

Kinder, Küche und Kirche, Family policies and fertility in the Third Reich

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Abstract

After coming to power in 1933, the National Socialist German Workers' Party employed propaganda to reinforce the dominance of the Aryan Volk and swiftly implemented a series of economic and proactive family policies. Among these measures, the 'Law for the Encouragement of Marriage' emerged as one of the most far-reaching and distortionary policies in the history of family policy. Its primary aim was to restrict women's labor force participation in order to alleviate unemployment and promote the growth of the Aryan population. We evaluate the impact of National Socialism on marital fertility in (West) Germany by analyzing census data from 1933, 1939, and 1970. Our findings indicate that the first years of domination by the Nazis are associated with a transitory increase in fertility until 1938. Importantly, German women who were fully exposed to the Nazi family policies experienced a smaller rise in marital fertility as measured in 1938, compared to their compatriots who had only partial exposure. This relative decline can be attributed to the severe penalties imposed on childless, unmarried individuals, which incentivized Germans to enter into lower-quality and less fertile unions. The negative selection effect, depressing fertility, persisted until 1970, and represents the primary legacy of Nazism on the fertility of German women.

Keywords: Third Reich, Fertility, Marriage, Divorce, Female labor force participation

JEL Classification Numbers: J1, D1, N3.

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1 Introduction

In recent years, a growing body of economic literature has emerged, examining the origins and consequences of National Socialism (Voigtländer and Voth, 2012, 2015; Satyanath et al., 2017; Adena et al., 2015). The Nazi regime exerted influence on every aspect of German life through indoctrination, propaganda, and a series of destructive policies. Notably, their family policy aimed at promoting the Aryan Volk stands out as one of the most distorting measures in the history of family policy. Surprisingly, the causal effects of National Socialism on fertility and marriage dynamics in the Third Reich have remained largely unexplored, at least in quantitative terms. We aim to fill this gap.

The glorification of motherhood was central to Nazi ideology as a means of preserving the supremacy of the ‘Aryan race’. Aligned with the vision of Emperor Wilhelm II, who ruled the German Empire¹ between 1888 and 1918, women were supposed to participate in the economic life of the country only by ensuring the growth of their family (Pine, 1996). More specifically, they were expected to dedicate their time to child-rearing activities (‘*Kinder*’), feeding the people (‘*Küche*’), and investing in their spiritual life (‘*Kirche*’). The Nazi regime was convinced that the abandonment of traditional gender roles and family life that had begun with the Weimar Republic was a major threat to the German Empire. In his book “We create the Third Reich”, Wilhem Frick, one of the founders of the Nazi regime and Reich Minister of the Interior, documented a radio speech on the occasion of Mother’s Day in May 1934. He emphasized that:²

The salvation of Germany depends not only on the enthusiasm of our male youth for the resurgence of our fatherland, but it depends just as much on the devotion with which our women and girls turn back to the family and to the idea of motherhood! Women and mothers are the guardians of tradition and customs, but also the guardians of culture and morality! (Frick, 1934)

Beyond ideology and propaganda campaigns, such as Mother’s Day or the Mother’s Cross, there was an economic motive behind the resurgence of traditional gender roles: solving the massive unemployment inherited from the Weimar Republic. It materialized through the “*Law for the Encouragement of Marriage*” (hereafter LEM) or *Ehstandsdarlehen*, as one package of the “*Law for the Reduction of Unemployment*” of June 1, 1933. The main objective of the LEM was to reduce female labor force participation and to stimulate both fertility and marriage among ‘Aryan’ women. It was aimed exclusively at unmarried women who had worked for at least a few months in the last two years before marriage. It granted an interest-free loan of up to 1,000 Reichsmarks, of which 1% had to be repaid each month. Importantly, couples also had the option of ‘Abkindern’: each birth of a child within the marriage reduced the amount to be repaid by 25%. Childless singles had to contribute to the financing of this policy by paying a tax on income and capital, and also suffered a strong social stigma.³

If the literature has so far agreed on the dramatic decline in fertility preceding the Nazi regime, no consensus has been reached on the consequences of National Socialism, and in particular the Law for the Encouragement

¹For the sake of clarity, we refer to German territory as the German Empire for the period before 1918, the Weimar Republic for 1918 to 1932, and the Third Reich for 1933 to 1945, and use the term Germany for the territory in general, e.g., when referring to multiple periods.

²Original book title: “Wir bauen das Dritte Reich”. Original text: “Die Rettung Deutschlands hängt nicht nur von der Begeisterung unserer Männlichen Jugend für die Wiedererstarkung unseres Vaterlandes, sondern sie hängt ebenso sehr von der Hingab ab, mit der unsere Frauen und Mädchen sich wieder der Familie und dem Muttergedanken zuwenden! Die Frauen und Mütter sind die Hüterinnen der Überlieferung, der Gebräuche, aber auch der Hort der Kultur und der Sitte! (p. 55)”

³While this paper focuses on the policies implemented on “Aryan” families, another facet of Nazi family policy relates to the persecution of minorities, see Section 2.

of Marriage, on fertility. Demographers of the 1940s, such as Taeuber and Taeuber (1940) or Kirk (1942), without discussing specific policies in detail, were impressed by the increase in German fertility. Kirk (1942) stated:

The birth rate, which had declined to 14,7 per 1,000 in 1933, had risen to 20.3 in 1939. The latter is not a particularly high birth rate and represents a fertility only slightly above that required for permanent replacement of the population. But because fertility was so low before, the rise is an important one. In absolute terms there were 436,000 more births in the Old Reich in 1939 than in 1933. In the German-speaking areas of the Greater Reich the increase was about 500,000. (Kirk, 1942)

More recent authors, such as Stephenson (2013), were less impressed. In her comprehensive work, Pine (1996) argues that the LEM has been globally ineffective in increasing fertility:

However, the loans did not have the desired effect of boosting the nation's birth rate. The long-term trend towards one- and two-child families was not altered appreciably by this measure, as the loans were in any case inadequate to cover the costs of a larger family. Couples granted marriage loans on average had only one child. (Pine, 1996)

In this paper we show that neither Kirk nor Pine are entirely wrong. Using census data from 1933, 1939, and 1970, we develop a stepwise difference-in-difference approach comparing married women living in the Third Reich (treatment group) and women living outside the Third Reich (control group). In a first step, we study women who married in the last years of the Weimar Republic and thus were not eligible for the LEM, regardless of their place of residence. Comparing their fertility in 1933 and 1938⁴, we find a positive effect of exposure to Nazi ideology and pressure to have children on marital fertility.

In a second step, in order to avoid comparing fertility rates measured at two different points in the marital life, as in the previous exercise, we measure the fertility of women after x years of marriage in 1933 and in 1938. In this way, we compare the fertility of women who were not affected at all by the Nazi regime, and in particular by its policies on marriage (untreated group in 1933), with women who received the full set of incentives provided by the regime (treated group in 1938), holding exposure to the risk of pregnancy constant. We again find a positive association between exposure to Nazism and fertility.

In a third step, we compare women who married before and after the rise of Nazism and measure their fertility in 1938. If both groups were exposed to Nazi ideology, they were not confronted with the same marriage policy, since the LEM was reserved for persons who were unmarried by 1933 (treated group). Surprisingly, we find a negative effect of this family policy on marital fertility. This suggests that rather than increasing marital fertility, the Nazi family policy tended to depress it. We show that this effect persisted until 1970, a date by which the fertility life of all women in our sample had been completed.

To understand why the effect of Nazism on marital fertility was higher among already married couples compared to those who married under the Nazi regime, we develop a theoretical model of fertility and marriage where men and women make their marriage decision individually, but if and once married, they

⁴We measure fertility in 1938 because territorial shifts due to the annexation of Sudeten Land and Austria would alter the distribution of marriages between the treatment and control groups.

make their family decisions in a collective cooperative manner, as in Chiappori (1988). Our model is able to reproduce the main results of our regression exercises: (i.) exposure to Nazism in general tends to increase fertility because of the glorification of motherhood and economic incentives to have children, but (ii.) women exposed to both the ideological pressure of the regime and its family policies tend to increase their number of children less than their counterparts exposed to ideological pressure alone.

The key mechanism driving this result is the severe penalty imposed by the regime on unmarried women. This penalty encourages them to accept lower quality matches, which are consequently less fertile. Our model suggests that women treated by the regime's marriage policy (LEM) tend to marry earlier to avoid the costs of singlehood, accept lower quality husbands, have fewer children, and divorce more often once divorce becomes a legal and truly possible option.

In a series of three auxiliary regressions, we test the mechanisms formalized by our theory. In the first, we focus only on women living in the Third Reich and show that women eligible for the loan did not adjust their fertility differently from women ineligible for the loan. This result supports the claims of Pine (1996), who argues that the loan was not large enough to positively affect the fertility of German women. In a second exercise, returning to our difference-in-difference approach, we show that the Nazi period is associated with an increased probability of marriage for women in Germany, but not for women outside the Reich. Within the Reich, a strong redistribution of marriages to younger ages is observed, a redistribution driven mainly by women eligible for the loan. This suggests that if Nazi family policies were not efficient in increasing fertility, they were efficient in increasing marriage at younger ages, thus pushing young women out of the labor market and into the family sphere.

In a final regression, we compare the probability of divorce of women who married under the Nazi regime with that of women who married before the Nazi regime. We show that women who married young under the Nazi regime were more likely to divorce later once the Nazi regime disappeared. This result supports our theory predicting that Nazi family policies depressed the fertility of German women through negative selection into earlier marriages.

We contribute to two strands of literature: the effects of family policies on fertility and the consequences of Nazism. The study of family policies encompasses a broad range of reforms and instruments, including direct cash transfers (e.g. Milligan (2005) for Quebec; Cohen et al. (2013) for Israël; González (2013) for Spain and Riphahn and Wijnck (2017) for Germany), child-related tax allowances (e. g. Moffitt (1998); Rosenzweig (1999); Baughman and Dickert-Conlin (2003, 2009); Kearney (2004); Brewer et al. (2012)), or parental leave benefits (see Olivetti and Petrongolo (2017) for a review). This literature consistently shows positive effects of these policies, ranging from modest to substantial. However, given the comprehensive nature of the Nazi regime's interventions in family policy, it is challenging to isolate and quantify the causal effect of each element. Nonetheless, by examining the economic and social implications of the Nazi reforms, we aim to demonstrate that the positive effects of family policies can be partially counteracted by negative selection into marriage, resulting in lower quality unions.

Voigtländer and Voth (2012) study the roots of the persecution of Jews throughout Germany in the interwar period. They show that areas where Jews were persecuted in 1348-50 during the Black Death had a much higher prevalence of antisemitic acts during both the Weimar Republic and the Nazi period. Cultural and geographical isolation are the driving forces that explain the persistence of antisemitic violence. Subsequent papers examine the consequences and political economy of Nazism. Satyanath et al. (2017) shows that the density of social networks accelerated entry into the Nazi Party, while Voigtländer and Voth (2015)

finds evidence that Nazi propaganda, especially through indoctrination in schools, permanently altered the antisemitic beliefs and attitudes of those treated. Studies such as Becker et al. (2020) or Buggle et al. (2023) have shown how the effect of Nazism was modulated by the migratory response of populations. To our knowledge, we are the first to examine the quantitative causal relationship between Nazism and fertility.

2 Historical context

Our main interest is to understand the consequences of the Nazi regime on fertility outcomes, using the Weimar Republic as a point of comparison. More precisely, we restrict our analysis to marriages that were celebrated during or after the Weimar Republic. However, this time restriction does not mean that the bride and groom were not born and socialized in the German Empire.

Before World War I, the German Empire was characterized by fairly strict class separation and limited social mobility (Kaelble, 1978). There was a paternalistic male breadwinner model that left little freedom for women. Emperor Wilhelm II is considered the father of the **Kinder, Küche und Kirche** philosophy, which ascribes three main social roles to women: ensuring the reproduction of the population, feeding the latter and flourishing in religion (Cecil, 2000). Despite this traditional orientation, the Empire never implemented pro-natalist policies such as a unified system of child allowances (Mason, 1976).

The mass destruction of World War I and the ratification of Article 231 of the Treaty of Versailles left the Weimar Republic in a severely deteriorated economic situation. Productivity was reduced by the loss of territory, the destruction of industry, and the loss of men killed in the war. Public debt combined with rapid inflation led to systemic malnutrition (Boemeke et al., 1998). After this first difficult phase, the Republic entered the Weimar Golden Age, during which the economy stabilized before the onset of the Great Depression with mass unemployment and systemic impoverishment (Balderston, 2002).

On the demographic side, the scarcity of men led to a decline in the number of marriages and a persistently high rate of widowhood. Figure 1a illustrates how the number of marriages was initially depressed by World War I, but eventually rebounded to pre-war levels. In addition, fertility has been on a downward trend since 1890 due to the ongoing fertility transition (Figure 1c). Despite this situation, the Weimar Republic, as explained by Mason (1976), refrained from implementing pro-natalist policies. However, in 1920, it introduced the first unified tax system, which included a progressive tax deduction based on the number of children. In terms of gender roles, the Weimar Republic is known for laying the groundwork for equal civil rights, granting women the right to vote as early as November 1918, when the Republic was proclaimed. During this period, women's participation in the labor force increased at an unprecedented rate, although it was concentrated in the less advanced economic sectors. Despite these notable improvements, institutions remained strongly biased in favor of men, resulting in limited power for women.

In January 1933, the National Socialist German Workers' Party (NSDAP) won the elections and took power. The NSDAP tried to stimulate growth by investing in housing, the Reichsbahn, the postal system, and other infrastructure. It also invested heavily in armaments. The large scale unemployment they inherited from January 1933 disappeared as early as 1937 (Overy, 1994). Such an improvement was achieved by a severe reduction of the female labor force participation, a key aspect of the Law for the Encouragement of Marriage, which we will detail in a few lines. Mass consumption did not increase accordingly and was even discouraged, as the one-pot Sundays illustrate. The success of this program highlights the ambivalence of the German

people regarding their support for the new regime.⁵ This ambiguity can be retrieved in more direct outcomes such as the number of deportations by locality and political results in parliamentary elections between 1928 and 1933, as done by Adena et al. (2015). Resistance acts and movements are also documented by Adena et al. (2020) and Peukert (1987).

Contrary to previous regimes, the Nazis implemented an exceptionally proactive family policy, taking the concept of **Kinder, Küche und Kirche** to its extreme. The main idea was to bring German women back home to solve the massive unemployment caused by the economic crisis of the 1930s and to promote the growth of the Aryan population within a paternalistic breadwinner model. Beyond the massive propaganda around the 3 K's (Pine, 1996), the main family policy instrument of the NSDAP was the “*Law for the Encouragement of Marriage*” (LEM). It was part of the larger “*Law for the Reduction of Unemployment*” (LRU) of June 1, 1933.

