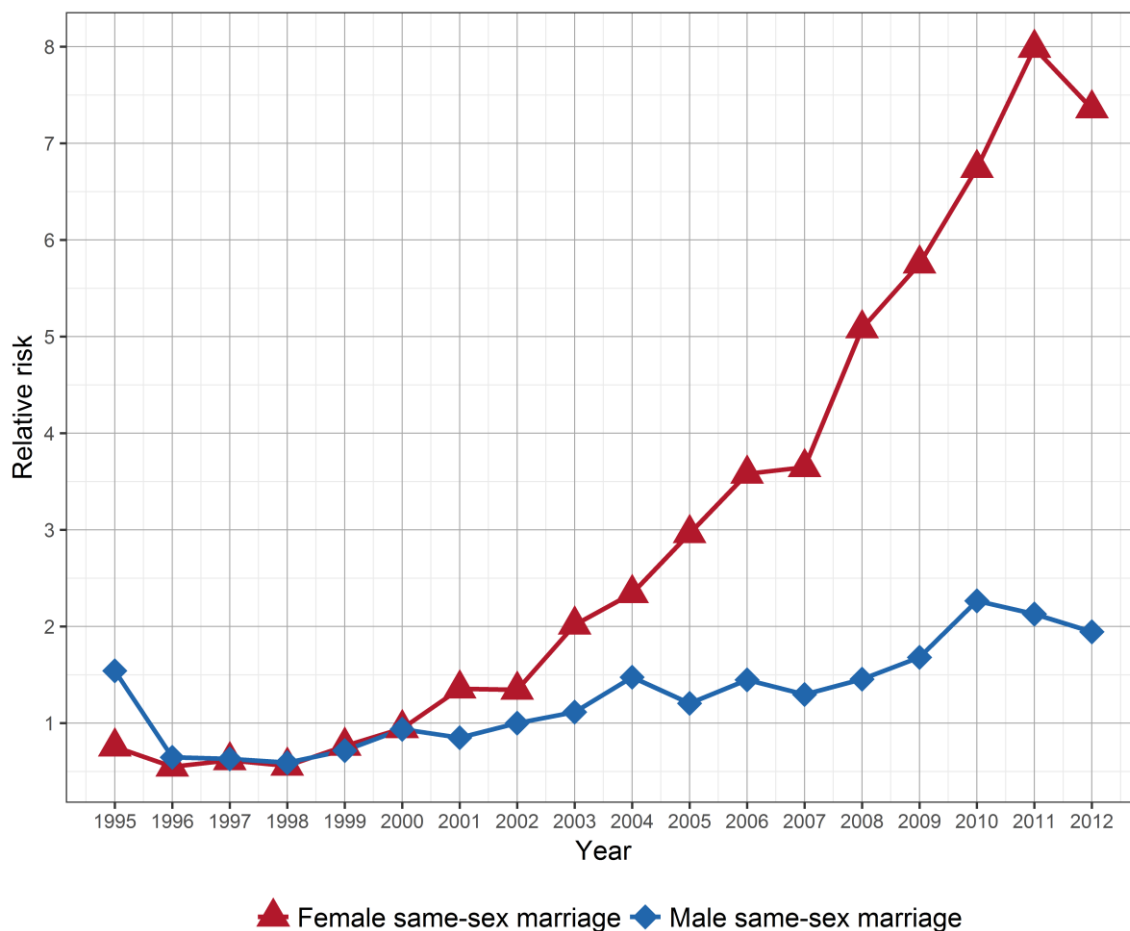
Figure 1: Annual rate of first same-sex and opposite-sex marriage formation for Swedish-born never-married men and women at ages 16-48. Number of marriages divided by never-married population at risk, 1990-2012.



Source: Swedish register data, authors' own calculations

We further analyze the risk of same-sex marriage formation by applying event-history analyses where we standardize for underlying changes in the composition over demographic covariates over time (Figure 2). These results corroborate the results from our presentation of crude rates. There has been a very rapid increase in the risk of same-sex marriage formation over time, in particularly for women. In the beginning of the 2010s women had a relative risk of same-sex marriage formation about three times as high as that of men. Interestingly, it appears that the introduction of formal same-sex marriage legislation in 2009 did not have any noticeable impact on the rates of new same-sex marriages. Both for men and women we observe an absence of trend change in the rates of new same-sex marriage formation around 2009 (though there were also a limited number of men and women that choose to convert their registered partnership into a formal marriage). After 2010-2011 the increase appears to have leveled off and the risk even declined modestly in our last year of observation. This trend break appears to have continued in 2013 and 2014 based on official statistics on the total number of same-sex marriages formed in those years (Statistics Sweden 2015). In contrast, the granting of adoption rights to same-sex couples in 2003, and the new rights to medically assisted reproduction in 2005, may have fueled the trend of increasing rates of female same-sex marriage formation. The long-term trend in the relative risks of same-sex marriage formation of women appears to accelerate in 2003; subsequent increases appear in parallel to increasing rates of childbearing in female same-sex marriages (see our next section). Our results are controlled for the impact of compositional changes over our other variables at hand, including the very low risks of same-sex marriage formation for non-married parents – who in the majority of cases live in a non-registered heterosexual consensual union (Appendix Table A1).

Figure 2: Relative risks of first same-sex marriage formation in Sweden, by calendar year and sex, 1995-2012. Risks relative to that of men in 2002. Risks are standardized for age group, parity, and the experience of any previous opposite-sex marriage.



