Forschungs- und Literaturbericht

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Mass Weddings, Baby Boom and Full Employment?
Massenhochzeiten, Babyboom und Vollbeschäftigung?

Nazi Germany’s 1933 Marriage Loan and Its Efficacy in Theory and Practice
Das Ehestandsdarlehen im NS-Staat und seine Wirksamkeit in der Theorie und in der Umsetzung

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Abstract: In 1933, the German government introduced the marriage loan for newlyweds, a policy aimed at increasing marriages and births as well as male employment, which entailed a work ban for the wife and sizeable credit deductions for children. This paper illustrates that the policy was rather ineffective based on a critical evaluation of the existing literature on the topic, how the policy was implemented in practice, as well as a correlation and interrupted time series analysis and consideration of the historical context of the period between 1925 and 1939. This result starkly contrasts to the substantial changes expected at the time of the introduction. In theory, only a small fraction of newlyweds was eligible for the loan. In practice, the development of marriages post-introduction significantly differed from the period prior to the policy, but causation is unclear. While births increased, this can be attributed to a combination of policies and the improved economic environment compared to the crisis years. The sharp decrease in unemployment probably resulted from the introduction of several targeted policies and embellishment of unemployment statistics.

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1 Introduction

After the First World War, women in Germany had cemented their position in industrial work but faced resistance from certain parts of society to their advancement beyond their role as mothers and home keepers.¹ This is illustrated by the policy of the so-called marriage loan (Ehestandsdarlehen) that was implemented in Nazi Germany in 1933. In short, newlyweds who fulfilled the Nazis’ eugenic and political requirements received a sizeable loan upon their marriage to be used for the consumption of home goods. If the loan was granted, the wife was usually banned from the labour market for the duration of the loan. Moreover, 25 percent of the total loan sum was deducted for each child born to the couple. This policy design reveals that in theory the policy was aimed at increasing fertility and male employment as well as at decreasing female labour force participation.² Over the course of the years 1933-1939, around 1,500,000 marriage loans were paid in Germany, while the authorities granted 1,300,000 credit deductions.³ On average, 28 percent of newlyweds received a loan during this time, while 13 percent of live births granted the parents a credit deduction.

This paper’s goal is to evaluate the role marriage loans played in the evolution of marriages, births, and employment as well as at illustrating how the historical context might have impacted key patterns and results. The marriage loan and its potential effect on marriages, births and employment has previously been discussed in the context of industrial labour, the evolution of female employment, and the interaction between Nazi ideology and the policies implemented in the period 1933 to 1939. Several authors have already contributed to the discussion about marriage loans and their efficacy in reaching set targets.

¹ S. Bajohr, Die Hälfte der Fabrik. Geschichte der Frauenarbeit in Deutschland 1914 bis 1945, Marburg 1984, pp. 169-177.
Some state that marriages did not increase due to the marriage loan, but due to catch-up effects after the Great Depression.\(^4\) Related to births, Stephenson argues that the increase in births was not as great as postulated when the policy was implemented.\(^5\) Other authors attribute primarily other factors to the increase in births such as abortion laws and difficulty of obtaining contraceptives in the 1930s\(^6\) or an overall decrease in unemployment.\(^7\) The marriage loan policy is, however, granted a certain positive effect on births, particularly an increase in the number of fourth and fifth children born.\(^8\) The effect of the marriage loan on female employment is stated as de facto non-existent in the literature: Grunberger argues that companies continued to employ women due to their lower wages.\(^9\) Winkler points out that the work ban did not apply to certain workers such as family workers and outworkers, as well that many soon-to-be-brides who qualified for the marriage loan were already unemployed.\(^10\) Schulz attributes the wage freeze of 1936 to the sustained level of female employment out of economic necessity.\(^11\) Lastly, Hachtman states that the number of employed women constantly increased in every sector from 1933 to 1939.\(^12\) Related to male unemployment, the literature does not paint such a clear picture: Mason states that out of all unofficial measures to decrease male unemployment, the marriage loan was the most successful one.\(^13\) However, Eichborn argues that unemployed men often did not want to take the jobs previously done by women even though there were vacancies available.\(^14\)

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\(^6\) Eichborn, Dem Mann den Arbeitsplatz, pp. 60 f.


\(^8\) Eichborn, Dem Mann den Arbeitsplatz, p. 61; Sachße/Tennstedt, Wohlfahrtsstaat, p. 181.