The “*Law for the Encouragement of Marriage*” (Ehstandsdarlehen) developed around three pillars: marriage, fertility, and labor force participation. Each element of the law was designed to change the incentives for women to marry, have children, and leave the labor market. The LEM offered newly married couples a loan of up to 1000 Reichsmark⁶ (hereafter RM) with which they could buy furniture. The money was distributed in the form of coupons⁷. The loan was interest-free, and couples had to repay 1% of the total amount each month. This policy was designed to increase the number of marriages of a certain type of population deemed valuable to the *Volk* by imposing further restrictions. We will use the term eligible population here. To be eligible for the loan, the marriage should not involve persons who are (i) Jewish, (ii) without civil rights (*bürgerliche Ehrenrechte*), (iii) suspected of having dubious political attitudes (persons without a guarantee of uncompromising support for the nation-state), (iv) suffering from a physical or mental hereditary disease that would lead to a marriage not in the interest of the ethnic community, or (v) susceptible to not repaying the marriage loan (“asocial”). Finally, the loan was limited to marriages celebrated after the policy was implemented on June 3, 1933.

In addition to the positive incentives to marry, the Nazis implemented negative incentives to remain unmarried. Officially, the “*marriage assistance*” (*Ehstandshilfe*) was introduced to refinance the marriage loan. It was mainly a progressive tax system that applied only to single persons without children. All unmarried persons under the age of 55 with an income above 75 RM per month had to contribute up to 5% of their income, depending on their income level. The tax was levied on both labor and property values.⁸ Widowed and divorced persons were included in the single group except if they were over 55 years old (no longer in fertile age), using more than $\frac{1}{6}$ of monthly income to support one’s parents or ex-wife, or having children from a previous marriage. In January 1935, marriage assistance was incorporated into the income tax. In addition to this economic penalty, unmarried or childless persons suffered a strong social stigma, as documented by Pine (1996). As reported by Proctor (1988), in July 1942, Reich Health Führer Leonardo Conti ordered that “*every means at the doctor’s disposal should be used to help childless couples bear children*”; to this end, Conti ordered each German district (Gau) in the Reich to establish workshops (attached to local health offices) to help childless couples find ways to bear children.

⁵Instead of enjoying Sunday dinner with expensive meat, families were encouraged to eat the less expensive one-pot meal and donate the difference. Already in 1933/34, more than 25 million RM, or about 13.6% of all donations, were given in this way to the *Winterhilfswerke des Deutschen Volkes* (WDV). A figure that rose steadily to almost 332 million RM or 20% of all donations to the WDV in 1942/43 (Stadelmann, 1942).

⁶1000 RM in 1933 is about 5,100 Euro (PPP) in 2023. It corresponds to 63% of the average annual income of a fully employed person (Annex 1 SGB 6).

⁷A scanned version of such a coupon can be found in Figure 8 in the Appendix A.

⁸We detail the tax scheme in Table 10 of Appendix A.

To encourage fertility within a marriage, the total amount to be refunded was reduced by 25% for each birth (“*Abkindern*”). If divorce was made almost impossible under Nazi rule, childlessness was a valid reason for unilateral divorce. In fact, it was even encouraged if the couple was childless after a certain period of time.

Finally, in order to encourage women to leave the labor market and embrace the 3K’s ideology, receiving the loan was conditioned on giving up their participation in the labor market as long as the couple repaid the loan. In reality, only women who had been employed for at least six months in the two years prior to the implementation of the loan (June 1, 1931 to May 31, 1933) were entitled to receive it (Clause V §1 (1) a.). Because of this practical detail, the LEM was a key element of the General Law for the Reduction of Unemployment. It was not compulsory for women whose husbands earned less than 125 RM to refrain from work.

During the period of this study, the legislation was adapted to the economic situation. The rules were tightened by the Second Law to Amend the Law on the Promotion of Marriage in January 1935. Now women were required to work at least 9 months in the last two years before marriage (§1 (1) a.). In 1937, the German labor market turned to full employment and local labor shortages. This led, after a series of smaller revisions, to a major modification of the LEM to allow some German women to re-enter the labor force. This modification is known as the *Third Law for the Adjustment of the Law for the Promotion of Marriage*, which was implemented on November 3, 1937. From that date on, newly married women who received the marriage loan had to choose between repaying 1% per month without working or 3% while working.

The LEM was not the only policy that directly affected reproduction and marriage. Mason (1976) gives a very detailed description of the additional welfare policies implemented by the Nazi administration from 1934 to 1938. From the doubling of the income tax allowance for each dependent child to the introduction of a one-time child allowance of 100 RM per child for large families in need, the cost of childbearing was gradually and significantly reduced in the early years of the Third Reich. As Mason points out, this unprecedented policy did not achieve its goal of making large families more prosperous than small ones, an ultimate goal of Nazi family policy, but it did potentially have a positive effect on fertility decisions. Another facet of the Nazi family policies that we don’t explore in this paper pertains to the eugenic persecution of minorities. On July 14, 1933, the Law for the Prevention of Hereditarily Diseased Offspring imposed sterilization on persons suffering from certain hereditary diseases (congenital feeble-mindedness, schizophrenia, major depression...). If sterilization was unsuccessful, the woman who became pregnant had to abort the pregnancy. Between 1934 and 1939, 320,000 persons were sterilized, representing 0.5% of the German population, mostly single women (Pine, 1996). The *Law for the Protection of German Blood and Honor* of September 1935 prohibited sexual relations between Jews and Aryans. Finally, on October 18, 1935, the “Law for the Protection of the Hereditary Health of the German People” excluded the “inferior” and “alien” from the “*Volksgemeinschaft*”, with consequences for marriage and fertility. This policy was part of the massive persecution of minorities such as the Jewish and Gypsy populations. To the best of our knowledge, the quantitative impact of these policies on the fertility of the targeted populations has never been measured.

To put the German historical context in a quantitative perspective, we rely on two main types of data sources. The first consists of historical data collected before World War II. Most of the data come from two censuses conducted in 1933 and 1939, when the Nazis were in power. To the best of our knowledge, the original microdata have not survived along time, but tables with data aggregated to the level of provinces have survived in Statistisches Reichsamtsamt (1937) and Reichsamtsamt (1943). One of their key features is their aggregation by year of marriage. We supplement these data with additional contextual variables from the

Statistical Yearbooks, such as the proportions of couples who married in 1937 and 1938 using the loan by age and by province.⁹ Our second main source of data is more recent and consists of individual (non-nominative) census data collected in West Germany in 1970. We describe the latter in detail in Section 3.

Figure 1a and b present the historical dynamics of marriage and fertility in Germany from the German Empire to the Third Reich. Following the implementation of the marriage loan in 1933, there was a rapid surge in the total number of marriages. After an initial peak in 1934, the number of marriages experienced a slight decline and remained relatively stable. The loan was readjusted in 1937, resulting in a new increase in the number of marriages. Subsequently, with the onset of the war, there was a significant drop in the number of marriages. By 1933, the loan had been disbursed to approximately 22% of all marriages. This percentage increased to about one third of all marriages, reaching its peak in 1938 after the reform (see Figure 1a).

Figure 1c displays the trend in the number of children per 1000 inhabitants. Apart from the First World War period, fertility rates have been declining steadily since the early twentieth century. However, this downward trend stopped when the Nazis came to power. The number of births per 1000 inhabitants rose from less than 15 in 1933 to over 20 in 1939, as noted earlier by Kirk (1942). Using an alternative measure, we find that by the end of the Great Depression, the total fertility rate among married women was comparable to levels observed at the end of the twentieth century, specifically below 1.4. By the onset of World War II, fertility rates were again above the replacement level, suggesting that the Nazis had succeeded in halting the decline in fertility.

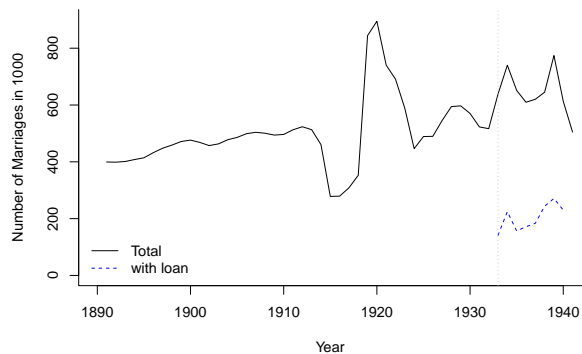
Fig. 1e shows the number of marital births per woman in a given age group for a given year. The more the color shifts from green to red, the higher the instantaneous fertility of women. The figure documents low fertility levels during the economic crisis, while during the Nazi regime, age-specific birth rates rose rapidly and extended to younger and older age groups. The outbreak of the Second World War stopped the fertility boom. We also observe the increase in age-specific fertility rates if we restrict the population at risk to married women (Figure 1f). To sum-up, increase in fertility results a-priori from two complementary driving forces: increasing marriages as the extensive margin of fertility and, to a lesser extent, increasing marital fertility as the intensive margin.

Our reading of the literature and of Figure 1 points to a fertility rebound associated with the National Socialist period. To advance this interpretation and to capture the potential effect of Nazism on marital fertility, we use the aggregated results of the 1933 and 1939 censuses. To the best of our knowledge, we are the first to use these data to study fertility changes in Germany. For both years, we know for each territory j the number of children born to couples married since x years. From this we can compute our outcome variable Y_{jxc} , which is the average number of children born to couples married since x years in territory j of census c . We then run the following regression model:

$$Y_{jxc} = \beta_0 + \beta_1 c^{1939} + \beta_2 M_j + \beta_3 M_j * c^{1939} + \beta_4 v_x + u_j + \varepsilon_{jxc}, \quad (1)$$

where c_i^{1939} is a dummy variable that takes the value 1 if the observation is from the 1939 census and 0 if it is from the 1933 census. M_j is a dummy variable that takes 1 if $x \leq 6$ and 0 otherwise. u_j denotes a territory fixed effect and v_x a set of dummies that capture the number of years couples have been married.

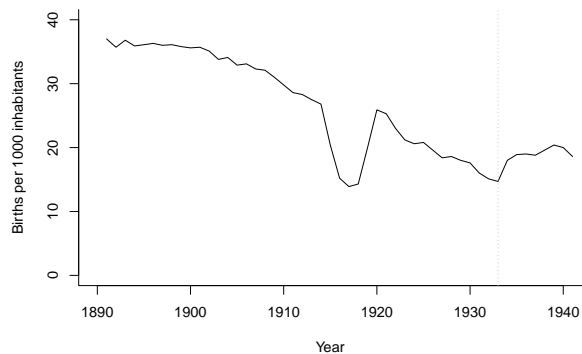
⁹See Appendix A for details. Sources from the *Statistik des Deutschen Reiches* have been accessed through the library of the Max Planck Institute for Demographic Research and digitized by the authors.



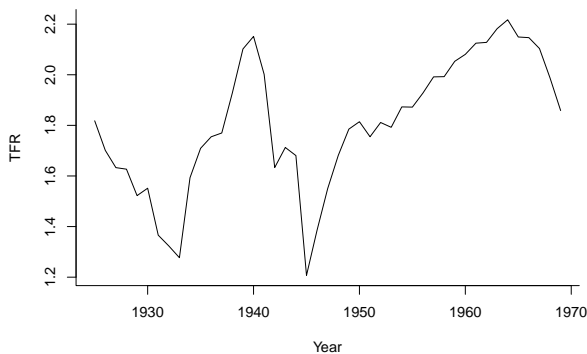
(a) Total Number of Marriages from 1890–1940



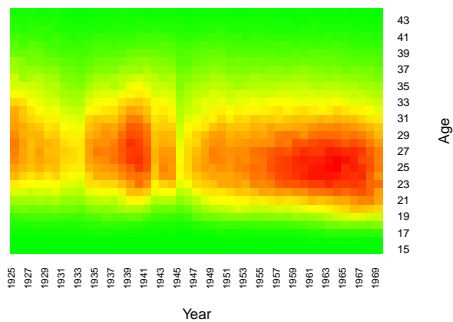
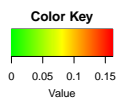
(b) Total Number of Marriages from 1925–1969



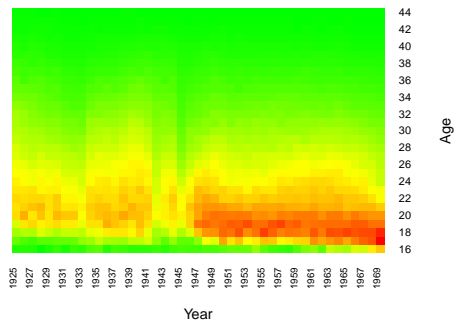
(c) Fertility per 1000 Inhabitants 1890–1940



(d) Total fertility rate from 1925–1969



(e) Marital births compared to all women



(f) Marital births compared to married women

Fig. 1. Marriages and fertility in the German Empire, Weimar Republic and Third Reich along time. Source: Fig a and c Statistical yearbooks 1938, 1939, 1941; Fig. b, d, e, f Census 1970.

Table 1: Presence of Nazism depending on years of marriage

census	1933	1939
≤ 6 years of marriage	Never treated	Treated by Nazism and LEM
> 6 years of marriage	Never treated	<i>Treated by Nazism but not by LEM</i>

As illustrated in Table 1, our estimation can be understood in a kind of difference-in-difference framework. The 1933 census data measure aggregate behavior before any treatment by the Nazi regime (a kind of control group). In the 1939 census, couples who have been married for less than or equal to 6 years were married under the Nazi regime and consequently were exposed to the full set of incentives regarding marriage and fertility, be it social and institutional pressures, propaganda, or the LEM. On the contrary, couples who had been married for more than 6 years did not benefit from the Nazi family policies aimed at newly married couples. But they did face social and institutional pressure to have more children while they were already quite advanced in their marital life.

Firstly, it is important to acknowledge that claiming observational equivalence between the couples in each group represented in Table 1 would be inaccurate. They married in different time periods, from 1916 to 1932 in the 1933 census and from 1922 to 1938 in the 1939 census, and are therefore likely to be very different in terms of average education, labor force participation, fertility, and gender norms, among other things. Second, although couples were not affected by Nazism in the 1933 census, they were affected differently by the Great Depression of the 1930s. While it hits the recently married cohorts in the 1933 census ($M_j = 1$), the opposite is true for the 1939 census ($M_j = 0$). In other words, while the older couples in our sample suffered the economic crisis at a more advanced stage of their fertile lives, the couples who married under the Nazi regime didn't suffer the crisis during their marital lives. Finally, c^{1939} implicitly captures the ongoing fertility transition later in time.

Despite these specific narratives for each group (which would undoubtedly lead to the rejection of any parallel trend analysis), it remains important to examine the value of β_3 . A positive sign would indicate that the fertility difference between long-married and newly-married couples is smaller under the Nazi regime than before. A positive sign for $\beta_1 + \beta_3$ would indicate that the declining trend in fertility resulting from the demographic transition was at least temporarily reversed for newly married couples.

The results of our benchmark estimation appear in the first column of Table 2. Not surprisingly, fertility is lower for couples married for less than 6 years than for couples married for more than 6 years, averaging 2.127 children. The negative coefficient of the census dummy c^{1939} suggests a negative trend in fertility, possibly due to exposure to the economic crisis of the 1930s and the pre-existing, ongoing fertility transition (see Knodel (2002) and Figure 1c) that dominates a possible general increase due to Nazism. However, this negative trend seems to be reversed for recently married couples ($\beta_1 + \beta_3 = 0.02 > 0$) by Nazi policies and propaganda glorifying motherhood. Compared to long-married couples, marriage under the Nazi regime is associated with an increase in fertility of 0.125 children among recently married couples, confirming a positive association between the Nazi period and fertility.