Source: Swedish register data, authors' own calculations

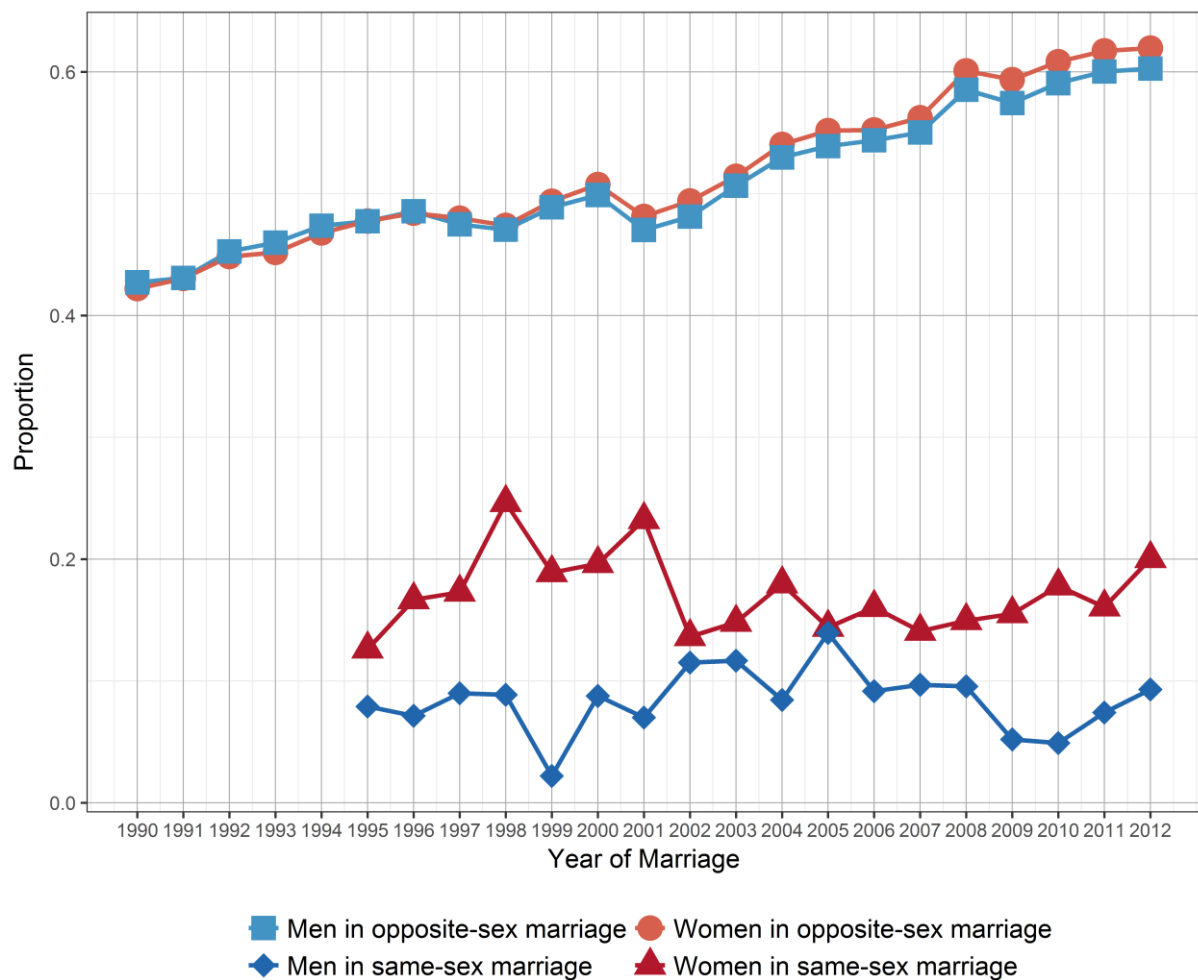
The importance of considering both absolute numbers of marriages and the demographic rates of marriage formation is underlined by the different age profiles of opposite-sex, female same-sex, and male same-sex marriage formation. Peak intensities of first marriage formation occur at younger ages for opposite-sex than for same-sex spouses. Additionally, female same-sex marriages are formed earlier than marital unions of two men (see the age-specific rates in Appendix Figure 1). As same-sex marriage formation of men occurs much later in life men also spend much longer time “under risk” of getting married, which reduces their rates of marriage formation. The faster motion of women into marriage translates into higher rates of same-sex marriage formation.

Our Appendix Figure 2 demonstrates that recent increases in the formation of opposite-sex marriages in Sweden are connected to the increased marriage formation rates of parents. Marriage has increasingly become connected to parenthood and tend to form a final step in Swedish couples' union careers (Holland 2013) – at least in the absence of divorce. This development also motivates us to have a deeper look into the role of childbearing and parenthood in relation to same-sex marriage formation.

Childbearing in same-sex marriages, 1995-2012

Consequently, we turn to the analysis of childbearing in relation to same-sex marriage. As described in the data section our results refer to biological children of an individual as registered by the authorities, unless noted otherwise. We begin by showing the prevalence of pre-marital childbearing, which in many cases reflects childbearing from a previous heterosexual relationship. From previous research we know that significant portions of individuals in same-sex marriages have children from previous opposite-sex unions, and that this holds in particular for women (Andersson et al. 2006; Wiik et al. 2014). In this section, we present data on the experience of any previous childbearing at the time of marriage formation. Figure 3 shows trends for childbearing before same-sex marriage formation in relation to that before opposite-sex marriage formation. It shows that a stable proportion of women (a little less than 20%) and men (a little less than 10%) who enter same-sex marriage have children at that time. For opposite-sex marriages we find an increasing share of women (more than 50%) with premarital children at entry into marriage, consistent with our Appendix Figure 2 on trends in first marriage formation by parity.

Figure 3: Annual proportions of women and men that enter first same-sex and opposite-sex marriage who are parents at the time of marriage formation, Swedish-born men and women at ages 16-48.

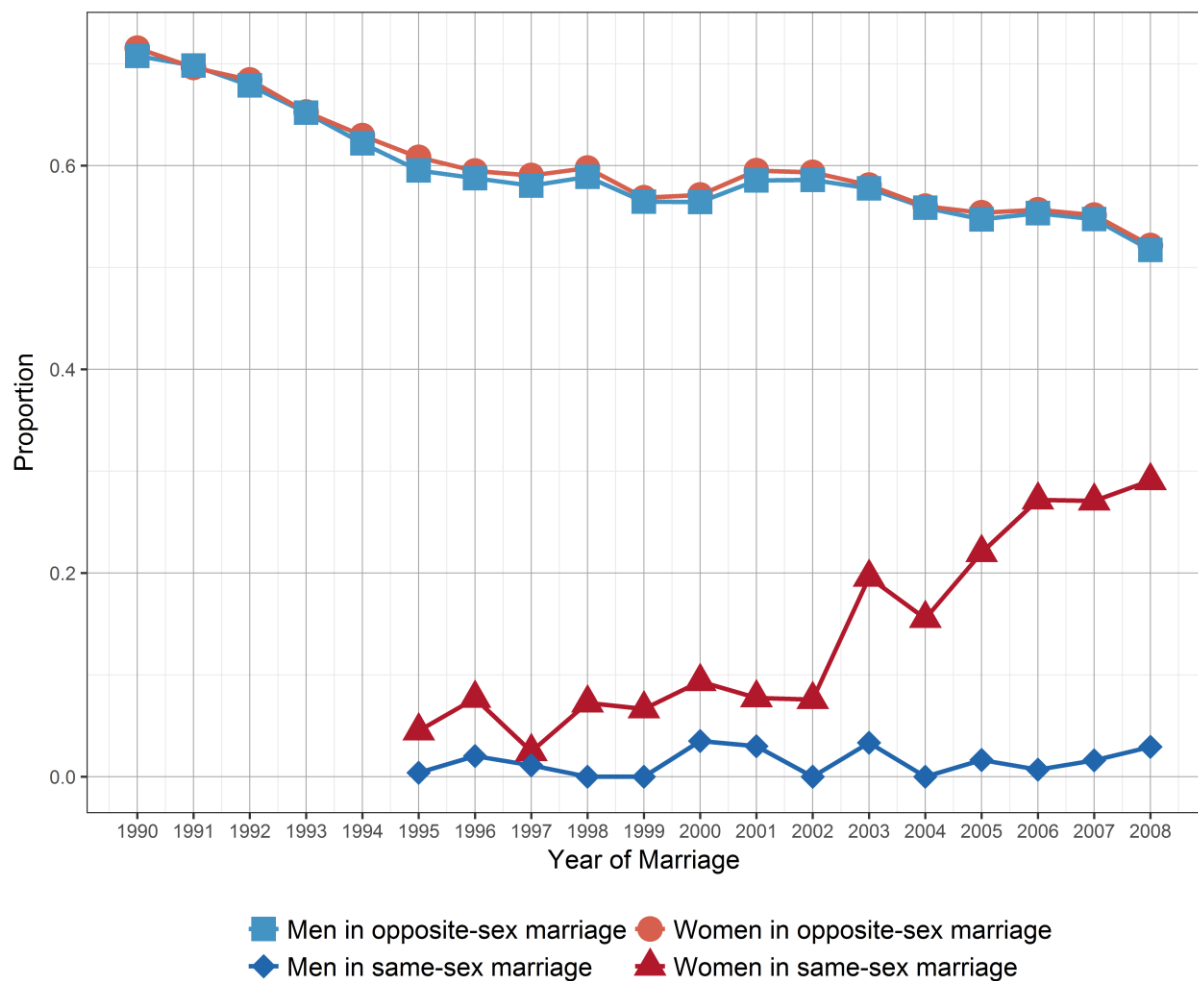


Source: Swedish register data, authors' own calculations

Another and more recent phenomenon is that of increasing childbearing after same-sex marriage formation (Aldén et al. 2015), which provides evidence for the increasingly important link between marriage and parenthood for lesbian partners in particular. Unlike many cases of premarital childbearing, these indeed occur in relation with the other same-sex spouse. Figure 4 demonstrates the levels of own individual childbearing after marriage formation, by type of marriage and marriage cohort. We observe all spouses during their first five years of marriage, which makes our analyses end in 2008. We demonstrate that while childbearing was relatively uncommon after same-sex marriage formation in the 1990s, it began to increase substantially for women after the legal changes implemented in the early

2000s. Men have consistently had very low proportions of marital childbearing. In the last marriage cohorts for which we have data during a five-year follow-up, some 20-30% of individual women in same-sex marriages had a child during the follow-up. Evidently, when these numbers are aggregated to the couple level these fractions become much larger.