\(^10\) D. Winkler, Frauenarbeit im "Dritten Reich", Hamburg 1977, pp. 48 f.

\(^11\) Schulz, Soziale Sicherung, p. 135.


\(^13\) Mason, Sozialpolitik, p. 132.

\(^14\) Eichborn, Dem Mann den Arbeitsplatz, p. 56.
The literature on the marriage loan so far is based on anecdotal case studies, as well as the evolution of figures, and the conclusions drawn are often insufficiently substantiated. In recent times, Humann has provided the most thorough discussion of the marriage loan, including calculations of the average loan sum granted over the years as well as the interaction between the government, the general population, and lobbyists in this matter. This paper aims at making three main contributions to the literature on marriage loans with respect to Germany’s labour market and policy developments of the 1930s as well as its demographic developments. Firstly, it critically evaluates the literature on Nazi Germany’s marriage loan and relevant aspects of employment and labour policy. Secondly, it provides a qualitative breakdown of the incentive structure of marriage loans for couples and especially women subject to class differences based on an extensive presentation of the marriage loan legislature and the literature on female employment of the 1920s and 1930s. This kind of background information helps with contextualizing certain figures that will be discussed next. Thirdly, it provides a simple regression model that highlights the relationships between marriages and loans, births and loan deductions, as well as male unemployment and marriage loans, respectively, which is complemented by an interrupted time series analysis for marriages and births on the country level. The results are subsequently interpreted critically in the context of the viewed period and the already existing literature on the topic.

The paper is structured as follows: section two breaks down the background, the policy design, and the incentives of the marriage loan. Section three presents the data analysis from the construction of the data set and the evolution of the variables of interest to the empirical approach and the discussion of the results. Section four concludes.

2 Marriage Loans: Background, Policy Design, and Incentives

2.1 Background and Goals

Motivated by the events of the 1920s and early 1930s as well as being in line with their ideology, the Nazi government followed multiple goals with the implementation of marriage loans, which are reflected in several key regulations.

15 See Humann, Arbeitsschlacht, pp. 118-135.
In short, according to a new law, newlyweds who fulfilled a list of eligibility criteria could apply for an interest-free marriage loan that was granted in the form of vouchers to be redeemed when purchasing furniture and other home goods. The first loans were paid in August 1933, while the last loans were granted in August 1944 and even beyond that in exceptional cases.

Germany recorded 6 million unemployed persons in the winter of 1931 to 1932 and once again in the next winter. After the Nazi takeover in January 1933, the new government prioritized the decrease of unemployment and boosting the economy as quickly as possible, with marriage loans being one of the numerous anti-crisis policies that were implemented to this end. As opposed to large-scale job creation schemes, marriage loans were aimed at decreasing unemployment in an indirect manner via two mechanisms. By granting the loan in the form of vouchers, this measure was supposed to boost private consumption, which would raise employment in crisis-ridden sectors such as manufacturing and other industries producing durable consumption goods. Additionally, being granted a marriage loan entailed that the future wife had been employed before marriage for at least six months within the period between 1st June 1931 and 31st May 1933 and that she would stop working upon her marriage. She was further banned from employment for the duration of the loan. However, the wife could seek employment for the duration of the loan if her husband did not obtain at least 125 RM per month. These rules were supposed to increase employment opportunities for unemployed men specifically. Note that couples in which the future wife had never been formally employed before were excluded from receiving a marriage loan, indicating that the government’s intent was to vacate positions that were previously filled. It additionally stands to reason that women employed in the household or in the family business were exempt from qualifying for the loan and could therefore continue their paid occupations after mar-

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16 Gesetz zur Verminderung der Arbeitslosigkeit v. 01.06.1933, in: Reichsgesetzblatt (RGBl.) I, pp. 326-329.
17 Eichborn, Dem Mann den Arbeitsplatz, p. 63.
19 Ibid, pp. 104 f.
21 This sum is comparable to the monthly wage of a skilled married male industrial worker with two children, see Humann, Arbeitsschlacht, p. 298.
23 Spoerer/Streb, Wirtschaftsgeschichte, pp. 104 ff.
riage,\textsuperscript{24} since they did jobs men were not interested in.\textsuperscript{25} The belief that double-income families should ideally not exist originated during the Weimar Republic, as outlined by Bajohr. At the time of the First World War, women started working in areas of employment that were previously dominated by men and largely remained employed in these industries after the war. Starting in 1925, overall unemployment began to increase, yet the rate of unemployment among female union members was consistently lower than that of male union members during the Great Depression. The contemporary debate was dominated by the notion that one of the causes for high male unemployment was working women because they had an advantage on the labour market due to lower wages, so that they were favoured over men by employers.\textsuperscript{26} The two-earner household was deemed immoral and “co-responsible for the distress of the unemployed”.\textsuperscript{27} This narrative remained at the centre of the unemployment debate of the early and mid-1930s, while the Nazis’ misogynist ideology further legitimized the displacement of women from the labour force.\textsuperscript{28}

