

The effects of recessions on family formation

Fertility and marriage rates are pro-cyclical in many countries, but the longer-term consequences are inconclusive

Keywords: fertility, marriage, business cycle conditions

ELEVATOR PITCH

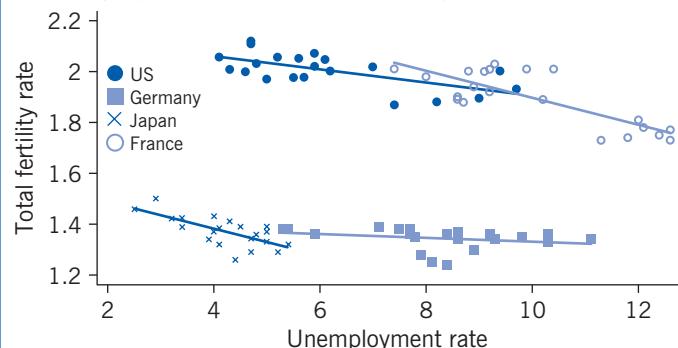
Low fertility rates are a cause of social concern in many developed countries, with growing youth unemployment often being considered a primary cause. However, economic theory is not conclusive about whether deterioration in youth employment prospects actually discourages family formation or for how long the effect might persist. In addition, recessions can affect the divorce rate. Therefore, understanding the relationship between labor market conditions and family formation can provide important insights into the type of policies that would be most effective in promoting fertility.

KEY FINDINGS

Pros

- ⊕ Recessions have an effect on family formation, but it is important to distinguish the short-term effects on contemporaneous marriage and fertility rates, and the long-term effects for cohorts exposed to a recession in youth.
- ⊕ Fertility tends to be pro-cyclical in many developed countries, at least in the short term, thus decreasing during economic downturns.
- ⊕ Younger women's fertility and the number of first births are more responsive to labor market conditions than the fertility of older women and the number of second, or higher-order, births.
- ⊕ Better labor market conditions for young men increase marriages and number of children in the long term.

Unemployment rate and total fertility rate, 1993–2013



Source: Author's own calculations based on World Bank. World Development Indicators, 2015. Online at: <http://data.worldbank.org/>

Cons

- ⊖ It is theoretically ambiguous how business cycle conditions affect family formation, because the effects from less income during a recession versus less opportunity costs from raising children can move in different directions.
- ⊖ The sensitivity of the fertility rate to the prevailing business cycle conditions differ across countries and demographic groups.
- ⊖ There is no consensus on the effects of recessions on divorce rates.
- ⊖ The long-term effect of a recession experienced by young women is inconclusive, and depends on family and labor market policies.

AUTHOR'S MAIN MESSAGE

Although fertility and marriage rates tend to move in the same direction as the prevailing economic trends, their sensitivity to business cycles differ across countries and demographic groups. Fertility can even increase in recessions if the positive effect of the foregone (lower) wages for women is greater than the negative effect of having less household income. Government intervention can affect the extent to which labor market conditions matter. Family-friendly policies, such as improving childcare provision and family subsidies, can weaken the impact of labor market conditions and have positive effects on family formation.

MOTIVATION

Since the Great Recession in the late 2000s, many developed countries have experienced a fall in fertility rates and increases in unemployment and non-regular employment among young adults. In view of the concurrence of these events, increased youth unemployment has often been blamed for the declining fertility and marriage rates. Economic theory, however, is not clear on whether young couples are deterred from forming a family when they face lower prospects of employment.

A further issue is whether the observed decline in the fertility rate actually leads to a decline in the total number of children born by the affected cohorts. A permanent decline in fertility of a particular cohort has quite different implications for demographic trends and public welfare than a mere delay in the timing of fertility.

Furthermore, understanding how business cycles, that is, the prevailing economic conditions, affect marriage formation and marital stability can provide important insights into how to design more effective policies that promote family formation and sustainability.

DISCUSSION OF PROS AND CONS

Distinction between short-term and long-term effects

When considering the effect of a recession on family formation, it is important to distinguish the short-term effects on fertility and marriage rates, and the longer-term effects on the cohorts who were exposed to a recession as young adults.