Figure 4: Annual proportions of women and men in first same-sex and opposite-sex marriages that had a child within five years of marriage formation, Swedish-born men and women at ages 16-48.



Source: Swedish register data, authors' own calculations

Our childbearing data pertain to records of own biological children, as registered by Swedish authorities. This holds for women as well as for men. Still, by linking spouses to each other and biological and adopted children to their parents it is possible to derive additional, though still partial information on further aspects of parenting in same-sex unions. Evidently, the opportunities to become a parent are much larger for women than for men in same-sex

marriages. This holds for possibilities for own biological motherhood by means of assisted reproduction (Rozental and Malmquist 2015) as well as opportunities for second-parent adoption (Malmquist 2015b). We also note that the childbearing history of just one spouse in a same-sex marriage does not cover what happens at the couple level. In order to study this in better detail, we further examined whether any or both partners in a new marriage had another registered child within the first five years of marriage. Such an analysis (see Appendix Figure 3) shows that almost 50% of all female same-sex marriages that were formed in 2008 produced at least one new child during the first five years of marriage. In 7% of female same-sex marriages formed in that year, both women gave birth to a child. The level of childbearing in female same-sex marriages is thus comparable to current levels in opposite-sex marriages. However, the dynamics do not simply mirror what happens in opposite-sex marriages. For same-sex marriages, it is essential to analyze both spouses simultaneously to assess the combined fertility, births can potentially also be spaced much closer than in opposite-sex unions.

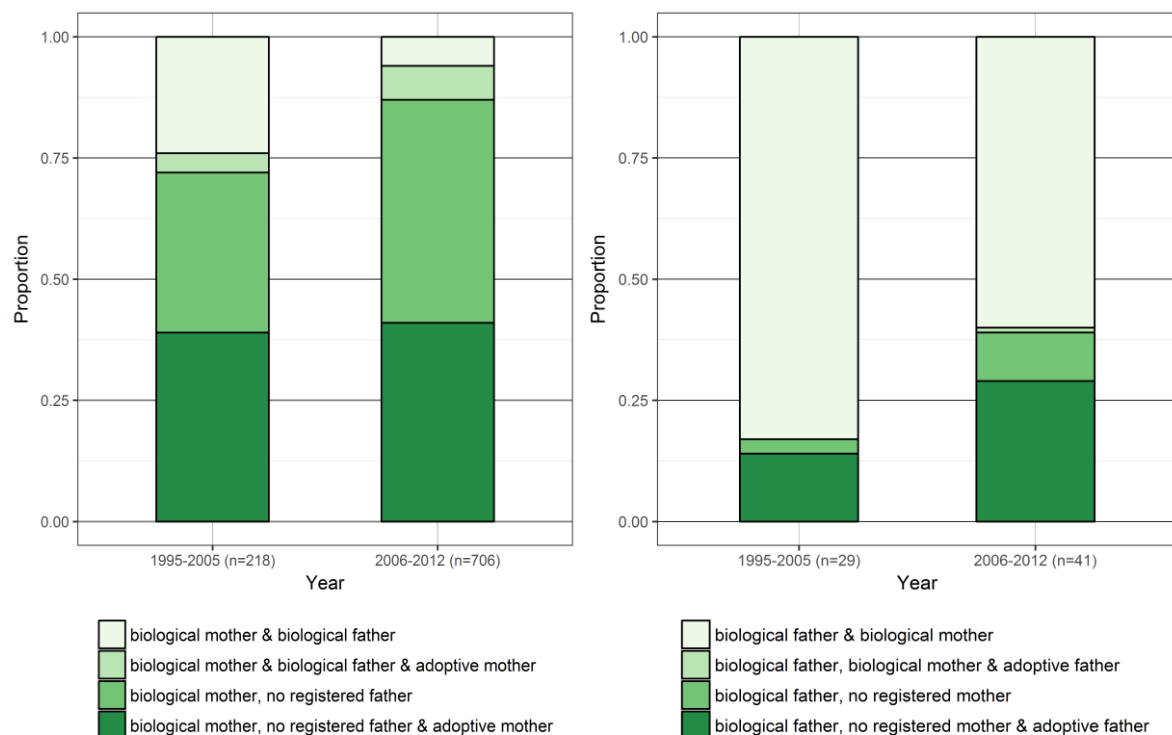
Adoptions also matter for same-sex parenting. Since 2003, adoption in same-sex couples has been available to partners in a registered partnership or marriage (Malmquist 2015b). In general, in Sweden, there is very little domestic adoption (Barclay 2015; Johansson 2011) and same-sex spouses often face difficulties when donor countries decline same-sex adoptive parents. These restrictions are most severe for gay couples. However, since 2003 there has been an increasing number of second-parent adoptions, in which the spouse of one partner adopts the biological (or adopted) child of the other spouse (Malmquist 2015b). In 82% of cases, these adoptions take place during the first year of the child's life. The practice is overwhelmingly concentrated to female same-sex unions and requires the formation of a registered partnership / marriage. Further, in 2005, same-sex couples in Sweden got the legal right to medically assisted reproduction at low cost and on the same terms as opposite-sex couples, which has been widely accessible to lesbian spouses (Rozental and Malmquist 2015). The latter development is partly reflected in Figure 4. In these cases, the partner can be granted automatic parental rights without the process required for second-parent adoption.

In additional analyses, we produced data on the family situation of children born to mothers and fathers in registered partnerships and same-sex marriages (Figure 5). As before, these data refer to the (registered) biological children of a Swedish-born mother or father during the first five years of a same-sex marriage. Most children were born in a female same-sex marriage. The data show that for a vast majority of these children the father is un-known in

the register. In some of these cases, this is due to assisted reproduction that has been carried out outside Sweden, often in Denmark where assisted reproduction is offered with less formal requirements in terms of, for example, the registration of a biological father (Malmquist 2015a). In 40-50% of cases, the child has also a registered adoptive mother. Figure 5 distinguishes between children born during 1995-2005 and 2006-2012, i.e., those born before and after the legal reforms related to parenting in same-sex unions. We note that it was much less common for children born in the latter sub-period to have a registered biological father.

For children born to men in a same-sex marriage the picture is different. In the majority of cases the child also has a registered biological mother in Sweden. Our register data contain no further information on legal custodians of the children involved.

Figure 5: Proportions of children born to a biological mother (left panel) and father (right panel) in a same-sex marriage in Sweden with different constellations of registered parents. Data for the first biological child to a Swedish-born mother or father within five years of same-sex marriage formation. Children born before and after the availability of assisted reproduction in 2005.