Hitler declared raising the birth rate in accordance with his own ideology to be a priority. He believed that purebred Aryans were threatened with extinction, which, in his view, could be stopped by encouraging racially valuable couples to procreate.\textsuperscript{29} Additionally, offering incentives to have many children was in line with the “motherhood cult”\textsuperscript{30} that was established through pronatalist propaganda. Increasing so-called racially valuable births were planned to be achieved by first limiting the pool of applications by imposing several eligibility rules: the applying couples were required to be free of hereditary psychological or physical diseases and fertility problems. Beyond that, the rules also included less tangible criteria: the couple’s political views had to match the Nazi ideology and the newlyweds’ previous history and reputation needed to point towards them being able to meet their repayment obligation. The couples who were consid-

\textsuperscript{24} Gesetz zur Verminderung der Arbeitslosigkeit v. 01.06.1933, in: RGBl. I, pp. 326-329.
\textsuperscript{25} Eichborn, Dem Mann den Arbeitsplatz, p. 56.
\textsuperscript{26} Bajohr, Die Hälfte der Fabrik, pp. 168 ff.; One important reason for this development was that women were more likely to work in industries less affected by the crisis; see Bajohr, Die Hälfte der Fabrik, pp. 168-188 for more details, as well as information on statistical issues that mask the severity of female unemployment at the time.
\textsuperscript{27} K. Strölin, Der Kampf gegen Arbeitslosigkeit in der Stadt Stuttgart, Stuttgart 1936, p. 61; cited by Humann, Arbeitsschlacht, p. 175.
\textsuperscript{28} Grunberger, Third Reich, pp. 322 ff.
\textsuperscript{30} Grunberger, Third Reich, p. 301.
ered to fulfil all criteria and were granted a marriage loan, could receive a 25 percent credit deduction of the original loan sum for each living newborn upon presentation of the birth certificate, and they could pause loan repayments for twelve months after the birth. In theory, this would enable them to pay off their loan with children entirely.

2.2 Loan Sum, Repayment and Financing

Based on the initial legislation, couples could receive an interest-free loan of up to 1,000 RM, which, as of 1934, was comparable to the wage of a skilled married male industrial worker with two children for eight months. It was planned that the costs for the marriage loans would be financed by an income-based tax, the so-called *Ehestandshilfe*, which was paid, with a few exceptions, by all single people. Yet, it is estimated that its revenue only covered around 20 percent of the total sum of granted marriage loans as of 1934. The exact determination of the loan sum was based on a needs-tested examination conducted by the local authorities. Although this rule suggests a fair examination, this was often not true, with many instances of unjust treatment towards couples with low incomes or unemployed husbands. It was argued that these couples were not expected to have the means to invest in their children sufficiently, and the authorities also feared that the wife would have to continue working to contribute to household income in these cases, which was not in line with the intended goal of freeing up jobs for unemployed men. Overall, newlyweds usually received loans of less than 1,000 RM: While the average loan sum was 822 RM in 1933, it fell to 431 RM in 1934 and amounted to around 630 to 730 RM in the years thereafter. The government’s financial limitations also played a role in temporary shortages of the granted loan sums. For example, the maximum loan sum was decreased to 800 RM already in December 1933. Two months later in February 1934, an excep-