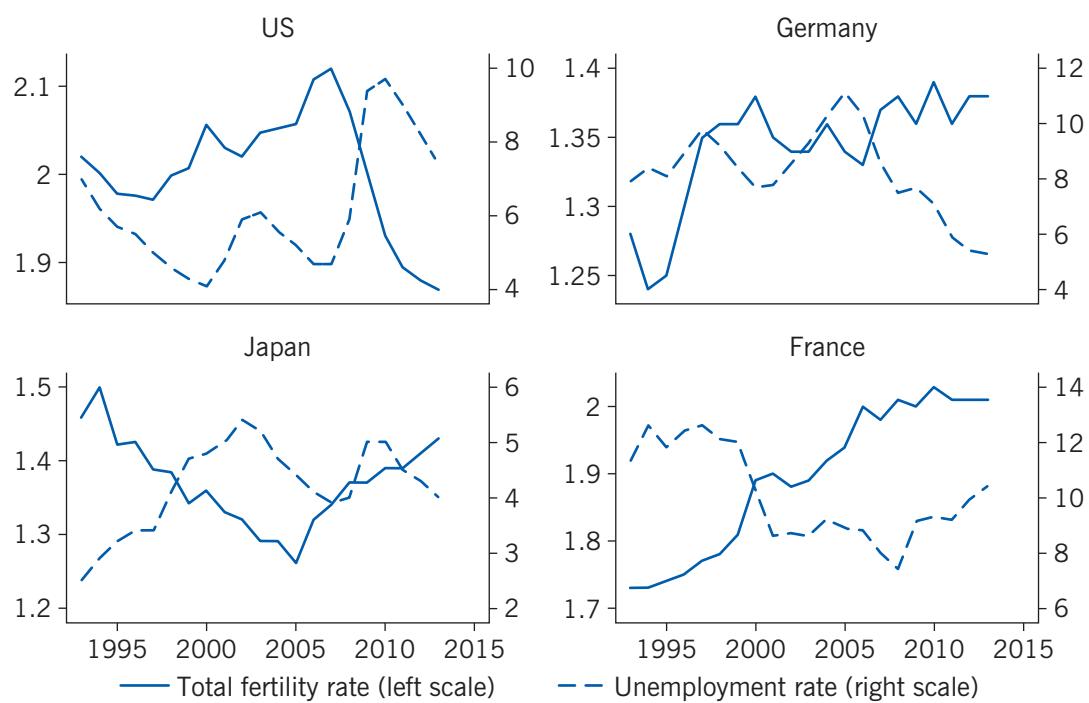
Even when short-term effects exist it does not necessarily imply a permanent decrease in fertility or marriage among the affected cohort, as each individual can adjust the timing of family formation without necessarily changing the long-term outcomes, that is, the number of children. Indeed, a large part of the short-term response of family formation behavior appears to be attributable to this kind of intertemporal adjustment. The longer-term effects of a recession during young adulthood are, therefore, perhaps weaker than the short-term effects.

Short-term effects: pro-cyclical fertility and marriage in developed countries

In many developed countries, fertility moves in the same direction as the prevailing economic conditions, that is, it is pro-cyclical [1], [2]. Figure 1 illustrates time series of the total fertility rates and the unemployment rates in selected countries. With the exception of Germany, where no clear relationship between fertility and unemployment rates is observed, fertility rates move in the opposite direction to the unemployment rates. That is, fertility rates are high under good economic conditions with little unemployment and low when unemployment is high.

Although the graphs shown in Figure 1 are simple time series and may be picking up a spurious coincidence of trends (which is indeed the case for Japan), more rigorous research also confirms pro-cyclical fertility in the US and southern and eastern-central Europe [1], [2]. However, the size of the effect seems to be modest—for example, for women aged 20–24 in the US, a one percentage point increase in the unemployment rate leads to 6% fewer births [1]. In other countries, such as Germany, the correlation

Figure 1. Total fertility rates and unemployment rates in four selected countries, 1993–2013



Note: “Total fertility rate” refers to the average number of children born to a woman during her “child-bearing” lifetime, which is conventionally considered to be 15–44 or 15–49 years.