Table 2: Effect of Nazism on immediate fertility in the German Empire - OLS

	German Empire		West Germany	
	Pre-war censuses	1970 census	Pre-war censuses	1970 census
c^{1939}	-0.105*** (0.003)	-0.097*** (0.004)	-0.102*** (0.008)	-0.100*** (0.006)
$M^{\leq 6}$	-2.127*** (0.141)	-2.138*** (0.050)	-2.218*** (0.041)	-2.132*** (0.015)
$M^{\leq 6} * c^{1939}$	0.125*** (0.007)	0.136*** (0.001)	0.120*** (0.020)	0.1367*** (0.007)
MC FE	x	x	x	x
Territory FE	x	x	x	
Adj. R-squared	0.954	0.192	0.959	0.186
Observations	1,960	455,003	1,240	376,887

*** p-value<0.01, ** p-value<0.05, * p-value<0.1.

Although far from perfect, this exercise has the merit of using data covering the entire population of the German Reich. It helps to document a positive association between the Nazi administration and fertility in the short run, understood as the current number of children. Another important aspect is the use of data collected before the Second World War. Compared to data collected later, they are immune to selection into mortality, out-migration due to the war, and the consequences of the division of the country into two entities. We assess the potential severity of this bias by repeating our exercise using individual data from the 1970 census. We compute for each woman her fertility in 1932 and 1938 as a function of her cohort of marriage and regress Equation 1. Territory fixed effects are of a different nature, as we control here for the place of residence of the person on September 1, 1939.¹⁰ Remarkably, as shown in column 2 of Table 1, the results of this regression are very close to those using the 1933 and 1939 censuses. This suggests that the selection biases we anticipated are not quantitatively important.

In columns 3 and 4, we replicate our regression using only the areas corresponding to West Germany in 1970. Remarkably, our results remain stable in sign and magnitude, suggesting that the positive association between fertility and the Nazi period was not driven by the eastern or western part of the country.

3 Identification strategy

For the subsequent investigation, we use the 5% sample of the 1970 census in the Federal Republic of Germany (FRG). The sample covers about 400,000 women born before 1921 (age 16 or older in 1937) and more than 261,000 marriages between 1920 and 1937.¹¹ The relatively long time span between the 1933 reform and the 1970 census allows us to examine the impact of Nazism on fertility beyond its temporary effects, and also to

¹⁰We have three territories within the German Empire: Federal Republic of Germany, German Democratic Republic, East German Territories (territories east of the river Oder). We also control for a number of individual characteristics, such as the individual's education, age at marriage, religion, occupation, place of residence in 1939, and whether she moved from the Soviet zone.

¹¹If Jewish women were included in the calculations of section 2, they are excluded from the present investigation for two main reasons: (i) the size of their group is very small, while (ii) the nature of the policies they faced was in complete contrast to the one we are examining.

Table 3: Observations according to place of residence in 1939

Area	Year of Marriage		
	1928–32	1933–37	All
FRG	55061	69373	124434
GDR	3307	4745	8052
East German territories	7828	9797	17625
Czechoslovakia	3251	2999	6250
Eastern neighbouring countries	1175	1224	2399
Remaining areas	320	393	713
Total	70942	88531	159473

explore the mechanisms by which the Nazi regime altered completed fertility.¹²

Our analysis is based on a stepwise difference-in-difference approach, comparing women living in the Third Reich in September 1939 with women living outside the Reich at the same time. The latter form our control group; they were neither confronted with Nazi policies nor exposed to its propaganda about the family. In fact, the Reich promoted the Aryan family, which was necessarily a German family within the Reich. The geopolitical context in Europe after September 1939 guarantees that only a very small (if not zero) fraction of the women in our control group could have migrated to Germany during the last years of Nazi rule and then been treated by the Nazis during the period 1939-1945. Importantly, even if some of the women in our control group migrated to the Reich between 1939 and 1945, they made their marriage decision before they migrated, as we restrict our analysis to marriages celebrated before 1938. This is a crucial feature, as we will show later that marriage selection was a key driver of the Nazi regime’s impact on German fertility. Finally, and importantly, most of our exercises will use the respondents’ fertility as measured in 1938 as the outcome variable; we cannot suspect that migration to the Reich will contaminate these results. Similarly, our data suggest that all women residing within the Reich in 1939 are German by 1970. One might fear that in reality a significant proportion of them were not German in 1939 but became naturalized later. Nevertheless, the 1939 census data indicate that this type of woman represented 0.4% of the female population only.

We restrict our analyses to marriages celebrated before 1938 for two main reasons. First, the reform of the marriage promotion law, passed in late 1937, was important enough to change the nature of our treatment variables. Second, the annexation of Austria and the Sudetenland by the Third Reich in 1938 introduces a confounding factor that complicates the distinction between our treatment and control groups.

Grouped according to their respective places of residence in 1939, we present the distribution of women who married between 1928 and 1937 in our control and treatment groups in Table 3. The treatment group comprises 150,111 women, with 82.9% residing in the FRG, while the remaining women migrated from other zones of the former Reich up to the 1970 borders. Our control group consists of 9,362 women, primarily originating from former Czechoslovakia, including Sudetenland, and neighboring eastern countries such as Poland.

In a series of four consecutive exercises, we explore the complex effect of the Nazi regime on the marital fertility of Germans by manipulating the way we define our treatment and the date/year at which we

¹²If a census exists for East Germany in 1971, it provides much fewer variables, which prevents us from using it for our main investigations.

measure our dependent variable. These estimations will progressively point to a key result: the Nazi regime is associated with a transitory increase in fertility among German women, but the family policies specifically implemented for newly married couples had a detrimental effect on births. If we illustrate our approach in Figure 2, we can note that all our estimations share the same structure, where we want to predict n_{ijt} , the number of children at time t of a woman i who married in area j .

In a first set of regressions (first two columns of Table 5), we use an ordinary least square specification such that:

$$n_{ijt} = \alpha_0 + \alpha_1 GE_i + \alpha_2 T_i + \alpha_3 GE_i * T_i + \beta X_i + u_j + \varepsilon_i.$$

GE_i equals one if woman i lived in the Third Reich in 1939, otherwise it equals 0. T_i is a dummy variable indicating our treatment. The vector of basic controls in all estimations includes education, religion, learned occupation, place of residence in 1939 (u_j), whether the person moved out of the Soviet zone or not, and her year of and age at marriage. If we don't include the characteristics of the husband in our main specification, we do so in the robustness checks. The partner controls then include his religion, education, and age at marriage. These estimations are done with robust standard errors.

Since fertility is a count variable, a preferred specification consists of a Poisson regression model that attempts to determine the probability that a woman i who married at time t in area j has \mathcal{N} children, such that:

$$Prob(n_{ijt} = \mathcal{N} | X_i, j) = \frac{e^{-\mathcal{L}_{ijt}} \mathcal{L}_{ijt}^{\mathcal{N}}}{\mathcal{N}!},$$

with

$$\mathcal{L}_{ijt} = \alpha_0 + \alpha_1 GE_i + \alpha_2 T_i + \alpha_3 GE_i * T_i + \beta X_i + u_j + \varepsilon_{ij}.$$

We use this specification in columns 3 and 4 of Table 5 with robust standard errors, while we cluster our standard errors at the place of residence in 1939 in column 5. This more sophisticated specification will be our preferred one for the robustness checks we will propose later.

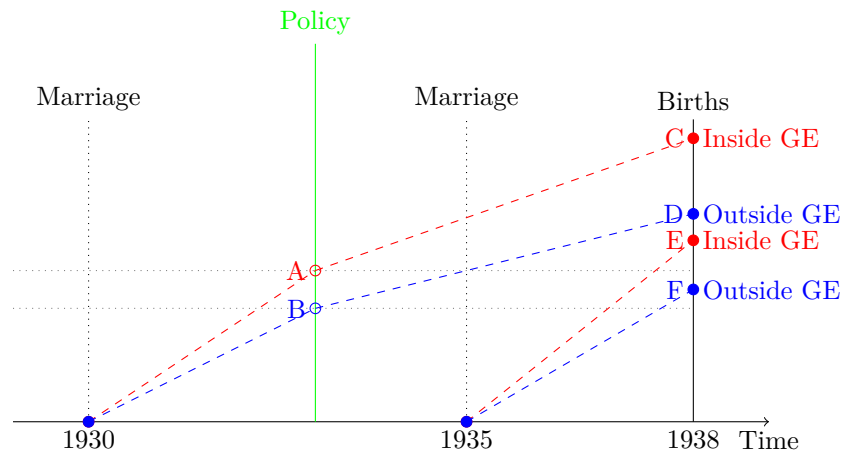


Fig. 2. Estimation strategy on the impact of Nazism on fertility

In our first exercise, we focus on women who married before 1933 and measure their fertility both in 1933 ($T_i = 0$), before any treatment by the Nazi administration, and in 1938 ($T_i = 1$). We rely on a random effects

Poisson regression model, which allows us to control for invariant covariates. In the context of Figure 2, we are comparing $|AB|$ with $|CD|$, and a positive value of α_3 would indicate that $|CD| > |AB|$. This would imply that German women who married before the arrival of the Reich, but were exposed to its propaganda and some of its family policies, tended to increase their fertility relatively more than their non-German counterparts outside the Reich over the course of their fertile life. Such a difference would indicate a positive association between National Socialism and fertility for women not treated by the LEM. One might fear that such a difference, measured in the middle of women’s reproductive life, might not be associated with exposure to Nazism, but reveal some (possibly pre-existing) differences in birth calendars. To rule out this possibility, we perform a placebo test by shifting the observations in Figure 2 five years into the past. Thus, we measure fertility in 1923 and 1933 and place a fake Nazi seizure of power and associated policies in 1928. We find no significant effect of our interaction term, as can be seen in Tables 11, Appendix B.

One drawback of our first exercise remains that we are measuring fertility at two different stages of women’s marital life. Our second exercise takes a complementary approach by comparing $|AB|$ with $|EF|$. In doing so, we compare the fertility of German women to their statistically equivalent non-German counterparts after a given number of years of marriage. In our illustrative figure, we compare the fertility differential between Germans and non-Germans in 1933, which includes only women married in 1929, with the fertility differential in 1938, which includes only women married in 1935. The women of the 1929 marriage cohort are all unaffected by the Nazi regime ($T_i = 0$), while the German women of the 1935 marriage cohort were fully exposed to the Nazi regime through its propaganda, social punishment of singles, and family-based welfare policies ($T_i = 1$). Again, a positive sign of our interaction coefficient α_3 would indicate a positive association between exposure to Nazism and marital fertility. To once again rule out alternative explanations, we perform a placebo exercise, comparing the fertility of Germans and non-Germans from cohorts before the arrival of the Nazi regime, five years ahead of all policies and events. We find no significant effect of the interaction terms (Table 12, Appendix B). This finding is important because it shows that the results we find in our main exercise are driven much more by the exposure of the treated group to Nazism than by the exposure of the control group to the crisis of the 1930s.

Our third exercise compares $|CD|$ with $|EF|$, so that we measure the fertility difference between women who married before the Nazi regime ($T_i = 0$) and during the Nazi regime ($T_i = 1$). A positive sign on our interaction term would imply a positive impact of the Nazi family policies reserved for newly married couples, of which the LEM is the core element. On the contrary, a negative sign would argue for unexpected negative effects of the policy. We again propose a placebo exercise that confirms the absence of similar effects on generations of women who married before the Nazis came to power.¹³ Comparing $|CD|$ with $|EF|$ again implies comparing women with different years of marriage and thus different exposure to the risk of pregnancy. That’s why we extend our approach to a fourth and final exercise. We repeat the exercise comparing $|CD|$ with $|EF|$, but this time, we measure the fertility of respondents in 1970 so that all women in our regression have completed their fertility cycle. This fourth and final exercise also allows us to check whether the effect we have just captured is a temporary effect of the Nazi family policy on fertility or a more permanent one.

¹³The interaction term is again insignificant, as can be seen from Table 13.

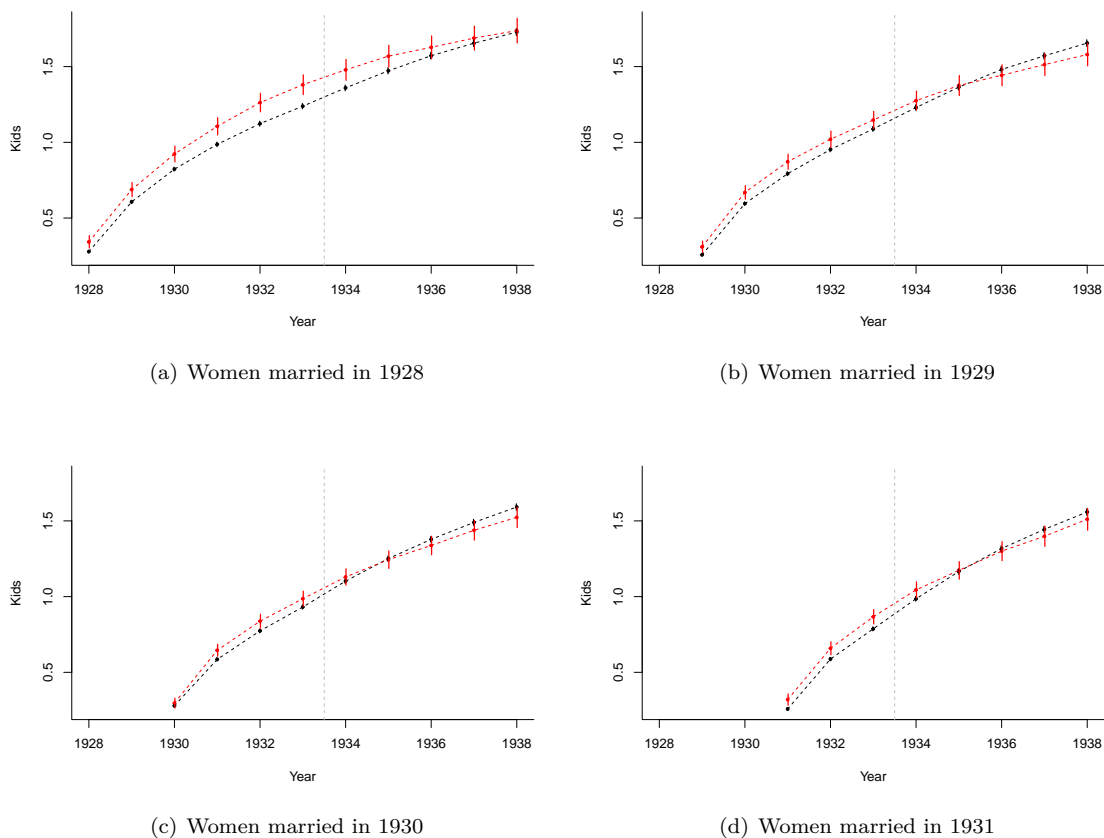


Fig. 3. Average fertility inside (black) and outside (red) Germany by marriage cohort

Our identification strategy is subject to some risks. First, by pooling the marriage cohorts for the 1928-1932 to 1933-1937 comparison, we face the risk that our results are driven by a specific event in a specific year, an event that would not necessarily be associated with the Nazi domination. We sharpen our analysis in exercises 3 and 4, by limiting our comparison to the 1932 and 1934 marriage cohorts (Table 5).¹⁴

Second, even if the placebo tests were successfully passed, the fertility patterns of our control and treatment groups may not have followed a parallel trend prior to the possible Nazi treatment. We explore this possibility by calculating the annual fertility of both groups for each marriage cohort to check whether they followed a common dynamic before 1933. Figure 3 shows that before 1933 the dynamics of the annual fertility of both groups was very comparable, so we do not violate the parallel trend assumption, at least not by much. In addition, we can clearly identify breaks associated with the arrival of the Nazi regime.