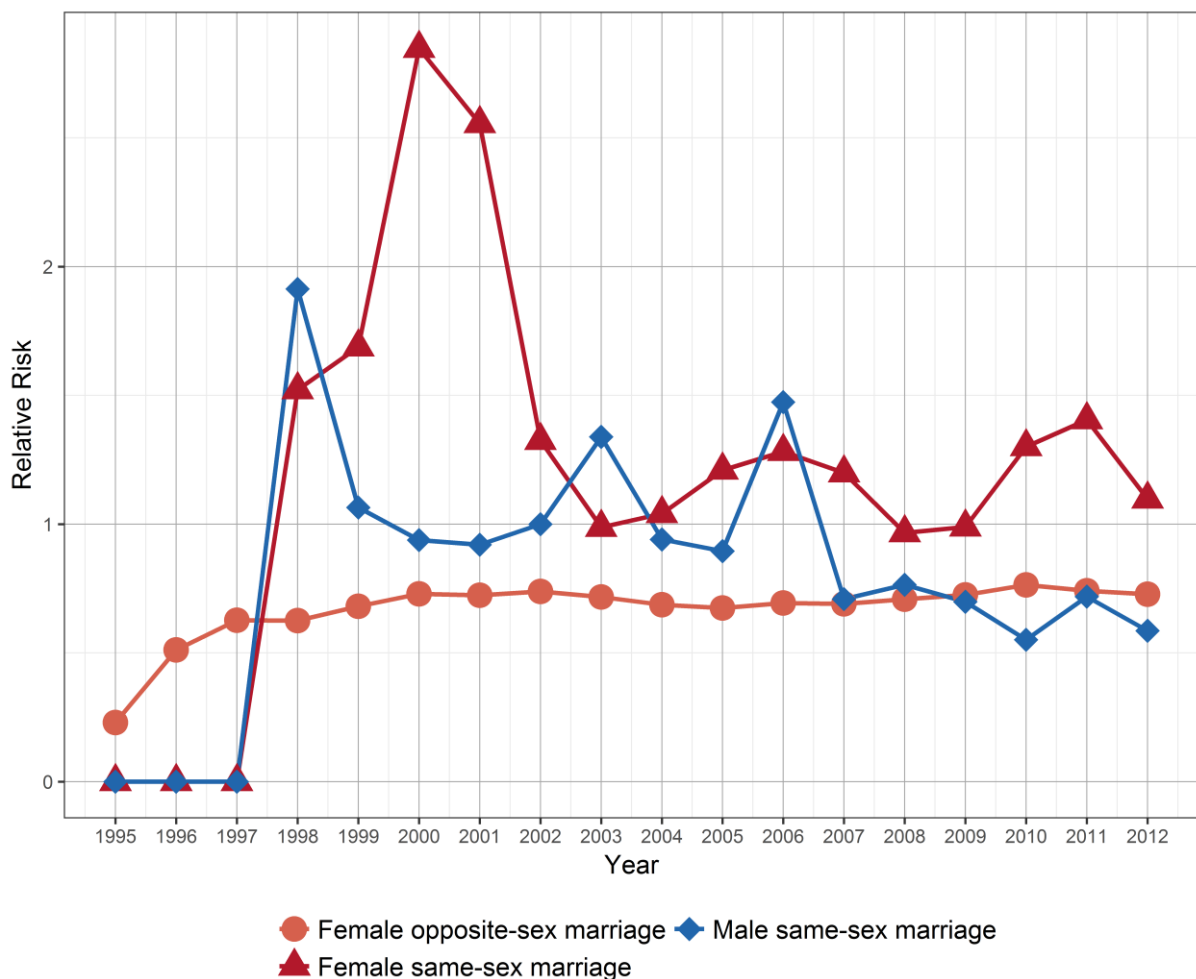


Source: Swedish register data, authors' own calculations.

Changes in divorce risks in same-sex marriages, 1995-2012

Following our analyses of entry into marital unions we also present information on the dissolution of same-sex unions, with comparisons to divorce risks in opposite-sex marriages. In Figure 6 we present how the divorce risks for women and men in same-sex marriages have changed over time. Divorce risks are somewhat lower at the end of the study period than during earlier years. People in same-sex marriages have higher divorce risk than those in opposite-sex marriages though the differences have declined over time. There is thus some evidence of a convergence of the dynamics in same-sex and opposite-sex marriages.

Figure 6: Relative risks of divorce in Sweden, by calendar year and type of marriage, 1995-2012. Risks relative to that of men in same-sex marriages in 2002. Risks are standardized for duration of marriage, age group, and parity.



Note: The comparison is based on marriages formed during 1995-2012

Source: Swedish register data, authors' own calculations

There are also substantive differences in the divorce risks of women and men in same-sex marriages. In the late 1990s and early 2000s women had very high divorce risks (cf. Andersson et al. 2006), much higher than for men in same-sex marriages and for people in opposite-sex marriages. For some years women in same-sex unions had up to four times as high divorce rates as people in opposite-sex unions. These differences have declined somewhat over time, but female same-sex marriages still more often end in divorce than do male same-sex and opposite-sex marriages. The divorce risk for men in same-sex marriages has declined over time and in the early 2010s it approached the divorce risk of spouses in opposite-sex marriages. In the last years of study, women in same-sex unions have about twice as high divorce risks as both men in same-sex unions, and women and men in opposite-sex unions. This pattern appears to have stabilized with no major changes across years and might be indicative of a more stable long term pattern. There is no evidence of any major change in divorce risks after the introduction of formal same-sex marriage legislation in 2009, though our short follow-up period makes such changes hard to identify. We note that the divorce risks in opposite-sex marriages were largely stable during our study period (cf. Andersson and Kolk 2015). The full results for the models in Figure 6 are available in our Appendix Table 2.

In Figure 7a we graph the cumulative incidence of divorce for women and men in same-sex marriages as compared to people in opposite-sex marriages. Unlike our event history models these models do not standardize for any further demographic variables (such as age, calendar period, and parity) and they do not depict the instantaneous intensity of getting divorced. However, the description is based on the same study design as before and it confirms the picture from our previous analyses. The tendency to divorce is highest among same-sex married women, followed by same-sex married men and opposite-sex married spouses. Same-sex marriages seem to be particularly unstable at very brief periods after marriage formation, as compared to the dynamics in opposite-sex marriages. After 15 years of follow-up approximately 30% of male same-sex marriages and opposite-sex marriages have ended in divorce, while 40% of female same-sex marriages ended that way.

Figure 7b provides further insight into these dynamics by restricting the study to cover only childless unions. In this case, we present the cumulative incidence of divorce by using a life table approach where we censor individuals when becoming a parent. This serves to show that while the pattern for same-sex marriages change relatively little as compared to the patterns in Figure 7a (parenting is still less common in these marriages), childless opposite-

sex marriages are under significantly higher risk of divorce than when all marriages are considered (cf. Andersson 1997). Among childless marriages, same-sex marriages of men have the lowest probability to end in divorce.

Figure 7a: Cumulative proportion divorced, by type of marriage in Sweden, 1995-2012.