Source: Author's own calculations based on World Bank. World Development Indicators, 2015. Online at: <http://data.worldbank.org/>

between fertility and business cycle conditions seems to be weak, and in recent decades it is very rare to observe counter-cyclical fertility in developed countries at all.

Marriage formation can also be affected by business cycle conditions. However, it is important to note that the role of marriage in family formation differs considerably across societies. For example, in Asian countries (e.g. Japan), out-of-wedlock childbearing is still rare and thought to be against the social norm. Whereas in some northern European countries (e.g. Sweden), more than half of children are born to unmarried parents. Presumably, the relationship between marriage and fertility is weak in societies where formal marriage is not a requirement for the formation of a stable family. Nevertheless, studies in the US and Canada, which are countries that are considered to be “in-between” Asia and northern Europe in terms of the importance of marriage, show that the marriage rate is also, in fact, pro-cyclical [3], [4] and moving in the same direction as fertility.

Income and substitution effects of labor market conditions on family formation

The effect of a recession on family formation can be attributed to an “income effect” and a “substitution effect.” The income effect is the result of a decrease in family income during recessions, such that families cannot afford to have another child. The substitution effect is that, when a recession lowers the potential wages that a woman could earn, the “opportunity cost” of childbearing and rearing (that is, forgone earnings when raising children) falls, thus more women choose to spend time on children rather than working

in the labor market. To the extent that recessions lead to women spending more time on household work, the same logic also applies to marriage.

Which of these two effects is stronger depends on the male–female income ratio, and on the differential sensitivity of male and female incomes to business-cycle fluctuations (because a decline in male and female incomes have different effects on marriage and fertility). For example, male income is influenced by the income effect only, since women are more likely to stay at home to raise their children. The income effect is further strengthened when men earn more than women, and when male income is more responsive to business-cycle fluctuations.

When female income decreases, it is not clear which effect is strongest. However, several empirical studies have shown that for marriage (conditional on male income being unchanged), the positive substitution effect exceeds the negative income effect [5], [6]. In contrast, the existing evidence for fertility is more mixed—sometimes worse labor market conditions for women increases fertility, but sometimes not [6], [7]. The observed effects of a recession on family formation are the sum of the unambiguously negative income effect, as a result of a reduced income for men, and the effect of declined female income, which in theory could go either way. The existing evidence for pro-cyclical fertility and marriage implies that, empirically, the negative income effect dominates, so that both fertility and marriage rates decline during recessions.

Furthermore, when raising children requires a lot of time input, the substitution effect works more strongly. In addition, social norms not only affect the extent to which women think work and family formation are substitutes, but they also affect the impact from male income: a norm that a man should be a breadwinner makes it more difficult for young men to marry without a decent income.

Many studies have also examined the effect of job loss on family formation. For example, one study shows that a husband's job loss leads to lower completed fertility of couples in the US, while another finds a similar negative effect of women's job loss on completed fertility in Austria [8], [9]. This suggests that the negative effect of job loss on fertility, at the individual level, is likely to be one of the important components of pro-cyclical family formation.

Similarly, it is known that when income inequality is significant among men, in that there are few men on high incomes relative to those on lower incomes, it lowers the marriage rate because it results in a smaller pool of marriageable men. At the same time, a recession tends to hit less-skilled workers more severely, which even widens the income inequality among men and, in turn further reduces marriage and fertility rates.

Heterogeneity in the sensitivity of fertility to business-cycle fluctuations

The effect of a recession on family formation varies substantially across age, country and demographic groups. This is due to the heterogeneity, in factors that affect the relative size of the (positive) substitution effect and the (negative) income effect. Since the institution of marriage itself varies across countries and changes over time, it is difficult to compare studies on marriage. This section therefore focuses on studies on fertility only.