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33 Humann, Arbeitsschlacht, p. 298.
34 Gesetz zur Verminderung der Arbeitslosigkeit v. 01.06.1933, in: RGBl. I, pp. 326-329.
37 Humann, Arbeitsschlacht, pp. 126 ff.
38 Ibid, p. 119.
tionally high number of applications paired with insufficient funding led the authorities to interrupt payments until the end of March 1934, and, for the time being, to grant loans of a maximum of 500 RM.39 These developments could be driven by the fact that in 1933, couples who got married between 1st June 1932 and 3rd June 1933 were also eligible for a marriage loan, as well as couples in which the wife was employed in the period between June 1st 1928 and May 31st 193340 if they applied until the end of the year.41 These regulations initially made the marriage loan more accessible and likely contributed to the disproportionate demand for marriage loans and early credit deductions for live births in the first half year after the introduction. The loan was supposed to be repaid at a monthly rate of one percent of the total loan sum,42 but couples received, as stated previously, a 25 percent loan deduction for every living newborn.43

2.3 Main Legislative Changes

Starting 1935, the government introduced changes to the marriage loan legislation. Instead of six months, the future wife now had to attest at least nine months of employment prior to her marriage for the couple to be eligible, decreasing the pool of eligible couples overall.44

Another legislative change occurred in 1937, which entailed the lifting of the work ban for wives. According to article I of the new law, married women who had received a marriage loan were allowed to work, but the monthly loan repayment rate was raised from one to three percent if she worked more than half of the working days in a given month, but otherwise remained at one percent.45 This legislative change matches the situation of the labour market at the time: despite the economy being close to officially reaching full employment in

45 Drittes Gesetz zur Änderung des Gesetzes über Förderung der Eheschließungen v. 03.11.1937, in: RGBl. I, pp. 1158 f.
1935/36, it was faced with a labour shortage as the authorities made a focused effort to accelerate military build-up, which the Nazis tried to compensate for with (married) female labour.

2.4 Who Applied for a Marriage Loan?

To understand how the marriage loan scheme could have affected couples’ decisions, it is crucial to understand what kind of incentives the policy created and for whom it was advantageous to apply for a loan.

Although the loan would have to be repaid over the following years, it offered newlyweds the possibility to consume durable (and likely pricy) goods at the time of household formation. Compared to a couple that did not apply for a marriage loan, couples who received it were financially better off, at least temporarily, even if they did not have any children. Credit deductions for live births can be understood as one-time monetary rewards for each child, which decreased the cost of children and thus increase fertility. While this regulation led to a decrease in the outstanding loan amount and not to a cash transfer per se, it can still be understood as financial assistance for children, as the vouchers gave the (future) parents the possibility to secure a certain standard of living for their offspring without having to pay for at least a certain share of the cost once children were born. For the average young family of the 1930s with a stable, sufficient income, it was generally advantageous to receive the loan.

It must be noted, though, that fertility decisions and women’s employment (decisions) probably varied based on their social class (and their husband’s), and consequently the extent to which young families of different socio-economic backgrounds could or wanted to apply for a marriage loan. Married women from lower classes who assisted the family business and who worked either in agriculture or as outworkers and factory workers mostly did so out of financial necessity. As of 1925, this was the case for 80 percent of married working women. It is unlikely that a large portion of these women would have given up their market work before marriage for a marriage loan application under the policy regime before 1937. While it was theoretically possible to receive a loan if the

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46 Spoerer/Streb, Wirtschaftsgeschichte, p. 105.
47 Humann, Arbeitsschlacht, p. 123.
49 Winkler, Frauenarbeit, p. 25.
husband was unemployed or earned very little, those applications were often
denied. For example, a young woman from a working-class family might be
employed in manufacturing and continue working there after her marriage to a
man from the same social class. Middle- and upper-class women usually did not
work, especially after marriage. The few women from this group who did work
at least for a short period of time were the most likely to have applied for a loan
upon marriage. For example, a young unmarried woman from the lower middle
class working as commercial clerk might secure a match with a bachelor slightly
above her rank, such as an official, and give up her occupation thereafter. To
sum up, a couple who would apply for a marriage loan likely had the following
characteristics: the soon-to-be wife was willing to give up her occupation or had
already done so because the couple was not economically depending on a sec-
ond income, and the couple either believed that the monetary benefit of having
more children to offset a sizeable sum of the loan was higher than the cost of
additional children or the couple valued a relatively large sum of money up-
front, could afford to repay a marriage loan in full over the next years and did
don not change its fertility choices because of it. This indicates that contrary to
propaganda, the marriage loan likely attracted and benefitted only a small por-
tion of newlyweds.