A third threat to our identification strategy comes from the non-random selection of individuals between the control and treatment groups. Since our control group consists of migrants to Germany, we cannot exclude the existence of unobserved selection factors into migration that are themselves correlated with respondents' fertility. Table 4 documents some key characteristics of both groups. We perform balance tests using t-tests

¹⁴In addition, we propose in Tables 14-17 Appendix B a series of similar regressions comparing specific years of marriage for each of our four exercises.

for age and age at marriage as well as proportion tests for the fractions across educational attainment, occupation, and religion.¹⁵ On average, women who married in Germany were older and less educated than those who married outside the German territory. They were more likely to have attended only elementary school, while they were less likely to have attended higher education, with the exception of technical schools. Outside Germany, most women were Catholics. We also document some differences with respect to learned occupation.

Table 4: Summary on balancing tests for women marrying between 1928 and 1937 in- and outside the Third Reich.

Variable	Outside	Inside	Difference	Variable	Outside	Inside	Difference
Birth cohort	1915.1	1914.8	0.2980	Learned Occupation			
Marriage age	24.8464	25.53109	-0.6847***	Farming	0.0017	0.0028	-0.0011*
Education				Manufacturing	0.0772	0.0636	0.0137***
Elementary	0.8427	0.8790	-0.0363***	Merchants	0.0205	0.0520	-0.0315***
Secondary	0.0942	0.0690	0.0252***	Medical doctors	0.0005	0.0005	0.0001
University	0.0135	0.0077	0.0057***	Nurses & o. medical	0.0098	0.0116	-0.0018
Religion				Pedagogues	0.0064	0.0058	0.0006
Evangelic	0.1944	0.5391	-0.3446***	None	0.8524	0.8021	0.0502***
Catholic	0.7661	0.3906	0.3756***				

To investigate whether these observed imbalances may confound our estimates, we re-estimate all key results using pre-processing procedures to balance our sample. First, we use entropy balancing (Hainmueller, 2012) to reweight our sample and ensure that the distributions of covariates in the reweighted data are balanced between our treatment and control groups with respect to religion, occupation, education, and age at marriage. In this way, we ensure that the observed differences between women living inside and outside the Third Reich in 1939 do not drive our conclusions. We also test the nonparametric Coarsened Exact Matching method (Iacus et al., 2008) and propensity score matching using Mahalanobis distance with two nearest neighbors. Table 19 in Appendix B reports the results of our main regression exercises based on the three alternative balanced samples described above. Our main results are preserved.

To complement our balanced estimates, we propose a final exercise in which we change our treatment group by selecting only migrants to the FRG who came from the GDR and East German territories. In this way, we compare treated and untreated migrants, thus eliminating part of the effect of selection into migration. As can be seen from Table 5, our results are still valid in this setting.

4 Results

Moving from an OLS estimation without controls to a Poisson regression with a full set of controls and robust standard errors clustered at the 1939 residence level in Table 5 yields a series of very consistent results. Our first exercise in Panel A compares $|AB|$ with $|CD|$ in Figure 2. Our coefficient of interest indicates that the exposure of women who married in Germany before 1933 to the Nazi administration is associated with a

¹⁵For a complete overview of the distribution of married women across education, religion, and occupation, see Table 18 in Appendix B.3.

0.158 increase in their number of children relative to their counterparts living outside the Reich.¹⁶ Among the couples we study, this increase represents 12% of the standard deviation of fertility measured in 1938 and 24% of the empirical increase in average fertility between 1933 and 1938. If we compare couples with the same number of years of marriage in Panel B ($|AB|$ versus $|EF|$ in Figure 2), we find that German women who married during the Reich have 0.069 more children than their non-German counterparts who married at the same time. This corresponds to 14.9% of the standard deviation of fertility measured in 1938.¹⁷

Our first two exercises demonstrate a substantial increase in marital fertility among the treated women in Germany after the National Socialists came to power. However, the nature of the treatment in the first and the second exercise is not fully equivalent: contrary to the women who married under the Nazi administration, the women who married before 1933 suffered the Nazi propaganda to have more children and to stop working but they did not suffer the pressure to marry fast and they were not eligible for the policies reserved for newly married couples, such as the LEM. In our third exercise (Panel C), we compare the differential fertility of these two groups with their untreated counterparts outside the Reich in 1938. Our coefficient of interest (α_3) then identifies the distance between $|CD|$ and $|EF|$. Remarkably, this coefficient is negative and highly significant in all our specifications. In the full OLS specification, the results indicate that women who married most recently (1933 to 1937) had fewer children compared to their counterparts who married earlier (1928-1932) as $\alpha_1 < 0$. Notably, this difference is even more pronounced, with a margin of 0.091 children, for women who married under the Nazi rule. To put it into context, this amounts to 8.2% of the standard deviation of fertility in our 1938 sample.

In Panel D, we repeat our last exercise, but measure the completed fertility of women in 1970. By 1970, the fertility difference between women who married in Germany under the Nazi regime and German women who married before is -0.11 children relative to their non-German counterparts (OLS result). This result is highly significant regardless of the specification chosen and suggests that those women who were treated by the Nazi policy reserved for newly married couples reduced their fertility compared to their untreated counterparts. In other words, the full set of incentives introduced by the Nazis ended up reducing rather than increasing the fertility of newly married couples.

This last result is important because it points to a counterproductive effect of the main family policy implemented by the Nazi government. In relative terms, the effect we document represents 6.9% of the standard deviation of completed fertility measured in 1970. Although this result may seem modest at first glance, it is not negligible. The negative variation in fertility caused by Nazi family policy (-0.11) is of a similar magnitude to the educational gradient in fertility in Panel D. Indeed, a woman with a secondary education has, on average, 0.095 fewer children than a woman with a primary education or less. The difference between a woman with a university degree and a woman with primary education or less goes up to 0.14 children.

In a simple simulation exercise, by eliminating the interaction term in our predictions, we compute the average fertility that a woman who married in Germany would have had if she had not been subject to the special treatment of Nazi family policy. We then find that the fertility differential between German women living in the Third Reich in 1939 and women living outside Third Reich in 1939 would have been reduced to 0.009 children in 1970 versus 0.073 in reality. In other words, controlling for individual characteristics, the

¹⁶In terms of the Poisson regression model, this corresponds to a difference in the relative expected number of children of 0.35.

¹⁷In terms of the Poisson regression model, this corresponds to a difference of 0.073 in the expected count change between treated German women and their untreated counterparts.

Table 5: Main results - Effect of Nazism on marital fertility

Model	OLS		Poisson		
	Baseline	Full	Baseline	Full	Cluster
Panel A: Fertility of couples married in 1928–32 in measured 1933 versus 1938					
Treatment (T_i)	1.039*** (0.016)	1.025*** (0.016)	0.9916*** (0.0137)	0.9774*** (0.0137)	0.9774*** (0.0393)
German Territory (GE_i)	-0.070*** (0.013)	-0.053 (0.054)	-0.0693*** (0.0124)	-0.0558 (0.0453)	-0.0558** (0.0246)
Treat*Germ. ($T_i * GE_i$)	0.156*** (0.011)	0.158*** (0.011)	0.1240*** (0.0079)	0.1250*** (0.0079)	0.1250*** (0.0306)
Observations	141884	140556	141884	140556	140556
Panel B: 1933 fertility of 1928–32 marriages versus 1938 fertility of 1933–37 marriages					
Treatment (T_i)	-0.0064 (0.0173)	0.0225 (0.0172)	-0.0061 (0.0172)	0.0219 (0.0170)	0.0219* (0.0115)
German Territory (GE_i)	-0.0703*** (0.0126)	-0.0882*** (0.0331)	-0.0715*** (0.0125)	-0.0891*** (0.0330)	-0.0891*** (0.0079)
Treat*Germ. ($T_i * GE_i$)	0.0710*** (0.0178)	0.0690*** (0.0177)	0.0719*** (0.0178)	0.0690*** (0.0176)	0.0690*** (0.0122)
Observations	159473	157977	159473	157977	157977
Pseudo R^2	0.080	0.107	0.027	0.036	0.036
Panel C: Fertility measured in 1938 of couples married in 1928–32 versus marriages in 1933–37					
Treatment (T_i)	-1.0770*** (0.0234)	-1.0107*** (0.0232)	-1.0105*** (0.0189)	-0.9561*** (0.0188)	-0.9561*** (0.0244)
German Territory (GE_i)	0.0861*** (0.0172)	0.0660 (0.0421)	0.0542*** (0.0111)	0.0403 (0.0326)	0.0403*** (0.0096)
Treat*Germ. ($T_i * GE_i$)	-0.0858*** (0.0213)	-0.0912*** (0.0211)	-0.0540*** (0.0168)	-0.0582*** (0.0166)	-0.0582** (0.0233)
Observations	159473	157977	159473	157977	157977
Pseudo R^2	0.111	0.146	0.040	0.053	0.053
Panel D: Completed fertility in 1970 of couples married in 1928–32 versus marriages in 1933–37					
Treatment (T_i)	-0.1323*** (0.0384)	0.0375 (0.0376)	-0.0643*** (0.0179)	0.0176 (0.0175)	0.0176 (0.0209)
German Territory (GE_i)	-0.0135 (0.0259)	0.0068 (0.0677)	-0.0062 (0.0119)	0.0107 (0.0318)	0.0107 (0.0102)
Treat*Germ. ($T_i * GE_i$)	-0.0960*** (0.0354)	-0.1165*** (0.0347)	-0.0462*** (0.0164)	-0.0558*** (0.0160)	-0.0558*** (0.0190)
Observations	159473	157977	159473	157977	157977
Pseudo R^2	0.003	0.079	0.001	0.031	0.031

fertility differential between native and immigrant women would have narrowed by 87.7%. It is important to note that in 1970 (Panel D) our treatment variable T_i is not statistically different from zero. This suggests that the negative effect of Nazi policies on newly married couples is the only one that persists over time.

In Table 6 we highlight some important robustness checks. First, we control for the husband’s characteristics for those couples who were still married in 1970. Our results are preserved with the exception that our coefficient of interest (α_3) is no longer significant in Panel B, even though it remains positive, since the latter is less precisely estimated. However, this does not prevent our main result from holding, since the persistent negative effect of family policies on newly married couples remains significant and of the same order of magnitude as in our benchmark estimation (Panel D). When we rebalance our observations to control for potential confounding omitted variables, all of our results remain unchanged. This is true in the case of the coarsened exact matching sample in Table 6, but also in the case of entropy balancing and k-nearest neighbors, see Table 19 Appendix B.3.

When we sharpen our results by comparing women who married in 1932 to women who married in 1934, our results are more striking in magnitude compared to our benchmark Poisson estimate, as our coefficient of interest more than doubles. This implies that even if our main result in Table 5 with pooled marital cohorts inevitably includes a composition effect, our main results are not driven by the latter.

Finally, even if our placebo test, parallel trend test, and balanced estimation are conclusive, we restrict our sample to migrants and compare women from the former East Germany and the eastern territories who benefited from Nazi policies with the migrants in our control group to avoid selection into migration confounding our results. We see that our coefficient of interest is remarkably similar to our benchmark estimate across the four panels.

5 Mechanisms

We develop a stylized model to rationalize our main result and to develop a number of mechanisms that we intend to explore in the next subsections. In particular, we will show that the introduction of a regime that encourages fertility within marriage for all, but at the same time penalizes singleness and moderately rewards newly married couples, can generate an increase in fertility that is stronger for couples who married before the introduction of the policy than for those who benefited from the full set of incentives. This model suggests two important mechanisms: **(i)** if the penalty for not marrying is strong, women will tend to accept low quality marriage offers, resulting in unions that are comparatively less fertile than those celebrated without pressure to marry; **(ii)** the tendency to accept marriage more easily should translate into earlier marriages and more fragile marriages.

5.1 Model

Basic model

The installation of the Nazi regime and its disappearance are shocks that are difficult to predict on a lifetime horizon, so for simplicity we model individual decisions that abstract from any anticipation of regime changes. We start with a model in which the Nazi regime is not installed, corresponding to the period of the German

Table 6: Robustness

Model	Benchmark	Partner	Balanced	1932–34	Migrants	Placebo
Panel A: Fertility of couples married in 1928–32 in measured 1933 versus 1938						
Treatment (T_i)	0.9774*** (0.0393)	1.017*** (0.033)	1.0100*** (0.0140)		0.9703*** (0.0529)	1.0099*** (0.0390)
German Territory (GE_i)	-0.0558** (0.0246)	0.004 (0.021)	-0.1221*** (0.0260)		-0.0934*** (0.0288)	0.0214 (0.0350)
Treat*Germ. ($T_i * GE_i$)	0.1250*** (0.0306)	0.119*** (0.038)	0.1074*** (0.0080)		0.1286*** (0.0322)	0.0072 (0.0314)
Observations	140556	74838	131350		31472	111202
Panel B: 1933 fertility of 1928–32 marriages versus 1938 fertility of 1933–37 marriages						
Treatment (T_i)	0.0219* (0.0115)	0.0506*** (0.0195)	0.0306 (0.0259)		0.0217* (0.0111)	-0.0890*** (0.0103)
German Territory (GE_i)	-0.0891*** (0.0079)	-0.0729*** (0.0124)	-0.1345*** (0.0466)		-0.1190*** (0.0207)	-0.0189*** (0.0072)
Treat*Germ. ($T_i * GE_i$)	0.0690*** (0.0122)	0.0309 (0.0204)	0.0577** (0.0263)		0.0762*** (0.0246)	0.0073 (0.0106)
Observations	157977	89583	151676		34719	125879
Pseudo R^2	0.036	0.040	0.036		0.038	0.037
Panel C: Fertility measured in 1938 of couples married in 1928–32 versus marriages in 1933–37						
Treatment (T_i)	-0.9561*** (0.0244)	-0.999*** (0.025)	-0.9644*** (0.0278)	-0.0304* (0.0165)	-0.9695*** (0.0345)	-1.0806*** (0.0332)
German Territory (GE_i)	0.0403*** (0.0096)	0.068*** (0.011)	-0.0497 (0.0476)	0.1466*** (0.0114)	0.0140 (0.0239)	-0.0014 (0.0098)
Treat*Germ. ($T_i * GE_i$)	-0.0582** (0.0233)	-0.087*** (0.025)	-0.0505* (0.0259)	-0.1728*** (0.0165)	-0.0557** (0.0274)	-0.0021 (0.0247)
Observations	157977	89583	151676	32655	34719	125879
Pseudo R^2	0.053	0.059	0.052	0.017	0.054	0.057
Panel D: Completed fertility in 1970 of couples married in 1928–32 versus marriages in 1933–37						
Treatment (T_i)	0.0176 (0.0209)	0.030 (0.029)	0.0245 (0.0250)	0.1257*** (0.0241)	-0.0251 (0.0194)	
German Territory (GE_i)	0.0107 (0.0102)	0.005 (0.017)	-0.1068** (0.0432)	0.0710*** (0.0154)	-0.0077 (0.0291)	
Treat*Germ. ($T_i * GE_i$)	-0.0558*** (0.0190)	-0.059** (0.030)	-0.0663*** (0.0239)	-0.1535*** (0.0245)	-0.0769*** (0.0225)	
Observations	157977	89583	151676	32655	34719	
Pseudo R^2	0.031	0.029	0.029	0.029	0.035	

Empire and the Weimar Republic. Most importantly, divorce was rarely granted in these regimes, so it is not an option in our simplified model. The utility of an adult agent of gender $g = \{m, f\}$ writes as:

$$u^g(c^g, n) = \ln c^g + \beta \ln n,$$

where $\{c^g, n\} \in \mathbb{R}^{2+}$ represent the consumption and fertility of individuals of gender g , respectively. For simplicity, and given the structure of the data we are trying to understand, we assume that having children outside of marriage is impossible and that single individuals have access to a given reservation utility \bar{u}^s . When people decide to marry, they need to collectively decide how much each partner will consume and how many children they will have.