Age and birth order

The fertility of younger women is more sensitive to business-cycle fluctuations in both the US and Europe [1], [2]. Accordingly, the responsiveness of the fertility rate to the unemployment of women aged 20–24 is two or three times larger than that of women aged 30–34. This may be because younger women are less constrained by the “biological clock” and can therefore more easily postpone childbearing. The decision to have the first child is therefore more responsive to business-cycle conditions than the decision on the second or third child [2]. This is partly because mothers are younger at first births than at the higher-order births.

Country and cohort

The sensitivity of fertility to business-cycle conditions varies considerably across countries. Figure 1 shows that fertility does not correlate with the unemployment rate in Germany, for example, whereas it appears to be clearly pro-cyclical in France, Japan, and the US. More rigorous empirical investigation reveals that, within Europe, the fertility rate is most sensitive to business-cycle conditions in southern Europe [2]. In contrast, the effect of the unemployment rate on fertility is almost zero in western Europe, and significantly negative only for those aged 20–24 in northern Europe. Such variation arises from differences in factors that affect the relative strength of the substitution and income effects, such as the rigidity of the labor market, gender wage gap, pro-natality policies, welfare programs, etc. For example, the stronger pro-cyclical in southern Europe may be caused by the lack of flexibility in the labor market, and a high unemployment rate among young people [7].

Race and education

A recession decreases the fertility of black women more than that of white women in the US [1], [10]. In fact, the fertility of white women in the sample used in one of these studies is counter-cyclical [10]. The study argues that black women are more likely to be credit-constrained during a recession, thus the positive substitution effect is weaker and the negative income effect is stronger for them. Another potential reason is that black women tend to have their first child at a much younger age than white women, and younger women’s fertility is more pro-cyclical.

There is only a limited amount of evidence available on the effect of a recession on fertility for men and women with different levels of education. This is for two reasons: First, it is a result of data availability. Birth-record data do not include education. Second, and a more fundamental reason, is that education and fertility may be determined simultaneously and both can be affected by business-cycle conditions. Nonetheless, a few studies take the current education level as a given and examine how the effect of a recession on fertility and marriage differs across groups with different levels of education [5], [10], [11]. The results suggest that women with different educational backgrounds respond to business-cycle conditions differently, but the direction seems to vary across countries, race, and cohorts.

Does a recession also affect divorce?

As well as the effects of a recession on the formation of new families, the effects of a recession on family breakdown and divorce also have important policy implications. In particular, an increase in the divorce rate often implies an increased number of single mothers, and thus child poverty is more prevalent.

From a theoretical perspective, the effect of business-cycle conditions on divorce is even more complicated than the effect on marriage. Business-cycle conditions affect the “value” of continuing the current marriage. Value in this sense is defined as the expected joint utility from marriage, i.e., the sum of the expected utility of the man and the woman into the future (for example, joint income, children, companionship, etc.) relative to the “value” of remaining or becoming single and/or continuing to search for other potentially better partners. Similarly, the prospect of remarriage affects the expected utility from divorce, thus it can be an important determinant of the divorce rate.

A negative income shock to men can lower the value of marriage, but a negative income shock to women can increase the value of marriage, to the extent that marriage induces women to spend more time on household work and to reduce their participation in market work. Given that the marriage rate is pro-cyclical (it decreases during recessions), it might appear natural to expect that the divorce rate is counter-cyclical (increases during recessions). Additionally, negative income shocks and job loss at the individual level are known to have detrimental effects on marital stability [3].

However, unlike the individual-level shocks, macroeconomic conditions also affect an individual’s prospects outside of marriage. In particular, it affects the prospects of remarriage, in that the pro-cyclical marriage rate implies fewer opportunities for remarriage during recessions. Furthermore, if the married couple already has children, the financial burden of raising children as a single parent may be heavier during a recession, and the one-time cost of a divorce process may also affect the decision on divorce. Thus it is not clear whether the divorce rate is counter-cyclical, even if the marriage rate is pro-cyclical.