The lifted work ban of 1937 might have increased the number of applica-
tions and also slightly changed the incentives to work for those who previously
received the loan. Because the monthly loan repayment rate did not increase if the
wife worked up to a certain threshold, which was comparable to part-time work,
this legislative change could be interpreted as an indirect positive incentive for
married women to re-enter the labour force. This is in line with the historical de-
velopments of the labour market at the time. However, the tripling of the monthly
loan repayment rate in case the wife started working full-time again could have
posed a negative incentive to work more than part-time because the income in-
crease would have been disproportionately low. Yet, an increase from one to three
percent, when taking the wife’s earnings into account, might have translated to
less than a tripling of the owed amount to repay the loan each month relative to
total family income. Due to factors such as energy-consuming tasks in home
production and child rearing and, possibly as a result, disproportionately low
prospective wages, as well as traditional gender roles, (re-)entering the labour
force was likely an option for wealthier women from politically progressive households who could afford to outsource household tasks and childcare.\footnote{Being highly educated was not necessarily a contributing factor to labor force attachment, as many women were banned from working as physicians, (assistant) judges, civil servants, (university) teachers etc., see \textit{Grunberger}, Third Reich, p. 331.}

## 3 Data Analysis

### 3.1 Data Sources and Construction of the Data Set

The observed period for the data analysis is set to 1925 to 1939. This time horizon was chosen for several reasons: Firstly, it covers five to eight years before and after the introduction of marriage loans, making it possible to, in most cases, depict the short and medium-run evolution of selected variables in comparison to their development a few years prior to the introduction. Secondly, this period from 1925 to 1939 includes data from three censuses, which makes statements about female employment feasible. Lastly, the chosen time period covers the peaceful years of Nazi Germany and therefore stops in 1939 with the inception of the Second World War.

I draw on the issues of 1927-1939 and 1941/42 of the \textit{Statistische Jahrbuch für das Deutsche Reich (StatJbDR)}, a yearly-issued periodical by the \textit{Statistische Reichsamt} that contains extensive historical data from the time of the Weimar Republic and Nazi Germany, to create a data set based on the available state-level data on population, marriages, births, marriage loans and male unemployment. The data set was further complemented by quarterly data on marriages and live births on the country level from the first quarter of 1925 to the last quarter of 1939, which were collected from various issues of the periodical \textit{Wirtschaft und Statistik}. Lastly, the data set also contains workforce data from special editions of \textit{Wirtschaft und Statistik}, also issued by the \textit{Statistische Reichsamt}, that contain census data for the years 1925, 1933 and 1939. Major territorial changes over the course of the chosen time period have been omitted whenever possible, such as the reintegration of Saarland in 1935 as well as the annexation of other neighbouring territories starting 1938. A list of all digitalised variables can be found in Table 1.

The construction of a comprehensive state-level data set based on these historical data came with several limitations. Because marriage loan data is not given for all states individually, the regions as established in the data set and as
depicted in the figures to follow do not necessarily correspond to the existing states in the 1920s and 1930s. Territorial changes during the viewed period add to this issue, as they led to the merging of states. The most important alterations made are the following: Firstly, the region Prussia in this data set contains data for the states Anhalt, Lippe, Lübeck, Schaumburg-Lippe and Waldeck for two reasons. Firstly, marriage loan data for Anhalt, Lippe and Schaumburg-Lippe is only given as part of the data for Prussia in the statistics. This means that these smaller states have to be considered as part of Prussia for all following calculations for consistency reasons. Secondly, data from some other states has been added to Prussian data due to territorial changes. For instance, Waldeck was integrated into Prussia in 1929, and Lübeck was integrated into Prussia in 1937. With around 40 million residents according to the 1933 census, Prussia alone made up around 60 percent of the population of the German Reich (roughly 65 million residents), thus an addition of 700,000 residents is assumed to make only marginal differences. It is also important to mention that data for the region of Mecklenburg, which was established as a single state as of 1934, was created by summing the data for the two separate states Mecklenburg-Schwerin and Mecklenburg-Strelitz that existed until 1935. More limitations originate from the unavailability of certain data, such as the data for male unemployment, which is only available from 1932 to 1937.