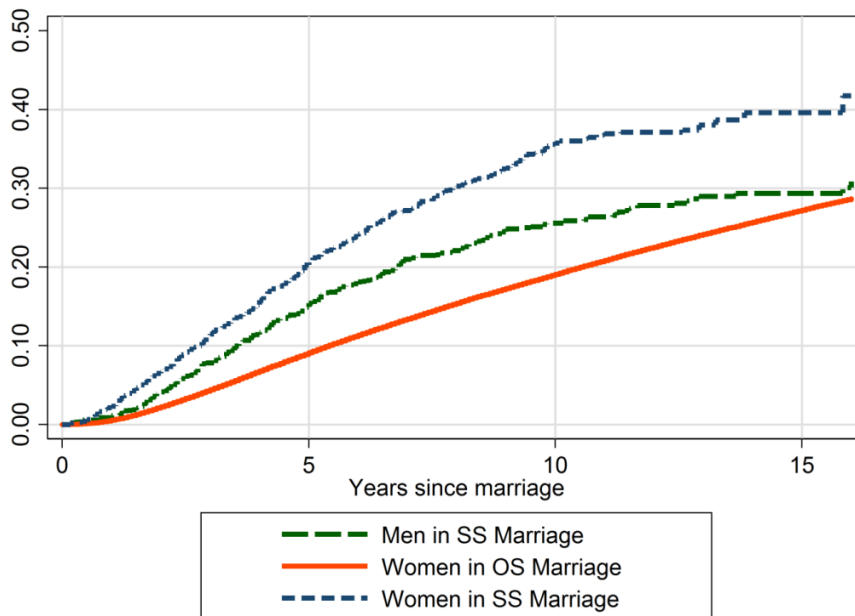
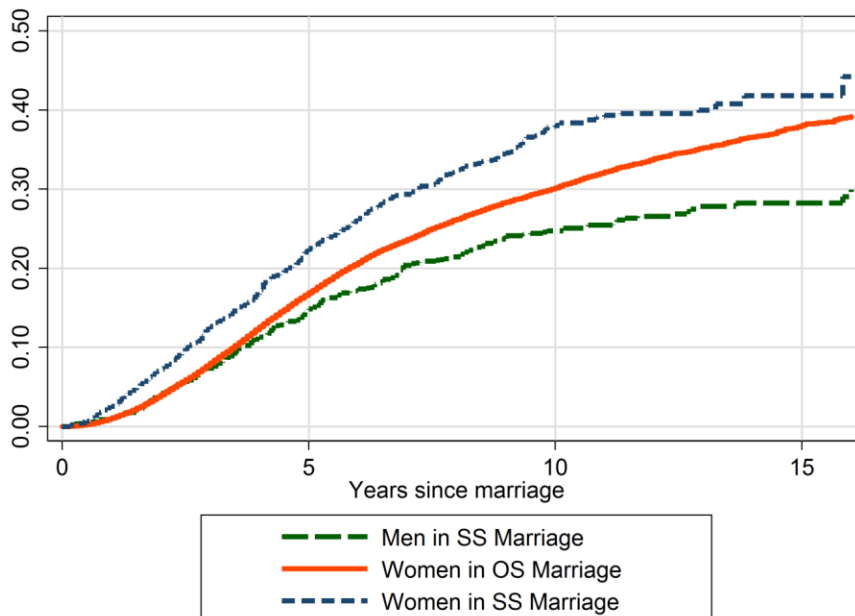


Figure 7b: Cumulative proportion divorced, by type of marriage in Sweden, 1995-2012. Marriages of childless women or men, with censoring at entry into parenthood.



Source: Swedish register data, authors' own calculations

Discussion

Our study demonstrated a number of new developments as well as continuities in the dynamics of same-sex marriage and divorce in Sweden during 1995-2012. We observed a continuous increase over time in the prevalence of same-sex registered partnerships and marriages, albeit from low levels. This holds for female same-sex marriages in particular; it happened in parallel with simultaneous increases in the propensity of Swedish women and men to form opposite-sex marriages (cf. Ohlsson-Wijk 2011; Andersson and Kolk 2015). In the final years of our study period, this increase seems to have leveled off, and also this trend change appears to have happened in tandem with a similar leveling off in the trends of opposite-sex marriage formation (Andersson and Kolk 2015). To some extent, the positive correlation of same-sex and opposite-sex marriage trends may signal a normalization of same-sex marriage dynamics where the different contextual factors that may make marriage more or less attractive affect same-sex and opposite-sex couples in a similar manner.

Our study also confirmed previous observations from Sweden and other Nordic countries (Andersson et al. 2006; Andersson and Noack 2010) of cross-overs in the same-sex marriage formation of women and men so that this family type has become increasingly female-dominated. Similar findings have been observed in other but not all countries (Andersson et al. 2006; Chamie and Mirkin 2011; Cortina et al. 2012; Ross, Gask and Berrington 2011), though the large overrepresentation of female same-sex marriages in Sweden appears rare in an international perspective. Our extended follow-up period allowed us to demonstrate super risks of same-sex marriage formation of women versus men that may not have been observed before, even though different state-level statistics from the United States also suggest a strong overrepresentation of female same-sex marriages (Chamie and Mirkin 2011).

Another recent phenomenon which deserves further attention is the increasing prevalence of childbearing in female same-sex marriages (Aldén et al. 2015; Wiik et al. 2014). We demonstrated that about half of female same-sex registered partnerships or marriages at the end of our study period were accompanied by the subsequent childbearing of at least one of the two partners involved. Other spouses bring children from a previous relationship to the new marriage. The empirical evidence suggests that recent policy changes in relation to parental rights were crucial in driving the trends of increasing marriage formation of lesbian women as only the registered partnership or marriage provides the necessary means to assure a spectrum of parental rights. Evidently, the possibilities for gay couples to realize any

childbearing desires are much more limited than what they are for women.

Our results for the divorce risks in same-sex marriages also show a few changes as well as continuities in their developments over time. There is some evidence of a convergence of divorce risk levels in opposite- and same-sex marriages. This is particularly pronounced for male same-sex marriages, which show divorce risks that are entirely similar to those of opposite-sex marriages at the end of the study period. The elevated divorce risks among same-sex marriages reported for Sweden in earlier research (Andersson et al. 2006) are no longer as pronounced as they were in the 1990s. For childless marriages, the differences between opposite- and same-sex marriages are even smaller; male same-sex marriages show substantively lower dissolution rates than childless opposite-sex marriages. It may be the case that the normalization of same-sex marriages in Sweden has contributed to making the demographic behavior of same-sex couples increasingly similar to that of their heterosexual peers.

Still, the averages of statistics for same-sex couples of women and men are pretty meaningless as the differences in divorce risks between female and male same-sex marriages are much larger than the differences between opposite-sex marriages and the combined population of same-sex couples. Our study confirms that the previously reported pattern of elevated divorce risks in couples of two women (Andersson et al. 2006) remains intact. Meanwhile, similar patterns of elevated divorce or union dissolution risks of couples of two women as compared to those of two men have been reported in most other contexts where data on legally recognized same-sex unions are available, including Norway (Wiik et al. 2014), Denmark (Andersson and Noack 2010), Belgium, the Netherlands and Spain (Chamie and Mirkin 2011), England and Wales (Ross et al. 2011) and the United States (e.g. Ketcham and Bennett 2016; Rosenfeld 2014); for further cross-country surveys, see, e.g., Bennett (2017) and Marteau (2017).

A key contribution of our study is that it was based on longitudinal and reliable demographic data in terms of registered civil-status changes during a period of almost two decades and the application of appropriate longitudinal demographic methods to these data. In terms of methods, we demonstrated the importance of relying on demographic rates and life table techniques in order to properly study changes in levels of marriage formation and divorce over time. A multivariate approach is important when studying the rates of opposite-sex and same-sex marriage formation, as the age profiles of different types of marriage formation

differ substantially and with them the corresponding exposure times under risk of getting married (cf. Appendix Figure 1). The size of our data also allowed us to calculate stable survivor functions by means of the fractions of people that remain in the different types of marriage. This shows that a relative risk of divorce that is about double as high for female same-sex marriages as compared to opposite-sex marriages and marriages of two men translates into cumulative fractions of ever divorced spouses at the levels of 40 and 30%, respectively.