We assume a framework *à la* Chiappori (1988) in which the decision-making process is collectively cooperative. We denote θ^f the bargaining power of the female partner and $1 - \theta^f$ that of the male partner. These powers may be determined by the relative income of the partners or by other factors, which would not change our main results, see Baudin et al. (2015) and Pollak (2005) for illustrations and discussion. Since there are no gender differences in preferences, we obtain that the weighted sum of utility flows over a couple's lifetime is written:

$$U(c^f, c^m, n) = \theta^f \ln c^f + (1 - \theta^f) \ln c^m + \beta \ln n,$$

where n is the number of children born to the couple. Couples pool their income and expenditures. In addition, women invest part of their time $l^f \in [0, 1]$ in raising children, and it is at this stage that the quality of the match matters. We assume:

$$n = (n_M l^f)^\alpha$$

$n_M > 1$ is a scalar representing the reproduction technology of the couple. We assume that children cannot be raised without a minimal time investment by the mother, while father's time is not required.¹⁸ The quality of the marital match is captured by $\alpha \in [0, 1]$; the better the quality of the marriage offer, the less time the mother needs to raise a given number of children.¹⁹

Each adult person is endowed with a unit of time while he or she can receive at most two marriage offers: one at the beginning of adulthood and, if he or she rejects it, a second one after a fraction of the time ϕ . Let's denote the quality of the first marriage offer as α_1 and the quality of the second marriage offer as α_2 . Then the household's budget constraint writes:

$$c^f + c^m = (1 - \mathbb{1}_\phi \phi - l^f)w^f + (1 - \mathbb{1}_\phi)w^m + \Omega, \quad (2)$$

where $\{w^f, w^m\} \in \mathbb{R}^{2+}$ is the wage per unit of labor and $\Omega > 0$ is non-labor income produced at the household level. $\mathbb{1}_\phi$ is an indicator variable that takes the value zero if the woman married early (she accepted her first marriage offer) and one if she married late (she accepted her second marriage offer after some time ϕ).

¹⁸This assumption does not affect our main results qualitatively, but it hinders us from predicting the emergence of the male breadwinner model among couples.

¹⁹We could also have chosen an alternative specification in which the quality of the match, instead of affecting the ability to have children, would have affected the couple's ability to produce non-market income. It would not have changed our results qualitatively. The idea that better match quality induces more fertility would still hold through a positive income effect on fertility.

Proposition 1 For a given set $\{w^m, w^f\}$, there exists a unique set of critical values $\{\hat{\alpha}_1, \hat{\alpha}_2, w^*, \tilde{w}$ such that:

- $\forall \alpha_1 < \hat{\alpha}_1$, the woman refuses her first marriage offer. In this case, if $\alpha_2 < \hat{\alpha}_2$, she remains single for the rest of her life. Conversely, if $\alpha_2 \geq \hat{\alpha}_2$, she accepts her second marriage offer; within the couple she forms with her partner:

- If $w^f \leq \tilde{w} \equiv \frac{\beta\alpha_2(w^m + \Omega)}{1 - \phi}$, she specializes in child-rearing activities ($l^f = 1 - \phi$), household fertility equals: $\tilde{n} = ((1 - \phi)n_M)^{\alpha_2}$, while consumption levels are $c^f = \theta(1 - \phi)(w^m + \Omega)$ and $c^m = (1 - \theta)(1 - \phi)(w^m + \Omega)$
- If $w^f > \tilde{w}$, she allocates her time between rearing children and working in the labor market ($l^f < 1 - \phi$). Fertility is then given by:

$$\tilde{n} = \left[n_M \frac{\beta\alpha_2}{1 + \beta\alpha_2} \frac{w^m + (1 - \phi)w^f + \Omega}{w^f} \right]^{\alpha_2},$$

while consumption levels are $c^f = \frac{\theta(1 - \phi)(w^m + w^f + \Omega)}{1 + \beta\alpha_2}$ and $c^m = \frac{(1 - \theta)(1 - \phi)(w^m + w^f + \Omega)}{1 + \beta\alpha_2}$.

- $\forall \alpha_1 \geq \hat{\alpha}_1$, the woman accepts her first marriage offer. Within the couple she forms with her partner:

- If $w^f \leq w^* \equiv \beta\alpha_1(w^m + \Omega)$, she specializes in child-rearing activities ($l^f = 1$), household fertility is maximal: $n^* = (n_M)^{\alpha_1}$; while consumption levels are $c^f = \theta(w^m + \Omega)$ and $c^m = (1 - \theta)(w^m + \Omega)$
- If $w^f > \bar{w}$, the female partner allocates her time between childrearing and labor market activities ($l^f < 1$). Then fertility equals:

$$n^* = \left[n_M \frac{\beta\alpha_1}{1 + \beta\alpha_1} \frac{w^m + w^f + \Omega}{w^f} \right]^{\alpha_1},$$

while consumption levels are $c^f = \frac{\theta(w^m + w^f + \Omega)}{1 + \beta\alpha_1}$ and $c^m = \frac{(1 - \theta)(w^m + w^f + \Omega)}{1 + \beta\alpha_1}$.

Fertility follows directly from the marital decision and the maximization of the couple's objective function under the budget constraint and $l^f \leq 1$. High fertility concerns low-income women, while an increase in the relative wage of the latter reduces their fertility in the interior regime. When men have very low wages, their wives tend to reduce their fertility in order to participate in the labor force. A key insight from Proposition 1 is that higher marital quality α leads to more fertile marriages: because they are more efficient at raising children, high-quality marriages are more likely to have large families. A simple proof of this claim is obtained by showing that $\frac{dn^*}{d\alpha_1} > 0$ and $\frac{d\tilde{n}}{d\alpha_1} > 0$ for any value of w^f .

Another important feature of Proposition 1 is the effect of ϕ : the later the marriage, the lower fertility, and thus the smaller the surplus to be shared within marriage. Intuitively, this implies that the second marriage offer must be of higher quality than the first marriage offer in order to result in a marriage.

We denote the value for a woman to accept an early marriage offer (first offer) as $V_e^f = u^f(c^f(n^*), n^*)$ and for the man as $V_e^m = u^m(c^m(n^*), n^*)$. We denote V_l^g the value of accepting a late marriage offer, estimated at the moment she or he receives the offer. It is written $V_l^f = (1 - \phi)u^f(c^f(\tilde{n}), \tilde{n})$ for a woman and $V_l^m = (1 - \phi)u^m(c^m(\tilde{n}), \tilde{n})$ for a man. We can now write the arbitrage conditions that determine whether

a woman would accept or reject a marriage offer for a set $\{\alpha_1, \alpha_2\}$. A woman will accept her first marriage offer if:

$$\begin{aligned} V_e^f &\geq \max\{\bar{u}^f; \phi\bar{u}^f + V_l^f\} \\ \Leftrightarrow \quad \phi(u^f(c^f(n^*), n^*) - \bar{u}^f) &> (1 - \phi)(u^m(c^m(\tilde{n}), \tilde{n}) - u^f(c^f(n^*), n^*)) \end{aligned}$$

If this condition is not fulfilled but $\alpha_2 > \alpha_1$, she may accept her second marriage offer if:

$$V_l^f \geq (1 - \phi)\bar{u}^f \Leftrightarrow U^f(c^f(\tilde{n}), \tilde{n}) > \bar{u}^f.$$

An important property of these decisions is that for a given α_2 , there exists a unique critical value $\hat{\alpha}_1$ such that for $\alpha_1 > \hat{\alpha}_1$ a woman will prefer to marry early and accept her first marriage offer. Notice that $\hat{\alpha}_1$ is an increasing function of α_2 , since the higher the latter, the more valuable it is to wait for the second offer. The nature of the marriage decision problem as well as the results of Proposition 1 imply that if a woman has rejected her first marriage offer ($\alpha_1 < \hat{\alpha}_1$), she will reject any second marriage offer of lower quality than the first. In this case, there exists a unique $\hat{\alpha}_2 > \hat{\alpha}_1$ such that for any $\alpha_2 > \hat{\alpha}_2$, a woman will accept her second marriage offer.

Impact of the Nazi regime

The next step is to enrich the model with the main features of the regime. To do so, we introduce a marriage premium in the form of a non-labor income supplement $\omega * n$ with $\omega > 0$, receiving this income supplement is conditional on the woman not working ($\mathbb{1}_l = 1$). This is equivalent to the marriage loan. We then write the new budget constraints:

$$c^f + c^m = (1 - \mathbb{1}_\phi\phi - \mathbb{1}_l l^f)w^f + (1 - \mathbb{1}_\phi\phi)w^m + \Omega + (1 - \mathbb{1}_l)\omega n.$$

We also introduce a utility penalty $p > 0$ if a person remains single, so that the value of singleness becomes $\bar{u}^s - p$. This corresponds to the tax that single people without children had to pay to finance the LEM. Finally, in line with the social pressure to have large families, we assume that fertility is socially rewarded by a utility flow $\epsilon > 0$ for each birth, so that the objective function of couples becomes:

$$U(c^f, c^m, n) = \theta^f \ln c^f + (1 - \theta^f) \ln c^m + (\beta + \epsilon) \ln n,$$

The behavior of the representative woman entering adulthood under the Nazi regime is described in the following proposition:

Proposition 2 *There exists a unique set of critical values $\{\alpha_1^N, \alpha_2^N, w^{*N}, \tilde{w}^N\}$ such that for a given set $\{w^m, w^f\}$:*

- $\forall \alpha_1 < \alpha_1^N$, the woman refuses her first marriage offer. In this case, if $\alpha_2 < \alpha_2^N$, she will remain single for the rest of her life. Conversely, if $\alpha_2 \geq \alpha_2^N$, she accepts her second marriage offer. Within the couple she forms with her partner:

- If $w^f \leq \tilde{w}^N$, she specializes in child-rearing activities ($l^f = 1 - \phi$) and accepts the loan offer, household fertility equals: $\tilde{n} = ((1 - \phi)n_M)^{\alpha_2}$, while the consumption levels are $c^f = \theta(1 - \phi)(w^m + \omega(n^M)^{\alpha_2} + \Omega)$ and $c^m = (1 - \theta)(1 - \phi)(w^m + \omega(n^M)^{\alpha_2} + \Omega)$.
- If $w^f > \tilde{w}^N$, she allocates her time between childrearing and labor market activities ($l^f < 1 - \phi$), but is no longer eligible for the loan. Fertility is then equal:

$$\tilde{n} = \left[n_M \frac{(\beta + \varepsilon)\alpha_2}{1 + (\beta + \varepsilon)\alpha_2} \frac{w^m + (1 - \phi)w^f + \Omega}{w^f} \right]^{\alpha_2},$$

while consumption levels are $c^f = \frac{\theta(1 - \phi)(w^m + w^f + \Omega)}{1 + (\beta + \varepsilon)\alpha_2}$ and $c^m = \frac{(1 - \theta)(1 - \phi)(w^m + w^f + \Omega)}{1 + (\beta + \varepsilon)\alpha_2}$.

- $\forall \alpha_1 \geq \alpha_1^N$, the woman accepts her first marriage offer and within the couple she forms with her partner:
 - If $w^f \leq w^{*N} \equiv (\beta + \varepsilon)\alpha_1(w^m + \omega)$, she specializes in childrearing activities ($l^f = 1$) and benefits from the loan. Household fertility is maximal: $n^* = (n_M)^{\alpha_1}$; while the consumption levels are $c^f = \theta(w^m + \omega(n^M)^{\alpha_1} + \omega)$ and $c^m = (1 - \theta)(w^m + \omega(n^M)^{\alpha_1} + \omega)$.
 - If $w^f > w^{*N}$, the female partner allocates her time between childrearing and labor market activities ($l^f < 1$), but is no longer eligible for the loan. The fertility is then equivalent to:

$$n^* = \left[n_M \frac{(\beta + \varepsilon)\alpha_1}{1 + (\beta + \varepsilon)\alpha_1} \frac{w^m + w^f + \Omega}{w^f} \right]^{\alpha_1},$$

while the consumption levels are $c^f = \frac{\theta(w^m + w^f + \Omega)}{1 + (\beta + \varepsilon)\alpha_1}$ and $c^m = \frac{(1 - \theta)(w^m + w^f + \Omega)}{1 + (\beta + \varepsilon)\alpha_1}$.

The net effect of the installation of the Nazi regime on fertility results from the opposition of three effects. First, the regime has created a **fertility pressure effect** that pushes up the fertility of treated women in each regime (corner or interior). Second, because fertility has increased in the interior regime for a given set $\{w^f, w^m\}$, there is a **maximal fertility margin effect**. Because $\tilde{w}^N > \tilde{w}$ and $w^{*N} > w^*$, the length of the female wage set for which maximal fertility behaviors prevail is larger. This effect corresponds to the result of the increased willingness of German women to leave the labor market.

These first two effects have a clear positive impact on the fertility of treated women. As in our regression exercises in the previous section, we need to distinguish two kinds of treatment, depending on whether a woman married before or after the regime was installed. For those who married just before, the policy of the Nazi regime would have a positive effect only through the fertility pressure effect. For those who married after, the loan policy is accessible and, in addition to the pressure effect, the adoption of the male breadwinner model with maximum fertility becomes more frequent: women who would have worked without the new regime now decide to stay at home.

These first two effects explain why treated women have a higher number of children compared to women who were untreated by the Nazi regime. It also suggests that women who benefited from the full set of incentives should have had more children than women who married just before the Nazi regime, while this is not the case in reality. This is explained by the existence of a third crucial effect, the **marriage quality effect**: the existence of a severe penalty p against single persons induces men and women to more easily accept low quality matches and especially for what concerns first marriage offers. Formally, we can prove

that $\alpha_1^N < \hat{\alpha}_1$. Because of this, fully treated women tend to marry earlier on average than their partially treated counterparts, while having fewer children because they are in lower quality unions.²⁰

The marriage quality effect on the average quality of late marriages is more contrasted because of two opposing forces. First, because people are more inclined to accept their first marriage, the minimum α_2 above which people prefer to wait is raised. In other words, the pool of candidates for late marriage is narrower and skewed to the right of the distribution of α_2 . However, this effect is somewhat mitigated by the presence of the penalty p , which induces people to more readily accept the second marriage offer conditional on having rejected the first.