3.2 Variables of Interest and their Evolution

Based on the historical data, the following variables have been calculated for the analysis of marriage loans. The crude marriage rate, $cmr$, indicates how many marriages occurred per 1000 residents, $trespop \times 1000$, each year. The evolution of the crude marriage rate is depicted in Figure 1. After a low of around eight marriages per 1,000 residents in the recovery years 1925/1926, it increased in all regions of the German Reich and started declining around the start of the

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Great Depression. Then, it reached another low in the crisis year 1932 following the German twin crisis.\textsuperscript{58} In the year marriage loans were introduced, the crude marriage rate increased to values ranging from eight to twelve marriages per 1,000 residents. Most regions reached their high in 1934, whereupon the marriage rate assumed a downward trend until 1937, where it settled at eight to eleven marriages per 1,000 residents. In the last two years of the viewed period, we again see an increase in the marriage rate.

The crude birth rate $cbr$ is comprised of all births, $livebirth + stillbirth$, each year per 1,000 residents ($trespop \times 1000$). Because a couple cannot know if their child will be born alive or dead, considering all births instead of live births only is more reasonable in this case, as the decision to have a child does not depend on the outcome. The evolution of the crude birth rate is depicted in Figure 2. It follows a downward trend throughout the entire period between 1925 and 1933 due to couples increasingly practicing family limitation, but also because unmarried men were discriminated against in the labour market, rendering them less desirable for marriage.\textsuperscript{59} After the introduction of marriage loans, most regions follow an upward trend, reaching around the same level as in 1925 – roughly 15 to 25 births per 1,000 residents.

The male unemployment rate, $munemp$, is given by the yearly average share of male unemployment benefit beneficiaries, $avrg.munempinsur$, and crisis relief ($Krisenfürsorge$) beneficiaries, $avrg.mrelief$, of all men in the workforce, $mworkingpop$. Monthly data for male unemployment insurance and crisis relief beneficiaries have been used to calculate the yearly average. Male workforce data was not updated yearly, but with each census (1925, 1933 and 1939). The values of the variables $y = \{int\_two\_workingpop, int\_mworkingpop, int\_fworkingpop\}$ for the years in between were calculated using linear interpolation between the census years 1925 and 1933 as well as 1933 and 1939, respectively. This definition of the unemployment rate is not an official one in any way but was created based on the available state-level data on male unemployment. This measure will likely result in values way below the number of unemployed men in each region due to the unemployment insurance system having been increasingly challenged by an outstanding number of people who lost their jobs and needed benefits starting during the Great Depression. For this reason, the unemployed people who did not receive unemployment insurance benefits were passed on to

\textsuperscript{58} The German economy was faced with both an impaired banking sector and currency issues at the same time, see \textit{I. Schnabel}, The German Twin Crisis of 1931, in: The Journal of Economic History 3, 2004, pp. 822-871.

\textsuperscript{59} \textit{Grunberger}, Third Reich, pp. 298 f.
welfare institutions, such as the crisis relief. However, the data based on these two institutions do not cover the sizable number of men receiving help from district welfare associations (Bezirksfürsorgeverbände) in cases when neither unemployment insurance nor crisis relief could help, and around a sixth of all the registered unemployed people did not receive any benefits at all in 1932.\(^{60}\) Despite these limitations, it is beneficial for the following analysis that the evolution of the male unemployment rate as defined in this thesis roughly matches the evolution of country-level unemployment based on the number of men that were registered at regional employment offices as reported in official statistics.\(^{61}\) The evolution of the male unemployment rate as defined in this work is depicted in Figure 3. We see that it started at values ranging from five to almost 15 percent and then decreased steadily in all regions (except for Bavaria) and reached its minimum in 1937, with unemployment rates of almost zero to five percent. Yet, the overall decrease in male unemployment does not reflect the situation in each sector. For example, the construction sector benefitted greatly from the implemented measures and showed very low unemployment. In contrast, the export industry suffered due to the Nazi government’s efforts towards autarky.\(^{62}\)

To compare the marriage loan coverage in each region, I calculate the yearly ratio of granted marriage loans to marriages, \(nrmlm\). The values of the ratio of granted marriage loans to marriages range from 20 to 40 percent of all newlyweds in most regions, except for Oldenburg, where the ratio amounts to 50 to 70 percent (see Figure 4). These are unexpectedly low rates if one were to believe the contemporary propaganda,\(^ {63}\) but they seem more appropriate when considering the restrictive marriage loan eligibility rules.