Empirical evidence on this issue is again mixed. In the US, both marriage and divorce rates are pro-cyclical [3]. Furthermore, while the decrease in marriage in a recession leads to a long-term decline in the stock of married couples, the effect on divorce is only temporary [3]. In contrast, the divorce rate is not correlated with business-cycle conditions in Canada, although the marriage rate is pro-cyclical [4]. Moreover, in Canada, the observed fluctuations in the marriage rate over the business cycle are driven by the fluctuations in the number of remarriages rather than by first marriages [4]. This result implies that the stock of single parents increases during a recession, because the inflow into divorce does not change, but the outflow into remarriage decreases. Unfortunately, the existing evidence outside of North America is scarce, although, like marriage, the relationship between divorce and business-cycle conditions is likely to vary across countries and demographic groups.

The long-term consequence on completed fertility

Temporal shift of timing or permanent effect?

The short-term decline in the fertility rate caused by a recession can lead to a permanent decline in the completed fertility (the number of children born to a woman by the end of

her child-bearing years) of the affected cohort, but it is also possible that the observed short-term fluctuation in fertility is just a result of a temporal shift of timing of fertility. If the former is the case, cohorts who experienced a recession as a young adult will have fewer children. If the latter is the case, they have the same number of children at older ages. Distinguishing a permanent decline of completed fertility and a mere delay in the timing of fertility is quite important when determining any implications for demographic trends and public welfare. It should be noted that a recession experienced at a later age could also affect the completed fertility, mainly through the probability of having second- and higher-order children. However, the focus here is on the effect of a recession experienced in youth.

Whether a recession at youth has a long-term effect on completed fertility depends on the extent to which it affects permanent income. Many recent studies have examined the long-term effect of a recession at entry to the labor market in different countries and for groups of different gender, skill level, and ethnicity. Taking them together, while the size and persistence of the effect of a recession on wages for young people with different skill levels vary substantially across countries (and skills), the effect for women tends to be weaker and less persistent than the effect for men. Also, lower wages for women can reflect both the negative income effect and the positive substitution effect, but lower wages for men have the negative income effect only. Therefore, in theory, the effect of a recession experienced at youth on family formation is expected to be more negative and persistent for men than for women.

Furthermore, the positive substitution effect may exceed the negative income effect if the sample is limited to women. Studies that distinguish between the effects of unfavorable labor market conditions on marriage for men and women find that, holding labor market conditions for men constant, worse labor market conditions for women *increase* marriage formation [5], [6]. Thus, a recession at youth could have a positive effect on fertility for women if their partners do not belong to the same cohort as themselves—that is, if the partners' income is not affected by the recession that the women experienced in their youth.

Another issue regarding marriage is the long-term effect on divorce rate. If marriages formed under booms and recessions are different in terms of match quality, labor market conditions at marriage may be correlated with the probability of divorce in future. Pro-cyclical marriage rates imply that a boom induces couples who would not marry otherwise to marry [3], [4]. Whether these marriages are stable ones or likely to end in divorce can have quite important implications for welfare policies, given the high poverty rate among single-mother families. In the US, labor market conditions do not seem to affect the quality of marriage, though [6]. Evidence from other countries is scarce.

Existing studies have not yet provided conclusive evidence

The existing studies on the long-term effect of a recession at youth on family formation show that the effect varies across countries and demographic groups. They have not reached any consensus regarding the effect of a recession at youth on marriage and fertility for women. Even the sign of the effect varies across studies. Although fewer studies analyze men, the effect for men tends to be negative or insignificant.

Three studies undertaken in the US find different results, although cohorts covered by their data overlap [1], [6], [12]. The first of these studies shows that a recession at

youth delays first births and lowers the completed fertility for all American women born between 1961 and 1970 [1]. The second study shows that a recession experienced in youth accelerates the timing of marriage but has no discernible effect on completed fertility for women born between 1960 and 1970 [6]. The third study finds no effect for women without a college degree and a positive effect on fertility for women with a college degree born between 1957 and 1964 [12]. The most important difference between these studies is ages at which “the unemployment rate at youth” is observed: that is, age 20–24 [1], age 18–20 [6], and the last year in school [12]. In addition, one of these studies estimates the effects of male and female unemployment rates separately [6]. Accordingly, male unemployment rates at youth have negative effects and female unemployment rates have positive effects on both fertility and marriage. When summed up, however, the sign of the effect on marriage is positive but that on fertility is zero, or weakly negative. Furthermore, the cohorts covered in one of the studies are slightly older than the other two studies [12].