Formally, denoting $n^* \equiv N^*(\omega, \varepsilon, \alpha_1)$ and $\tilde{n} \equiv \tilde{N}(\omega, \varepsilon, \alpha_1)$, the results of our main regression exercises can be understood by examining the following two differential equations:

$$dn^* = \frac{\partial N^*}{\partial \omega} d\omega + \frac{\partial N^*}{\partial \varepsilon} d\varepsilon + \frac{\partial N^*}{\partial \alpha_1} d\alpha_1 \quad (3)$$

$$d\tilde{n} = \frac{\partial \tilde{N}}{\partial \omega} d\omega + \frac{\partial \tilde{N}}{\partial \varepsilon} d\varepsilon + \frac{\partial \tilde{N}}{\partial \alpha_2} d\alpha_2 \quad (4)$$

If, according to our estimates and our model, the first two effects in each equation are positive, the reduction in the average quality of early unions, which concern more people than the situation without treatment, is negative. In fact, empirically, comparing partially and fully treated women in Germany leads to a differential negative effect, because for them $|\frac{\partial N^*}{\partial \alpha_1} d\alpha_1| > |\frac{\partial N^*}{\partial \omega} d\omega|$. As noted by Pine (1996), the loan is not large enough to have significantly increased the fertility of German women, while the strong penalty for childlessness outside marriage severely degraded the quality of unions among young people. Comparing treated and untreated women, the cumulative positive effects of social pressure ($\varepsilon > 0$) and the loan ($\omega > 0$) are strong enough to outweigh the negative marriage selection-quality effect. Finally, the reduction in marriage quality among treated women relative to their untreated counterparts should lead to more fragile marriages. The liberalization of divorce that followed the Nazi regime in Germany should have been accompanied by more divorces among treated women than among their untreated counterparts, especially among women who married young.

Our theoretical model offers an explanation of our main results based on a number of key mechanisms: **(i)** the loan policy per se did not have too much of an impact on fertility in quantitative terms, **(ii)** German women who married under the Nazi regime tended to marry earlier, and **(iii)** they accepted lower quality unions and thus should have a higher propensity to divorce later. In the next subsections, we test these three mechanisms. Let's finally notice that our model disregards infant mortality, which could be an important trigger of fertility change, especially if the Nazi regime implemented sanitary policies breaking the dynamics of infant and child mortality. Nevertheless, as evidenced in Figure 9 of appendix A, we cannot find a break in stillbirths nor in infant or child mortality that we could link to the empowerment of the Nazis in 1933.

²⁰Note that this marriage quality effect could theoretically lead to lower fertility of fully treated women compared to untreated women, but the positive effect of ε may more than compensate for this; which is the case when we compare $|EF|$ to $|AB|$.

5.2 Loan Policy

In this exercise, we limit our analysis to women in the Third Reich and again use a difference-in-difference approach, comparing women who married before 1933 ($T_i = 0$) with women who married after 1933 ($T_i = 1$). We then define a new binary variable, E_i , which takes the value one if the woman stopped working definitively within two years before her marriage. It equals zero if the woman stopped working earlier or never worked. Since we focus on German women who lived in the German Reich before 1939 and were not Jewish, we can conclude that these women were normally eligible for the marriage loan.²¹ We cannot guarantee that they actually benefited from the loan, so the effects we measure are more like an intent-to-treat effect than a treatment effect. Nevertheless, it should be remembered, as shown in Figure 1a, section 2, that a significant proportion (27.3%) of German women who married between 1933 and 1937 benefited from the loan.

We do not include women who definitively stopped working after their marriage because we cannot track their labor force participation in the two years before they married. In fact, the 1970 census asked women what year they definitively stopped working, not their entire labor supply history. Despite these limitations, we test the following regression model:

$$\mathcal{L}_{ijt} = \alpha_0 + \alpha_1 T_i + \alpha_2 E_i + \alpha_3 T_i * E_i + \beta X_i + u_j + v_i + \varepsilon_{ij},$$

where \mathcal{L}_{ijt} is defined as in the previous sections. In Table 7, the first column reports the results of our regression model when we pool all marriage cohorts and all age classes. In other words, we compare people who married between 1928 and 1932 with people who married between 1933 and 1937, regardless of their age at marriage. This estimate is the most important in Table 7, and it documents the absence of differential fertility between those who stopped working two years before their marriage during the Nazi regime and those who did the same before the Nazi regime. It then suggests that eligibility for and use of the loan policy had no significant effect on fertility behavior, whether measured in 1938 (short-run adjustment) or 1970 (long-run adjustment). In other words, controlling for the age at marriage, the loan policy appears to have been ineffective in raising marital fertility, which is consistent with the qualitative results of Pine (1996).

In the next five models of Table 7, we continue to compare people who married between 1928 and 1932 with people who married between 1933 and 1937, but this time we do it by marital age. The absence of an effect of the loan is verified for all age groups in the long run and for almost all of them in the short run. It is only for those who married between the ages of 17 and 19 that we find a negative temporary effect. This effect disappears in the long run. In the last five models, we again pool individuals according to their age at marriage. However, we compare marriage cohorts. With the exception of the 1931 vs. 1936 cohort, we do not find a persistent significant effect of the loan on fertility.

Our results suggest that, overall, the loan policy did not have the effect desired by the Nazi administration. However, it also did not produce the negative differential effect of Nazism on the fertility of newly married couples that we document in the previous section. In the next subsections, we show that while Nazi marriage policies may not have had direct effects on fertility, they were not without consequences for reproductive behavior. These effects were transmitted through stronger incentives to marry earlier into lower quality unions.

²¹Theoretically, there could be very few exceptions, e.g. if the woman had an inherited disease.

Table 7: Effect of eligibility to the marriage loan on fertility outcomes

Panel A: number of children in 1938 as dependent variable											
Age at marriage	All	17–19	20–24	25–29	30–34	35+			All ages		
Years	28–37	All years between 1928–1937					28 vs. 33	29 vs. 34	30 vs. 35	31–36	32 vs. 37
Treatment (M_i)	-1.0271*** (0.0227)	-1.0318*** (0.0524)	-1.0893*** (0.0183)	-1.1075*** (0.0368)	-0.8832*** (0.0353)	-0.7129*** (0.0645)	-0.2411*** (0.0138)	-0.3576*** (0.0146)	-0.4078*** (0.0195)	-0.5657*** (0.0265)	-0.7953*** (0.0159)
Eligible (E_i)	0.0637*** (0.0094)	0.1713*** (0.0170)	0.0926*** (0.0124)	0.0685*** (0.0134)	-0.0734*** (0.0136)	-0.3374*** (0.0507)	0.0616*** (0.0176)	0.0515*** (0.0176)	0.0890*** (0.0269)	0.0478*** (0.0084)	0.0638*** (0.0114)
$M_i * E_i$	-0.0364 (0.0242)	-0.0542*** (0.0194)	-0.0093 (0.0119)	-0.0064 (0.0388)	-0.0098 (0.0141)	0.0052 (0.0770)	-0.0322 (0.0240)	0.0169 (0.0261)	-0.0435 (0.0468)	-0.0552*** (0.0147)	-0.1183*** (0.0111)
Marriage FE	x	x	x	x	x	x					
Observations	79976	3492	33315	29512	9175	3024	16013	17267	16597	14878	15221
Pseudo R-Squared	0.053	0.046	0.049	0.051	0.041	0.032	0.026	0.029	0.036	0.051	0.084
Panel B: number of children in 1970 as dependent variable											
Age at marriage	All	17–19	20–24	25–29	30–34	35+			All ages		
Years	28–37	28–37					28 vs. 33	29 vs. 34	30 vs. 35	31–36	32 vs. 37
Treatment (M_i)	-0.0524* (0.0308)	-0.1248*** (0.0212)	-0.0920*** (0.0242)	-0.0349 (0.0454)	0.0391 (0.0400)	-0.1510** (0.0663)	-0.0022 (0.0127)	-0.0301** (0.0144)	-0.0062 (0.0178)	-0.0304 (0.0206)	-0.0387 (0.0336)
Eligible (E_i)	0.0822*** (0.0141)	0.1849*** (0.0220)	0.1087*** (0.0199)	0.0788*** (0.0172)	-0.0530*** (0.0148)	-0.3326*** (0.0580)	0.0822*** (0.0165)	0.0760*** (0.0250)	0.1064*** (0.0273)	0.0655*** (0.0076)	0.0752*** (0.0102)
$M_i * E_i$	-0.0178 (0.0249)	-0.0355 (0.0305)	-0.0104 (0.0162)	-0.0046 (0.0374)	0.0208 (0.0207)	0.1089 (0.0720)	-0.0011 (0.0209)	0.0023 (0.0221)	-0.0423 (0.0423)	-0.0292** (0.0126)	-0.0183 (0.0232)
Marriage FE	x	x	x	x	x	x					
Observations	79976	3492	33315	29512	9175	3024	16013	17267	16597	14878	15221
Pseudo R-Squared	0.033	0.012	0.012	0.013	0.020	0.021	0.036	0.031	0.033	0.031	0.035

The vector of basic controls in all estimations include Education, Religion, learned Occupation place of residence in 1939, if the person moved from the Soviet Zone, Year of birth. The controls on the partner are his religion, Education and age at marriage. All estimations are done with robust standard errors and cluster for the place of living in 1939. *** p-value<0.01, ** p-value<0.05, * p-value<0.1.

5.3 Marriage behavior

An increase in marriage, especially at younger ages, has been suggested by our model as an important mechanism behind the adjustment in average marital fertility. In this subsection, we aim to show how the installation of the Nazi regime actually shifted the overall probability of marriage. We use Kaplan-Meier curves to illustrate the shift in the number and distribution of marriages. This nonparametric approach estimates the survival curve $S(t)$, or the probability of not being married until t years after age 15:

$$\hat{S}(t) = \prod_{t_{(i)} \leq t} \frac{s_i - m_i}{s_i}$$

with s_i as unmarried and m_i as married women at $t_{(i)}$ years after age 15. In Figure 4, we use sample splits to compare women living inside and outside Germany and who married before or after 1933. Later on, in Figure 5, we repeat the exercise focusing on eligible and ineligible women who married before and after 1933 within the Reich.

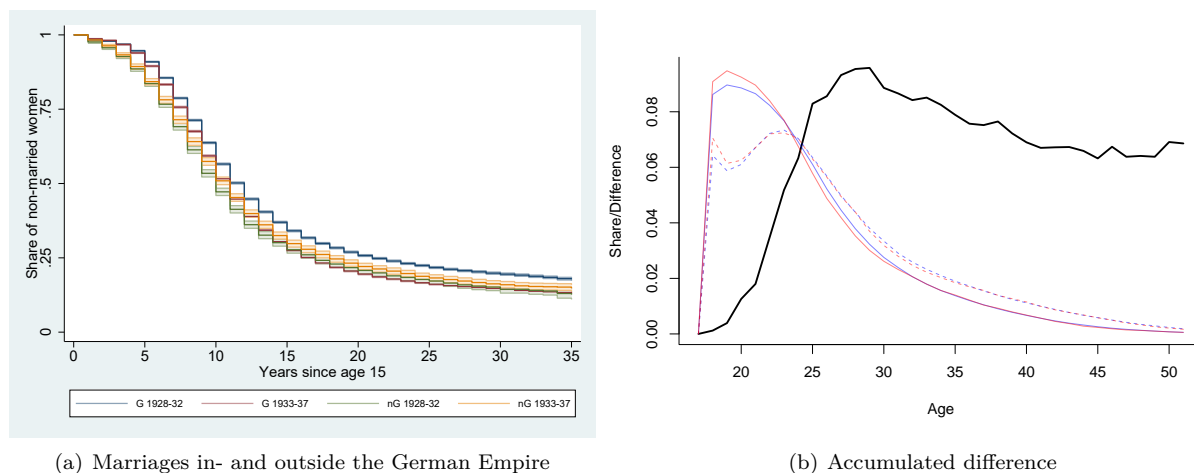


Fig. 4. Evolution of marriage probabilities between 1932 and 1937 inside and outside the German Territory

In Fig. 4a we split the sample of women according to their place of residence. In blue (respectively brown) we observe the age-specific probability of not being married in the Reich in the years 1928 to 1932 (respectively 1933 to 1937), while in green (respectively yellow) we observe the same statistic outside the Reich. Overall, the larger downward shift of the survival curve in the Reich indicates that marriage increased more inside the Reich than outside.

The black line in Figure 4b corresponds to the difference between the distance between the blue and brown lines and the distance between the green and yellow lines in Figure 4a. It then measures the cumulative average treatment effect of the Nazi regime on marriage for German women relative to non-German women. Looking at the last point on this line, we find a cumulative positive differential effect of 6.5 %-points, but this overall effect masks an important composition effect: up to age 29, the cumulative difference in the share of persons married during the Nazi regime compared to the pre-Nazi period was 9.6 %-points higher in the Third Reich than outside the Third Reich. At higher ages, this difference tended to decrease, suggesting a

strong redistribution of marriages toward younger ages inside the Reich relative to outside the Reich.

We can then see that the increase in the probability of getting married is strongly age-dependent and concentrated in the 17-29 age group. Importantly, the solid (and dashed) blue and red lines indicate the proportion of our sample population in the corresponding age group for the German Territory (and outside the German Territory, respectively). The positive effect affects a very large proportion of our population at risk of marriage.

Overall, we document a strong positive association between the Nazi regime and the probability of marrying at a younger age. Any model of endogenous marriage decisions would predict that such a push into marriage, driven by repressive policies punishing unmarried childless persons, would induce a reduction in the average quality of marriages. Consistent with the results in Panel C and Panel D of Table 5, this potential reduction in the quality of marriages led to a decline in the fertility of newly married women under the Nazi regime.

In a second exercise, we turn our attention to the differences between women who were eligible for the loan policy and women who were not eligible within the Empire. Figure 5a depicts the probability of not being married at each age among women who were eligible and eventually married at some point in time. The blue (resp. green) line represents eligible (resp. non-eligible) women who married between 1928 and 1932, while the red (resp. yellow) line represents eligible (resp. non-eligible) women who married under the Nazi administration.