Similarly, the ratio of credit deductions to live births (\(cdmllb\)) is also considered. The values of this ratio follow a clearer upward trend, with most regions starting at around 10 percent in 1934 and reaching 15 to 25 percent in 1939 (five percent at the lowest and 35 percent at the highest, see Figure 5). This percentage is relatively low because relative to all live births, the number of children born alive to parents receiving marriage loans was small. Considered in conjunction with the ratio of marriage loans to marriages, we see that on average, less than one child can be attributed to each financially assisted marriage. Figures from the year 1935 will be discussed to illustrate this. In Germany overall, 24 percent of all marrying couples received a marriage loan, but only 12

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\(^{60}\) Mason, Sozialpolitik, p. 90.

\(^{61}\) Humann, Arbeitsschlacht, p. 730.

\(^{62}\) Spoerer/Streb, Wirtschaftsgeschichte, p. 111.

\(^{63}\) Humann, Arbeitsschlacht, p. 133.
percent of live births were eligible for a credit deduction. Taking demographics into account provides more nuance here. When looking at the percentage of credit deductions based on the number of living first to fourth-born children with parents who were married in Germany in 1935, the figure increases only slightly. According to the statistics, around 95 percent of all births were in wedlock and roughly 84 percent of all children born to married couples were first to fourth-borns. Live births at the time made up around 97 percent of all births. Given these figures, we arrive at a revised ratio of credit deductions to all eligible live births of around 15. Additionally, not all marrying couples were newlyweds. Before their marriage in 1935, around 89 percent of men and 93 percent of women were single. Knowing this, the ratio of 24 marriage loans per 100 marriages drops slightly to 21. It is evident that the percentage of credit deductions relative to all eligible live births still lies under the percentage of marriage loans granted to newlyweds. Based on these figures and considering that each married couple had an average of 1.9 children in 1933, it can be concluded that more children were born to parents who did not receive a marriage loan than the other way around. This might already point towards a certain inefficacy of the policy, although it is unclear which portion of newlyweds was actually eligible for a marriage loan and which percentage of applications was denied. Given this kind of information, the conclusion might change.

3.3 Policy Evaluation: Empirical Approach

3.3.1 A Note on Optimal Research Design

Due to data availability and the issues with the existing data set as previously outlined, the chosen empirical approach, which will be presented next, should be preceded by some thoughts about optimal research design. The aim of the following analysis is to assess whether the introduction of the marriage loan had an impact on the evolution of marriages, births, and employment in Germany. The underlying question of each possible policy evaluation method is therefore the following: If there had been no marriage loan, would marriages, births and employment have developed differently from 1933 to 1939?

64 Statistisches Reichsamt, Statistisches Jahrbuch für das Deutsche Reich, Berlin 1937.
65 Sufficient demographic data for this kind of nuance is only given at the country level, thus leaving many unknowns about such details on the state level.
66 Eichborn, Dem Mann den Arbeitsplatz, p. 61.
Analysing the effects of the marriage loan would ideally require monthly data on marriages, births, employment for both couples who received a loan and those who didn’t, as well as monthly data on paid marriage loans and granted credit deductions. Such data is not available, neither in that frequency, for the entirety of the chosen period, nor for all variables of interest. Not having an adequate control group for the application of certain quasi-experimental approaches is another challenge.

From this, it follows that an approach for policy evaluation such as matching is not applicable. It would require micro data on the couples’ characteristics that cannot be found in statistical yearbooks. Regression discontinuity design requires clear eligibility rules for receiving a marriage loan in order to exploit the similarities between a group of couples who are barely eligible and another group that is marginally outside a certain threshold. Such a clear rule was indeed given in the marriage loan legislation: Couples could only apply if the wife had been employed for at least six months prior to marriage. It is likely that women who had been employed for only five months and couldn’t apply for a loan were very similar to those who had been employed for six months. In theory, this eligibility rule could be used to assess the effect of the policy because it facilitates the definition of a control group, but in practice, such detailed data is not available.

If there is no control group within Germany, the employment of the synthetic controls method might come in handy. Potential control units in this case could be regions at Germany’s borders that did not have the marriage loan policy, but that were developing in a similar way pre-policy. Characteristics that affect marriages, births and employment are, for example, standard of living, degree of industrialization, infant mortality, abortion laws and access to contraceptives, unemployment levels, structure of employment for men and women, and estimated national and international demand for goods. If the synthetic control, which is a certain weighted average of the chosen characteristics, matches Germany on these characteristics pre-treatment, it could be an adequate tool to observe a counterfactual world post-policy and subsequently the effect of the policy post-treatment. However, the Great Depression affected Germany’s economy and those of the neighbouring countries differently, with recovery happening in differing timelines. With other country-specific differences, it is difficult to find adequate control units. The empirical analysis is thus clearly limited by data availability, yet the available data offers some possibilities for statistical analysis.
3.3.2 Correlation Analysis