Another important difference is data quality. The administrative data from birth records allows one study to estimate the effect of a recession at youth very precisely [1]. In contrast, the sample size in the survey data used by the other two studies is only several thousand. In fact, the point estimate by [1] (in which a one percentage point increase in the average unemployment rate at ages 20–24 is associated with about five additional childless women per 1,000 at age 40), is well within the 95% confidence interval estimated by [6] and [12].

Studies from other countries are limited and also use survey data and to some extent suffer from the problem of imprecise estimates from the small sample size. In Japan, a recession experienced at youth has a negative effect on fertility for high-school educated women, but the effect is opposite for college-educated women [11]. A study of German college graduates shows that a recession at graduation has a temporarily positive effect on fertility timing of women, but no effect on completed fertility [13]. Also, a recession at graduation has no effect on family formation of male college graduates in Germany, though the evidence on less-educated people is not available [13].

Despite the observed heterogeneity across countries and cohorts for less-educated women or women in general, the effect of a recession at graduation on marriage and fertility for college-educated women tends to be positive in Japan, the US, and Germany [11], [12], [13]. This implies that the income effect is weaker for college-educated women and/or the substitution effect works more strongly for them. Since college-educated women tend to marry college-educated men, who are more likely to have a stable job with decent earnings, it is not surprising that the income constraint seems less binding for them.

LIMITATIONS AND GAPS

The existing studies have yet to provide conclusive evidence on the long-term effect of a recession at youth on family formation. The difference across studies can be partly attributable to the differences in population covered, but some of the differences may be caused by the quality of data and differences in methodology. Apart from a few studies that use administrative data from birth records, survey data usually contain only a limited number of women per cohort. This limited availability of data makes the sample size smaller and the estimates imprecise.

Another important issue is the methodology used to account for trends. Since both the fertility rate and unemployment rates change gradually, it is very important to be able to distinguish these changes from any longer-term trend that may also be taking place. For example, although the time-series data of the total fertility rate of Japan shown in Figure 1 looks strongly pro-cyclical, once long-term time trends of declining fertility and increasing unemployment are taken into account, the correlation becomes much weaker.

SUMMARY AND POLICY ADVICE

Fertility falls in recessions in many developed countries, although the prediction by economic theory is ambiguous because the income effect and the substitution effect move in the opposite directions. Marriage is also pro-cyclical. However, the sensitivity of fertility rates to the prevailing business-cycle conditions differ substantially across countries and demographic groups, and there is no clear pattern, other than that younger women are more responsive to labor market conditions. Fertility can even be counter-cyclical for the group for whom the substitution effect exceeds the income effect. Evidence on the long-term consequences of a recession at youth is even more mixed.

Although improving youth employment prospects may not be a panacea for the low fertility trend, it is important that policymakers understand the two competing effects of labor market conditions on family formation. Namely, the negative effect on income from unemployment, and thus the “affordability” of children and marriage, and the positive effects due to substituting time spent working in the labor market by time spent on household tasks, such as childcare. Depending on the relative strength of these effects, the relationship between demographic trends and labor market conditions can change.

Government intervention can also affect the extent to which labor market conditions matter. For example, providing a subsidy to families with young children can weaken the effect of a fall in household income. Additionally, family-friendly labor market policies, such as improving childcare provision, make it easier for couples to have a child and continue working, thus weakening the substitution effect as well as mitigating income constraints.

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Competing interests

The IZA World of Labor project is committed to the *IZA Guiding Principles of Research Integrity*. The author declares to have observed these principles.

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