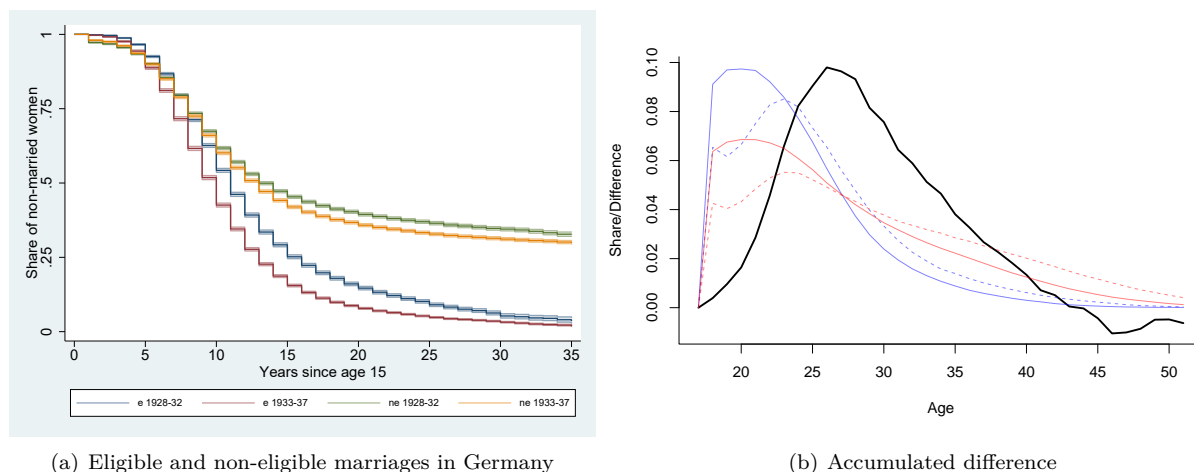


Fig. 5. Differential evolution of marriage probabilities within the German Empire

The black line in Figure 5b is similar to that in Figure 4. It documents a cumulative overall effect very close to zero (at least not significantly different from zero), suggesting that the LEM policy itself did not have a specific effect on the cumulative probability of marriage. Nevertheless, it again suggests a strong redistribution of ages at marriage, as eligible women tended to marry much earlier than ineligible women. We can then see that the LEM seems to have been effective in pushing young women out of the labor force and into marriage.

In synthesis, we provide evidence here that although the LEM may not have increased the fertility of newly married German women compared to the pre-Nazi period, its implementation and its funding scheme based

on the severe punishment of non-marital life were effective in increasing marriage rates among the targeted population. Such marriages would have been of lower quality compared to a hypothetical situation without punishment for living outside marriage. It resulted in less fertile marriages.

5.4 Divorce

In our collective cooperative household model, a decline in the quality of marriages is a key mechanism in explaining the decline in the average fertility of married couples after the introduction of the LEM. In this section, we examine potential selection into marriage using divorce as an indicator of low-quality marriages. Divorce, as our outcome variable, takes value one if the respondent was divorced and never remarried, and it takes the value of zero if she is still married. As in the rest of the paper, data limitations prevent us from tracking women who married before or during the Nazi regime, divorced, and remarried after 1938.

Table 8: Divorce: Age at marriage and the quality of matches

Model	German Territory		Eligible	
	Inside	Outside	Yes	No
Treatment (T_i)	0.3200*** (0.0629)	0.5277 (0.3961)	1.2548*** (0.0950)	-0.3628 (0.2559)
Age at marriage (A_i)	0.0232*** (0.0035)	0.0579** (0.0359)	0.0935*** (0.0133)	0.0608*** (0.0028)
Treat* Age at marriage ($T_i * A_i$)	-0.0104*** (0.0008)	-0.0255 (0.0205)	-0.0428*** (0.0085)	-0.0139 (0.0094)
Observations	93050	5654	25701	25082
Pseudo R-Squared	0.024	0.036	0.027	0.027

The vector of basic controls in all estimations include Education, Religion, learned Occupation, place of residence in 1939, if the person moved from the Soviet Zone. All estimations are done with robust standard errors and cluster for the place of living in 1939. *** p-value<0.01, ** p-value<0.05, * p-value<0.1.

In a logistic regression setting, we use the same set of basic controls as before and focus our attention on two main variables. T_i takes value one if the person married between 1933 and 1937, and zero if she married before. Or said differently, it captures the effect of marrying under the Nazi regime compared to marrying before. A_i is the age at marriage of woman i . Finally, we interact these two variables to capture how the effect of marrying under the Nazi administration on the probability of divorce is modulated by age at marriage.

In Table 8 we present the results of four logistic regression models using sample splits. Our first regression model focuses on all women who married within the Third Reich. We see an overall positive effect of T_i , but this effect becomes smaller and smaller as the age at marriage increases. We estimate that marrying under the Nazi regime is associated with an increase in the probability of divorce for women who married before age 30, which is almost the point of return of Figure 4b. Thus, the relative increase in the prevalence of young marriages under the Nazi regime was associated with an increased likelihood of divorce. This confirms our interpretation that Nazi family policies relatively depressed the fertility of newly married couples by pushing too many Germans to marry early in order to form families and feed the demographic rise of the Aryan

population. Interestingly, our second regression model shows that outside the German Empire, the Nazi era and its interaction with age at marriage have no effect on the probability of divorce.

In a next step, we focus on the German Territory and split our sample into eligible and non-eligible marriages. We also find a higher probability of divorce among those women who were eligible for the LEM and, more specifically, for the loan. This is not the case for women who were not eligible. This suggests that women who were targeted and presumably benefited from the policy are those who later suffered higher divorce rates. These are essentially younger women up to age 29 - those eligible women with a high increase in marriages according to Figure 5b and who were the main group of women taking the loan.²²

According to the results of Sub-Sections 5.2 and 5.3, this finding suggests that the negative impact of Nazi family policies, specifically targeted at newly married women, on fertility was not a direct effect of the loan itself. Instead, it appears to have passed through a selection process, leading to more fragile unions at younger ages.

6 Conclusion

We started this paper by opposing the views of Lisa Pine and Dirk Kirk on the efficiency of Nazi policies on fertility. Taking a necessarily short-run perspective, Kirk (1942) documented a positive effect of the Nazi regime on births. Our findings confirm his assertion, since in 1938 married women treated by the Nazis, regardless of the date of their marriage, tended to have more children than their counterparts living outside the Reich. Regarding the total number of births, this effect was magnified by the increasing number of marriages. Nevertheless, the general positive effect on marital fertility has disappeared over time. Pine (1996) argued that the Law for the Encouragement of marriage and its flagship measure, the loan policy, were ineffective in increasing the fertility of German women. She was indeed right in the sense that German women eligible for the loan policy did not adopt fertility patterns different from those of their non-eligible German counterparts.

Nevertheless, it would be inaccurate to claim that the Nazi family policies aimed at newly married couples were without effect. In reality, they exerted a strong pressure to marry on Germans, who were more likely to accept low-quality matches on the marriage market. This pressure to marry and have children manifested itself economically through the “marriage assistance” that forced single people to finance the loan policy. It also manifested itself in people’s daily lives through social pressure and propaganda. In a perpetual effort to justify his own childlessness, Adolf Hitler presented himself as totally devoted to the “Aryan Volk” and glorified the family of Joseph Goebbels, whom he portrayed as the ideal father of six children with a blond wife (Pine, 1996). The Reich’s family policies and the atmosphere they created resulted in a decrease in the age of marriage and an increase in the likelihood of divorce for those who married early. Without the treatment imposed on unmarried persons after 1933, the fertility of native Germans would have been close to that of the migrants who form our control group. The unintentional fertility reduction induced by the Nazi regime was equivalent to that which would have occurred in the case of a democratization of education toward universal secondary and tertiary education among women who married between 1928 and 1937. This negative effect on fertility is the main if not the only legacy of National Socialism on the fertility of German women affected by its policies.

²²See Appendix A, for the the share of women taking the loan by age at marriage in the years 1937 and 1938.

Our paper is the first to examine the effects of the Nazi regime on fertility in Germany in both the short and long term. Our focus on married German women within the Reich implies that we do not capture the most extreme features of Nazi intervention in reproduction. For example, the long-term effects of eugenic sterilization remain to be studied, as do the effects of persecution on the reproductive behavior of the persecuted.

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A Historical Context

We display among the couples who married either in 1937 or in 1938, the proportion who benefited from the loan policy.

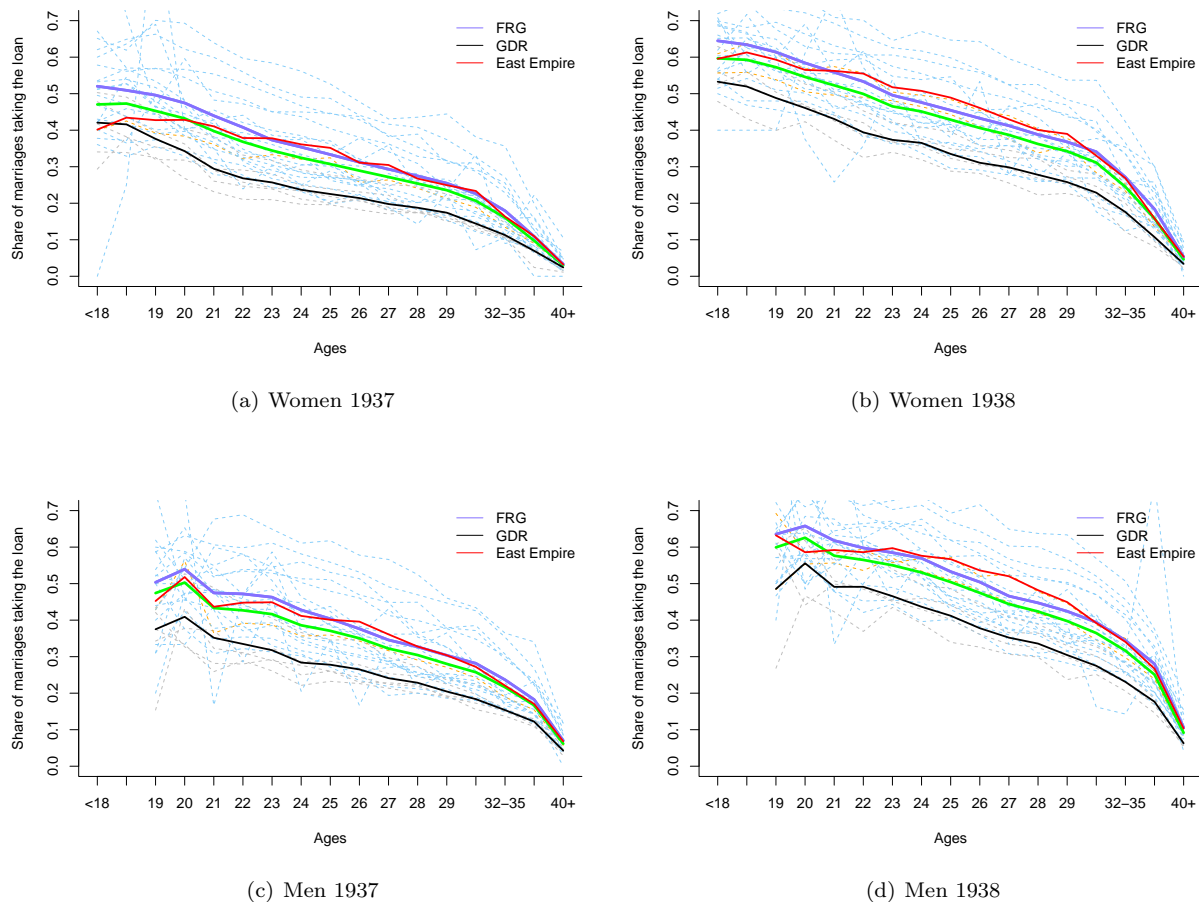


Fig. 6. Share of marriages with the loan across ages

Available data in the census 1933 and 1939 restricts to the number of births realized within a marriage. It is organized by marriage cohort, province and parity. Figure 7 shows the example of Berlin, which is one of the 49 provinces we consider and list in Table 9. Let's notice that Saarland has been excluded as it was not belonging to Germany in 1933.

Eheschließungsjahr — Gemeindegrößenklassen	Zahl der verheirateten Frauen											
	ins- gesamt	davon mit ... in der jetzigen Ehe geborenen Kindern										
		0	1	2	3	4	5	6	7	8	9	10 und mehr
Stadt Berlin												
1939	17 013	14 942	1 787	222	57	5	—	—	—	—	—	—
1938	49 125	35 529	12 237	1 140	165	51	3	—	—	—	—	—
1937	45 407	26 265	16 126	2 589	345	62	20	—	—	—	—	—
1936	41 847	20 712	15 917	4 472	617	96	24	8	1	—	—	—
1935	47 480	21 651	17 713	6 525	1 283	231	62	14	—	1	—	—
1934	54 208	22 353	19 954	9 064	2 143	537	116	35	6	—	—	—
1933	41 570	15 785	14 712	7 841	2 346	628	192	51	12	3	—	—
1932	31 575	11 711	10 694	6 114	2 019	709	238	62	24	4	—	—
1931	32 086	12 054	10 565	6 229	2 124	720	275	75	28	16	—	—
1930	38 140	15 046	12 154	7 044	2 463	867	353	134	52	26	1	—
1929	39 006	15 323	12 518	7 048	2 541	997	355	126	58	30	9	1
1928	37 688	14 843	11 906	6 616	2 567	1 009	410	176	93	38	14	16
1927	32 585	12 635	10 106	5 851	2 305	920	402	177	89	61	22	17
1926	28 431	10 734	8 996	5 194	1 983	850	328	176	64	56	25	25
1925	27 405	10 547	8 708	4 780	1 896	794	334	176	91	41	22	16
1924	23 529	9 144	7 468	4 159	1 632	608	249	146	57	36	21	9
1923	31 245	11 934	10 244	5 643	1 937	756	349	168	95	36	18	25
1922	34 942	12 719	11 984	6 306	2 271	855	406	182	88	56	42	33
1921	32 955	11 023	11 190	6 559	2 380	1 006	373	200	101	64	28	31
1920	39 712	12 013	14 319	8 212	3 038	1 145	461	247	129	60	37	51
1919	36 552	10 186	13 093	8 100	3 074	1 153	458	226	110	69	38	45
1918 bis 1914	79 397	19 660	25 920	19 671	8 053	3 271	1 325	677	344	184	111	181
1913 und früher	284 470	43 704	63 685	69 224	43 826	25 922	14 382	8 793	5 162	3 676	2 203	3 893
Summe	1 126 368	390 513	341 996	208 603	91 065	43 232	21 115	11 849	6 604	4 457	2 591	4 343
davon in Gemeinden mit weniger als 2 000 Einw.	—	—	—	—	—	—	—	—	—	—	—	—
2 000 h. unt. 100 000 Einw.	—	—	—	—	—	—	—	—	—	—	—	—
100 000 und mehr Einw.	1 126 368	390 513	341 996	208 603	91 065	43 232	21 115	11 849	6 604	4 457	2 591	4 343

Fig. 7. Data available from the census 1933 and 1939: The example of Berlin 1939.