In our introduction, we posed a number of specific research questions regarding whether reforms related to the legal recognition of parental rights in same-sex unions or rather those related to the status and label of marriage as such may have mattered the most for the dynamics of same-sex marriage formation and divorce. Our evidence is very clear in that the former factor seems to matter a lot while the latter factor largely goes unnoticed in terms of any impact on same-sex family-demographic trends. It also becomes clear that the impact of changing policy and legal frameworks has been much more pronounced in the family dynamics of female couples than in couples of two men. The policy change in 2003 indeed appears to have been crucial. This was the first time that parental rights of two persons of the same sex was explicitly acknowledged in the law. It supported the practice of second-parent adoption, which like other procedures for adoption in Sweden require that the two partners are married (or in a registered partnership). The subsequent policy change in 2005 provided additional regulation and procedures for parenthood that offered prospective parents in same-sex unions additional incentives to get married. With the introduction of these reforms the rates of female same-sex marriage formation began its long-term increase; after their introduction the divorce risks in couples of two women have also been lower than what they were before the reforms. As a matter of fact, the legal status attached to marriage often matters more for same-sex spouses than what it does for women and men in opposite-sex unions, as parental rights in Sweden are otherwise only weakly related to parents' marital status. We speculate that the increasing prevalence of children in female same-sex marriages may keep making the demographic dynamics of male and female same-sex couples very different also in the future.

In contrast, we find that the introduction of gender-neutral marriage legislation and formal same-sex marriages in Sweden in 2009 did not appear to have affected trends in same-sex marriage dynamics to any visible extent. A further inspection of our data also reveals that relatively few couples reacted to the possibility to transform their existing registered

partnership to a marriage (about a quarter of couples during our follow-up in 2009-2012). The weak effect of formal same-sex marriage legislation suggests that when the underlying legal differences between registered partnership and formal marriage are minor (Andersson and Noack 2010), “symbolic” changes in the labeling of unions appear relatively unimportant in individual decisions whether to marry. This situation may be very different from that in, for example, the United States, where marriage is ascribed a much more normative and ideological status than what is the case in most countries in Europe (Cherlin 2009).

Our study underlines the striking pattern of what we may label the feminization of same-sex marriage dynamics. Evidently, women are much more prone than men to both enter and dissolve same-sex marriages. To some extent, these gender-specific differences relate to differences in behavior that can be observed for women and men in opposite-sex couples, where women often initiate marriage but are also more likely than men to initiate divorce (e.g. Hewitt, Western and Baxter 2006; Kalmijn and Poortman 2006). A study from Norway showed that women in same-sex registered partnerships in that country were more prone than male partners to transform their partnership into a marriage when similar legislation as that in Sweden was introduced in 2009 (Wiik, Seierstad and Noack 2016). Divorce may sometimes be traumatic, and not less so if partners are exposed to the additional burden of minority stress (Balsam, Rostosky and Riggle 2017). It may still be the case that divorce is stimulated by women often being more sensitive than men to different aspects of relationship quality (e.g. Shieh 2016). In heterosexual couples, women often report that they are less satisfied than men with their unions (Wiik, Keizer and Lappegård 2012). A more recent body of literature from the United States instead highlights other dimensions of couple dynamics than those we cover. Based on survey data that also include information on dating and Living-Apart-Together relationships it suggests that gay men may instead be more prone than lesbians to initiate and terminate dating and couple formation (Joyner et al. 2017; Orth and Rosenfeld 2018). An interesting feature of this literature is that it also highlights the similarities in behavior of women and men in same-sex couples in relation to those of heterosexual women and men and the importance of childhood socialization in creating gender-specific behaviors in relation to couple dynamics (Orth and Rosenfeld 2018).

We conclude with some reflections on research on divorce and divorce risks in same-sex marriages. In most developed societies marriage and divorce are considered basic human rights, while in other contexts, divorce may be a more controversial issue. Cherlin (2009) highlights that in most countries in Europe, issues of parenting in same-sex couples have

tended to be more controversial than those related to granting same-sex couples the right to legalize their unions. Registered partnerships have been introduced in many more countries in Europe than what have allowed for the adoption of children to same-sex unions (Davis 2013; see also Waaldijk et al. 2017). This story also fits the Swedish case where the registered partnership paved the way for the legal recognition of parenting in same-sex couples, which in turn made the gender-neutral marriage legislation something of a *fait accompli*. In the United States the situation has been somewhat different with adoption rights often less controversial than other aspects of the democratization of marriage to also include couples of the same sex (Cherlin 2009). To put our results on divorce risks in same sex marriages in international context we note that the elevated divorce risks in female same-sex marriages in Sweden are very similar to those observed for opposite-sex marriages in the United States (Andersson and Philipov 2002; Andersson, Thomson and Duntava 2017).

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Appendix materials

Table A1: Event history model on the risk of first same-sex marriage formation, men and women in Sweden, including the interaction of calendar period and sex

		Relative risks	95% C.I.	
Period - Same-sex men				
1995		1.54	1.23	1.94
1996		0.65	0.49	0.85
1997		0.63	0.48	0.83
1998		0.59	0.44	0.79
1999		0.72	0.54	0.94
2000		0.94	0.72	1.22
2001		0.85	0.65	1.11
2002		1		
2003		1.12	0.86	1.44
2004		1.48	1.16	1.88
2005		1.21	0.93	1.56
2006		1.45	1.13	1.86
2007		1.30	1.00	1.68
2008		1.46	1.13	1.87
2009		1.68	1.32	2.15
2010		2.27	1.80	2.85
2011		2.13	1.69	2.69
2012		1.95	1.53	2.47
Period - Same-sex women				
1995		0.76	0.58	0.99
1996		0.55	0.41	0.73
1997		0.62	0.46	0.82
1998		0.56	0.41	0.75
1999		0.76	0.58	1.01
2000		0.95	0.72	1.23
2001		1.36	1.06	1.74
2002		1.34	1.04	1.73
2003		2.02	1.60	2.55
2004		2.34	1.86	2.95
2005		2.96	2.37	3.71
2006		3.58	2.88	4.46
2007		3.65	2.93	4.55
2008		5.08	4.11	6.28
2009		5.75	4.67	7.10
2010		6.74	5.48	8.29
2011		7.99	6.51	9.80
2012		7.36	5.99	9.05

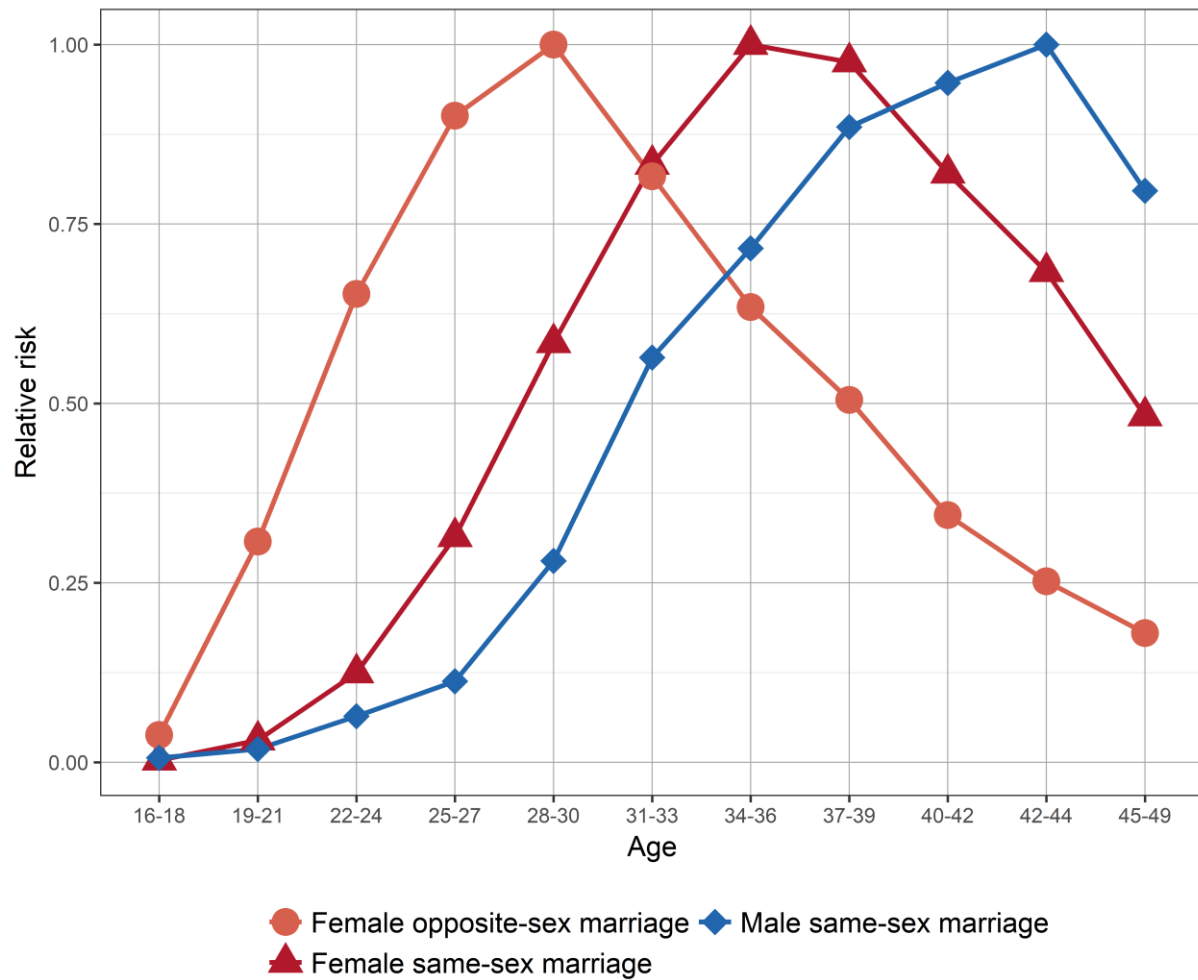
Parity				
	0	1		
	1	0.17	0.15	0.20
	2	0.05	0.05	0.06
	3+	0.05	0.04	0.06
Age				
	16-18	0.02	0.01	0.03
	19-21	0.11	0.09	0.14
	22-24	0.44	0.39	0.51
	25-27	1		
	28-30	1.79	1.62	1.99
	31-33	2.52	2.28	2.78
	34-36	2.64	2.38	2.92
	37-39	2.24	2.02	2.49
	40-42	1.59	1.43	1.77
	43-44	1.15	1.03	1.29
	45+	0.69	0.61	0.77
Previous opposite-sex marriage				
	No	1		
	Yes	0.38	0.35	0.42

Table A2: Event history model on divorce risks in first marriages, men and women in same-sex marriages and women in opposite-sex marriages, with interaction of period and type of marriage

	Relative risks	95% C.I.	
Period - Same-sex men			
1995	0.00	0	.
1996	0.00	0	.
1997	0.00	0	.
1998	1.91	1.04	3.51
1999	1.06	0.55	2.05
2000	0.94	0.49	1.79
2001	0.92	0.49	1.72
2002	1		
2003	1.34	0.78	2.30
2004	0.94	0.53	1.66
2005	0.90	0.51	1.57
2006	1.47	0.89	2.44
2007	0.71	0.40	1.25
2008	0.76	0.44	1.33
2009	0.70	0.40	1.22
2010	0.55	0.31	0.98
2011	0.72	0.42	1.24
2012	0.59	0.33	1.03
Period - Same-sex women			
1995	0.00	0	.
1996	0.00	0	.
1997	0.00	0	.
1998	1.52	0.70	3.31
1999	1.69	0.88	3.25
2000	2.85	1.67	4.87
2001	2.56	1.52	4.31
2002	1.32	0.75	2.34
2003	0.99	0.55	1.76
2004	1.04	0.60	1.80
2005	1.21	0.72	2.02
2006	1.28	0.78	2.10
2007	1.20	0.73	1.96
2008	0.97	0.59	1.58
2009	0.99	0.61	1.61
2010	1.30	0.82	2.07
2011	1.41	0.89	2.22
2012	1.10	0.69	1.74
Period - Opposite-sex women			
1995	0.23	0.13	0.41
1996	0.51	0.33	0.79