Table 9: List of provinces from the census 1933 and 1939

West Germany (FRG)	East Germany (GDR)	East German Territories
Anhalt, Baden, Brunswick, Bremen, Hamburg, Hesse, Free State of Oldenburg, <i>Berlin</i> , Hesse-Nassau, Schleswig- Holstein, Württemberg, Aurich, Aachen / Aix-la- Chapelle, Arnsberg, Düsseldorf, Dresden-Bautzen, Hannover and Schaumburg-Lippe, Hildesheim, Koblenz, Cologne, Lüneburg, Minden and Free state of Lippe, Münster, Lower Bavaria and Up- per Palatinate, Upper Bavaria, Osnabrück, Upper Franconia and Middle Franconia, Palati- nate, Swabia (Bavaria), Stade, Sigmaringen, Trier, Lower Franconia, Potsdam	Mecklenburg, <i>Pomerania</i> , <i>Berlin</i> , Thuringia, Chem- nitz, Erfurt, Frankfurt, Leipzig, Magdeburg, Merseburg, Zwickau	East Prussia, <i>Pomerania</i> , Bres- lau/Wroclaw, Posen-West Prus- sia, Legnica, Opole

Table 10: Marriage assistance

Tax rate	0%	2%	3%	4%	5%
Labour income	< 75	75–149	150–299	300–499	> 500
“Veranlagten”	< 750	750–1,299	1,300–3,099	3,100–5,499	> 5,500



Fig. 8. 100 Reichsmark Marriage loan voucher for furniture and household utensil

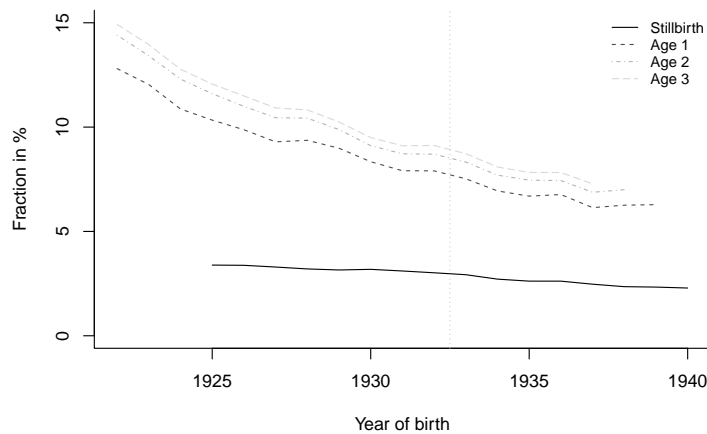


Fig. 9. Mortality across offspring in the German Territory 1922-40.

B Additional robustness checks

B.1 Placebo tests

Tables 11-13 summarize the results of the Placebo tests proposed in Subsection 3.

Table 11: Placebo test: $|AB|$ vs. $|CD|$

Model	1923	1924	1925	1926	1927	1923-27
Dependent variable	kids 1933	kids 1933	kids 1933	kids 1933	kids 1933	kids 1933
Treatment (M_i)	0.2187*** (0.0203)	0.3359*** (0.0180)	0.4018*** (0.0370)	0.5538*** (0.0430)	0.7899*** (0.0549)	1.0099*** (0.0390)
German Territory (G_i)	-0.0641 (0.0430)	0.2437* (0.1248)	0.0287 (0.0709)	-0.2185*** (0.0562)	0.1275 (0.1514)	0.0214 (0.0350)
Treat*Germ. ($M_i * G_i$)	0.0295 (0.0205)	-0.0120 (0.0186)	0.0184 (0.0371)	-0.0048 (0.0432)	0.0003 (0.0551)	0.0072 (0.0314)
Year of marriage						x
Observations	22656	19222	22150	22042	25132	111202

Table 12: Placebo test: $|AB|$ vs. $|EF|$

Model	1923 & 28	1924 & 29	1925 & 30	1926 & 31	1927 & 32	1923-32
Dependent variable	Number of kids after ... years of marriage					
	5 years	4 years	3 years	2 years	1 year	Pooled
Treatment (T_i)	-0.0918** (0.0447)	-0.1246*** (0.0425)	-0.1677*** (0.0607)	-0.0564** (0.0270)	-0.0839*** (0.0263)	-0.0890*** (0.0103)
German Territory (GE_i)	-0.0756*** (0.0242)	0.0563** (0.0244)	-0.0229 (0.0400)	-0.1702*** (0.0161)	0.1498*** (0.0143)	-0.0189*** (0.0072)
Treat*Germ. ($T_i * GE_i$)	-0.0030 (0.0451)	0.0207 (0.0433)	0.0362 (0.0611)	-0.0627** (0.0298)	0.0004 (0.0266)	0.0073 (0.0106)
Years married						x
Observations	25835	24512	26594	24201	26335	125879
Pseudo R-Squared	0.014	0.013	0.011	0.010	0.008	0.037

Table 13: Placebo test: $|CD|$ vs. $|EF|$

Model	1923 & 28	1924 & 29	1925 & 30	1926 & 31	1927 & 32	1927 & 29	Pooled
Dependent variable	kids 1933	kids 1933	kids 1933	kids 1933	kids 1933	kids 1933	kids 1933
Treatment (T_i)	-0.2972*** (0.0675)	-0.4253*** (0.0305)	-0.5562*** (0.0224)	-0.5919*** (0.0378)	-0.8469*** (0.0709)	-0.2435*** (0.0211)	-1.0806*** (0.0332)
German Territory (GE_i)	-0.0305 (0.0316)	0.0474*** (0.0161)	0.0250* (0.0128)	-0.1162*** (0.0122)	0.0538** (0.0213)	-0.0322** (0.0129)	-0.0014 (0.0098)
Treat*Germ. ($T_i * GE_i$)	-0.0155 (0.0677)	0.0272 (0.0320)	0.0333 (0.0227)	-0.0535 (0.0386)	-0.0103 (0.0713)	0.0330 (0.0238)	-0.0021 (0.0247)
Year of marriage							x
Observations	25484	24147	26196	23922	26130	27102	125879
Pseudo R-Squared	0.030	0.037	0.044	0.057	0.079	0.021	0.057

The vector of basic controls in all estimations include Education, Religion, learned Occupation place of residence in 1939, if the person moved from the Soviet Zone, Year of birth. The controls on the partner are his religion, Education and age at marriage. All estimations are done with robust standard errors and cluster for the place of living in 1939. *** p-value<0.01, ** p-value<0.05, * p-value<0.1.

B.2 Decomposition of main results by specific years of marriage

Table 14: The effect of Nazism on immediate fertility of pre-married couples ($|AB|$ vs. $|CD|$)

Marital cohort	1928	1929	1930	1931	1932	1928-32
Treatment (T_i)	0.2315*** (0.0215)	0.3198*** (0.0380)	0.4325*** (0.0046)	0.5543*** (0.0393)	0.7083*** (0.0529)	0.9774*** (0.0393)
German Territory (GE_i)	-0.0624** (0.0309)	-0.0904 (0.0770)	-0.0181 (0.1675)	-0.0863* (0.0446)	-0.0263 (0.0821)	-0.0558** (0.0246)
Treat*Germ. ($T_i * GE_i$)	0.1012*** (0.0215)	0.0997*** (0.0380)	0.1043*** (0.0050)	0.1285*** (0.0394)	0.2229*** (0.0530)	0.1250*** (0.0306)
Year of marriage						x
Observations	28312	29072	30242	25802	27128	140556

Table 15: Effect of Nazism on immediate fertility after x years of marriage ($|AB|$ vs. $|EF|$)

Dependent variable	Number of kids after ... years of marriage					
	5 years	4 years	3 years	2 years	1 year	Pooled
Marriage cohorts	1928 & 33	1929 & 34	1930 & 35	1931 & 36	1932 & 37	1928-37
Treatment (T_i)	-0.0508*** (0.0143)	0.0645*** (0.0165)	0.0443** (0.0206)	-0.0507*** (0.0133)	0.0266 (0.0574)	0.0219* (0.0115)
German Territory (GE_i)	-0.1203*** (0.0110)	-0.0787*** (0.0086)	-0.0360*** (0.0098)	-0.0682*** (0.0090)	-0.1104*** (0.0350)	-0.0891*** (0.0079)
Treat*Germ. ($T_i * GE_i$)	0.1320*** (0.0145)	0.0084 (0.0186)	0.0455** (0.0215)	0.1127*** (0.0135)	0.0401 (0.0583)	0.0690*** (0.0122)
Years married	x					
Observations	30949	33810	32969	30278	31084	157977
Pseudo R-Squared	0.014	0.011	0.009	0.007	0.007	0.036

The vector of basic controls in all estimations include Education, Religion, learned Occupation place of residence in 1939, if the person moved from the Soviet Zone, Year of birth. The controls on the partner are his religion, Education and age at marriage. All estimations are done with robust standard errors and cluster for the place of living in 1939. *** p-value<0.01, ** p-value<0.05, * p-value<0.1.

Table 16: The effect of Nazism on marital fertility in 1938 ($|CD|$ vs. $|EF|$)

Model	1928 & 33	1929 & 34	1930 & 35	1931 & 36	1932 & 37	Pooled
Dependent variable	kids 1938	kids 1938	kids 1938	kids 1938	kids 1938	kids 1938
Treatment (T_i)	-0.2620*** (0.0182)	-0.2434*** (0.0263)	-0.3717*** (0.0165)	-0.5843*** (0.0572)	-0.6571*** (0.0154)	-0.9561*** (0.0244)
German Territory (GE_i)	-0.0212** (0.0100)	0.0282** (0.0115)	0.0566*** (0.0059)	0.0472** (0.0225)	0.1157*** (0.0069)	0.0403*** (0.0096)
Treat*Germ. ($T_i * GE_i$)	0.0234 (0.0182)	-0.0918*** (0.0274)	-0.0562*** (0.0173)	-0.0121 (0.0570)	-0.1877*** (0.0163)	-0.0582** (0.0233)
Year of marriage	x					
Observations	30753	33627	32727	30022	30848	157977
Pseudo R-Squared	0.026	0.029	0.036	0.054	0.079	0.053

Table 17: The effect of Nazism on completed marital fertility ($|CD|$ vs. $|EF|$)

Model	1928 & 33	1929 & 34	1930 & 35	1931 & 36	1932 & 37	1928-37
Dependent variable	kids 1970	kids 1970	kids 1970	kids 1970	kids 1970	kids 1970
Treatment (M_i)	0.0239 (0.0273)	0.1058*** (0.0224)	0.0257** (0.0121)	-0.0290 (0.0578)	0.0366 (0.0284)	0.0176 (0.0209)
German Territory (G_i)	-0.0142 (0.0162)	0.0330** (0.0129)	0.0593*** (0.0073)	-0.0654** (0.0327)	0.0354* (0.0196)	0.0107 (0.0102)
Treat*Germ. ($M_i * G_i$)	-0.0077 (0.0273)	-0.1265*** (0.0239)	-0.0493*** (0.0123)	-0.0187 (0.0585)	-0.0806** (0.0350)	-0.0558*** (0.0190)
Year of marriage						x
Observations	30753	33627	32727	30022	30848	157977
Pseudo R-Squared	0.033	0.031	0.031	0.031	0.031	0.031

The vector of basic controls in all estimations include Education, Religion, learned Occupation place of residence in 1939, if the person moved from the Soviet Zone, Year of birth. The controls on the partner are his religion, Education and age at marriage. All estimations are done with robust standard errors and cluster for the place of living in 1939. *** p-value<0.01, ** p-value<0.05, * p-value<0.1.

B.3 Balancing tests and balanced estimations

Table 18: Overview on balancing tests for women living in- and outside the German Empire marrying between 1938 and 1937.

	German Territory		Value	Difference	
	Outside	Inside		lower	upper
Birth cohort	1915.1	1914.8	0.2980	-0.1921	0.7880
Age at marriage	24.8	25.5	-0.6847	-0.7828	-0.5866
Education					
Elementary school	0.8427	0.8790	-0.0363	-0.0439	-0.0288
Secondary school	0.0942	0.0690	0.0252	0.0192	0.0313
High school	0.0117	0.0061	0.0056	0.0034	0.0079
Technical school	0.0377	0.0381	-0.0004	-0.0043	0.0036
Engineering school	0.0002	0.0001	0.0001	-0.0002	0.0004
University	0.0135	0.0077	0.0057	0.0034	0.0081
Religion					
Evangelic (w. free church)	0.1944	0.5391	-0.3447	-0.3531	-0.3362
Evan. Free church	0.0139	0.0225	-0.0086	-0.0111	-0.0061
Catholic	0.7661	0.3906	0.3756	0.3666	0.3845
other Christian	0.0097	0.0066	0.0031	0.0011	0.0051
not affiliated with any religion	0.0096	0.0352	-0.0256	-0.0278	-0.0234
other religion	0.0062	0.0061	0.0002	-0.0015	0.0018
Learned Occupation					
Framing	0.0017	0.0028	-0.0011	-0.0019	-0.0002
Mining	0.0000	0.0001	-0.0001	-0.0001	0.0000
Manufacturing	0.0772	0.0636	0.0137	0.0081	0.0192
Engineers	0.0003	0.0009	-0.0006	-0.0010	-0.0002
Merchants	0.0205	0.0520	-0.0315	-0.0346	-0.0284
Post	0.0002	0.0007	-0.0005	-0.0009	-0.0002
Officials	0.0001	0.0001	0.0000	-0.0002	0.0002
Manager	0.0028	0.0038	-0.0010	-0.0022	0.0001
Policy	0.0000	0.0001	-0.0001	-0.0002	0.0000
Publicists	0.0002	0.0002	0.0000	-0.0003	0.0003
Artists	0.0025	0.0013	0.0012	0.0002	0.0022
Medical doctors	0.0005	0.0005	0.0001	-0.0004	0.0006
Nurses and other medical	0.0098	0.0116	-0.0018	-0.0038	0.0003
Pedagogues	0.0064	0.0058	0.0006	-0.0011	0.0022
Academics	0.0000	0.0001	-0.0001	-0.0001	0.0000
Service man	0.0252	0.0542	-0.0289	-0.0323	-0.0256
Family	0.0001	0.0002	-0.0001	-0.0003	0.0001
None	0.8524	0.8021	0.0502	0.0428	0.0577

Table 19: Overview on balanced estimations.

Model	entropy balancing	k-nearest neighbors	Coarsened exact matching
Panel A: Fertility of couples married in 1928–32			
in measured 1933 versus 1938			
Treatment (T_i)	0.9877*** (0.0061)	1.1049*** (0.0111)	1.0100*** (0.0140)
German Territory (GE_i)	-0.1045*** (0.0044)	-0.0513 (0.0483)	-0.1221*** (0.0260)
Treat*Germ. ($T_i * GE_i$)	0.1153*** (0.0023)	0.1271*** (0.0269)	0.1074*** (0.0080)
Observations	140556	126536	131350
1933 fertility of 1928–32 marriages			
Panel B: versus 1938 fertility of 1933–37 marriages			
Treatment (T_i)	0.0358 (0.0257)	0.0156 (0.0264)	0.0306 (0.0259)
German Territory (GE_i)	-0.1358*** (0.0465)	-0.0578 (0.0486)	-0.1345*** (0.0466)
Treat*Germ. ($T_i * GE_i$)	0.0521** (0.0260)	0.0582** (0.0270)	0.0577** (0.0263)
Observations	157977	147697	151676
Panel C: Fertility measured in 1938 of couples			
married in 1928–32 versus marriages in 1933–37			
Treatment (T_i)	-0.8874*** (0.0405)	-0.9056*** (0.0609)	-0.9644*** (0.0278)
German Territory (GE_i)	-0.0295 (0.0450)	0.0393 (0.0475)	-0.0497 (0.0476)
Treat*Germ. ($T_i * GE_i$)	-0.0618** (0.0246)	-0.0680*** (0.0261)	-0.0505* (0.0259)
Observations	157977	147697	151676
Panel D: Completed fertility in 1970 of couples married			
in 1928–32 versus marriages in 1933–37			
Treatment (T_i)	0.0544 (0.0345)	0.0251 (0.0516)	0.0245 (0.0250)
German Territory (GE_i)	-0.0583 (0.0423)	0.0140 (0.0425)	-0.1068** (0.0432)
Treat*Germ. ($T_i * GE_i$)	-0.0665*** (0.0229)	-0.0789*** (0.0242)	-0.0663*** (0.0239)
Observations	157977	147697	151676