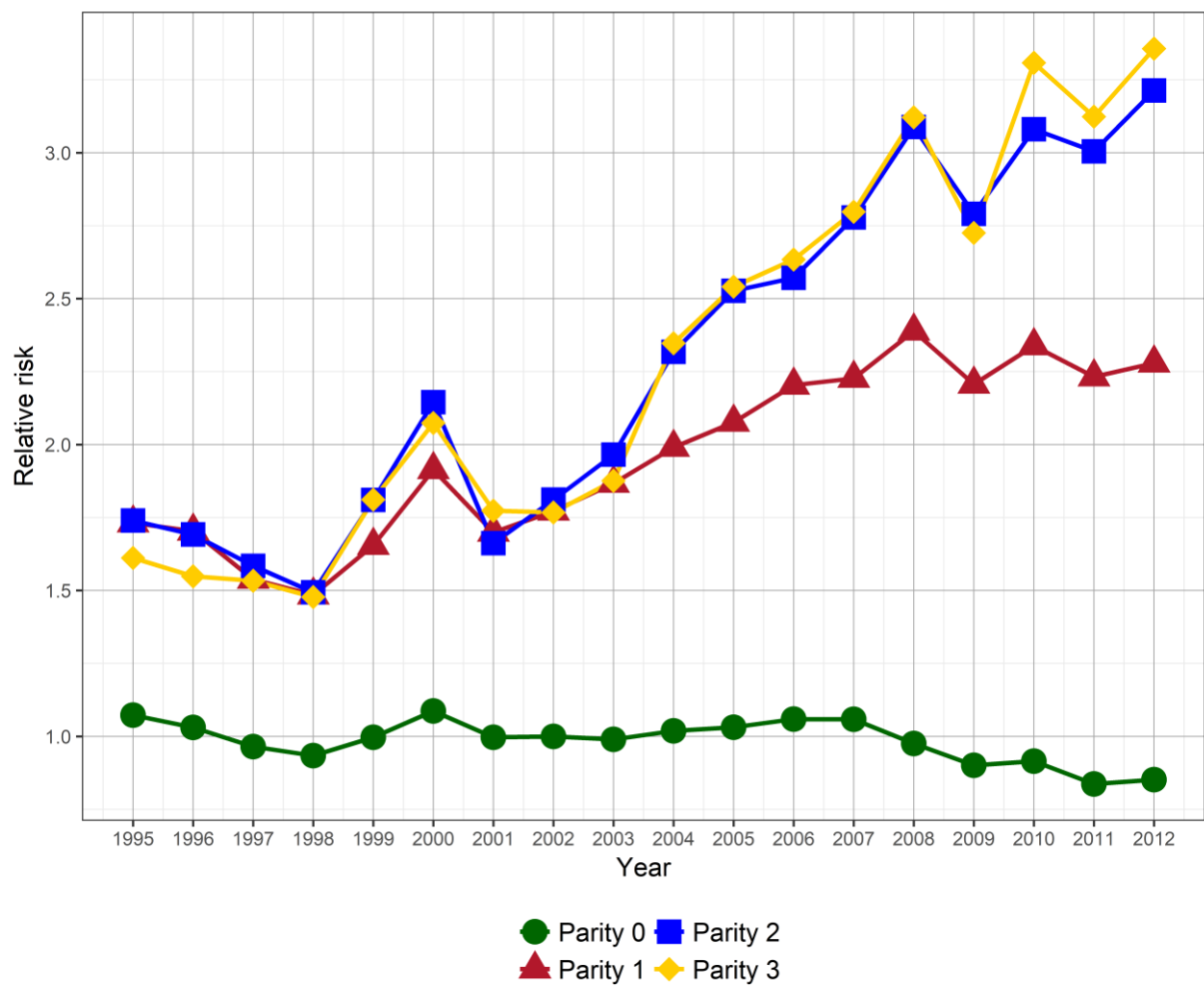
	1997	0.63	0.41	0.96
	1998	0.63	0.41	0.95
	1999	0.68	0.45	1.04
	2000	0.73	0.48	1.11
	2001	0.72	0.48	1.10
	2002	0.74	0.49	1.12
	2003	0.72	0.47	1.09
	2004	0.69	0.45	1.04
	2005	0.67	0.44	1.03
	2006	0.69	0.46	1.06
	2007	0.69	0.45	1.05
	2008	0.71	0.47	1.08
	2009	0.73	0.48	1.10
	2010	0.76	0.50	1.16
	2011	0.74	0.49	1.13
	2012	0.73	0.48	1.11
Parity	0	1		
	1	0.40	0.39	0.41
	2	0.41	0.40	0.42
	3+	0.47	0.45	0.48
Age	16-18	4.40	3.22	6.02
	19-21	2.74	2.56	2.92
	22-24	1.65	1.58	1.72
	25-27	1		
	28-30	0.66	0.64	0.68
	31-33	0.49	0.47	0.50
	34-36	0.40	0.39	0.42
	37-39	0.35	0.34	0.37
	40-42	0.31	0.30	0.32
	43-44	0.27	0.26	0.29
	45+	0.23	0.22	0.24
Duration of marriage	0-1 year	0.11	0.11	0.12
	1-2 years	0.46	0.44	0.47
	2-3 years	0.76	0.74	0.79
	3-4 years	1		
	5-6 years	1.23	1.19	1.26
	7 -10 years	1.45	1.40	1.49
	11-15 years	1.61	1.55	1.67

Figure A1: Relative risks of first marriage formation in Sweden, by age group, 1995-2012. Separate models for same-sex and opposite-sex marriage formation. Risks are given relative to that of the age group with the highest marriage intensity. Risks are standardized for calendar year, parity, and the experience of any previous opposite-sex marriage (for same-sex marriages).



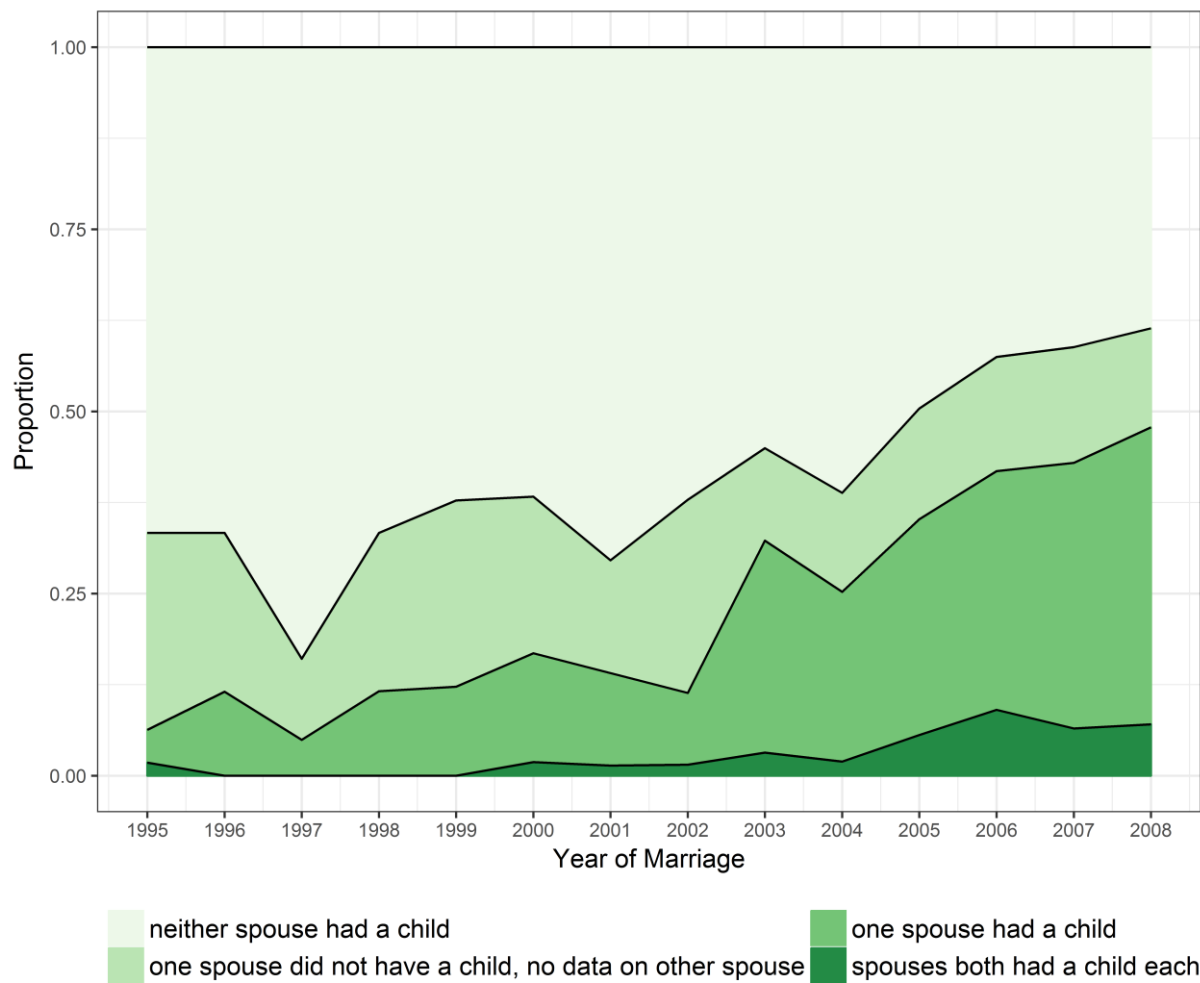
Source: Swedish register data, authors' own calculations

Figure A2: Relative risks of first opposite-sex marriage formation for women in Sweden, by calendar year and parity, 1995-2012. Risks relative to that of childless women in 2002. Risks are standardized for age.



Source: Swedish register data, authors' own calculations

Figure A3: Proportion of same-sex marriages of women entered between 1995 and 2008, by childbearing experience within five years from marriage formation.



Source: Swedish register data, authors' own calculations. In order for a woman to be included as an index person she has to be Swedish-born and younger than 49. Women in Figure A3 with missing data on her partner include those whose partner did not meet these criteria.