The first approach used to assess the possible implications of marriage loans on marriages, births, and employment follow the general intuition that on average, if marriage loans had an effect, there should be a difference between the crude marriage rate, the crude birth rate and the male unemployment rate after their implementation compared to before. Verifying if the difference in the rates after the marriage loan introduction is more pronounced in the regions where more marriage loans were granted or more credit deductions for children occurred by analysing simple unconditional correlations might already allow for a general direction of the respective total effect and is therefore a good starting point.

To this end, the viewed period from 1925 to 1939 was divided into two sub-periods: the pre-marriage loan period from 1925 to 1932 (or rather just 1932 in the case of male unemployment) and the post-marriage loan period from 1933 to 1939 (or from 1933 to 1937, respectively). Additionally, the short run after the policy implementation was also considered, which is defined as 1933 to 1935. Following the next equation, the mean crude marriage rate, mean crude birth rate and mean male unemployment rate were calculated for each region $i$ in each of the sub-periods to obtain a percent difference after the implementation of marriage loans compared to before:

$$\frac{\text{avrg. post}_i - \text{avrg. pre}_i}{\text{avrg. pre}_i} \times 100$$

Additionally, the mean ratio of granted marriage loans to marriages and the mean ratio of credit deductions to live births were calculated both for the entire post-policy period and for the short run. Based on these calculations using standardised variables, three unconditional correlations will be explored: the correlation between the percent difference in the mean crude marriage rate and the mean ratio of granted marriage loans to marriages, the correlations between the percent difference in the mean crude birth rate and the mean ratio of credit deductions to live births, and the correlation between the percent difference in the mean male unemployment rate and the mean ratio of granted marriage loans to marriages.

Generally, there are numerous factors that might have influenced the variables of interest over time, and the explored relationships are not necessarily linear. Additionally, this analysis does not consider the demographics of the various states, such as the population of marriageable age and economic development. Besides the created incentives to apply, there might also be other reasons why the rate of granted marriage loans is low in a certain state, such as
financial shortages (see Section 2.2). State-level data is primarily used here in order to have as many data points as possible for the calculation of correlations. The second part of the empirical analysis, which takes a closer look at the evolution of marriages and births in Germany, aims at alleviating some of these methodological issues.

### 3.3.3 Interrupted Time Series Analysis

Because there are records of quarterly marriages and live births available from 1925 to 1939, an interrupted time series (ITS) analysis has been employed to further assess whether the marriage loan policy had an impact on the evolution of marriages and live births\(^{67}\) until 1939. ITS analysis entails the comparison of the time after a policy intervention with the time before across a single population. Quarterly data already offers a few advantages to yearly data for this analysis. Firstly, the number of observations is higher, improving the empirical analysis overall. Secondly, it also allows for a more exact location of the policy introduction in the time series (interruption in the following model begins in the third quarter of 1933, one month after the introduction of the marriage loan), which is not possible with yearly data, where it had to be assumed that 1933 is a post-policy year overall.

I employ a Type II Sum Squares, ANCOVA (analysis of covariance), Lagged Dependent Variable ITS model following English (2019). This framework is specifically suited to shorter sample sizes (in this case, \(N = 60\)) and rests on the central approach of testing whether interruptions create unequal means and variance in a dependent time series rather than on an attempt to clarify whether an exogenous interruption to a time series creates unequal slopes pre- and post-interruption. Further, this model is designed to account for autocorrelation by including a lagged dependent variable. In this case, the null hypothesis is that there is no significant variation between the pre- and post-marriage loan periods (\(\alpha < 0.05\)), both regarding the time series of quarterly marriages and quarterly live births on the country level, excluding territorial expansions preceding the Second World War.

Overall, it is expected that this approach yields robust and reliable results. It must be noted, though, that ITS analysis alone cannot account for other influen-

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\(^{67}\) Stillbirths were not reported quarterly for the entirety of the period of interest. According to yearly data, stillbirths consistently accounted for about 3 percent of all births from 1925 to 1939 (see Statistisches Reichsamt, Statistisches Jahrbuch für das Deutsche Reich, various issues).
tial events impacting the evolution of a certain variable over time, as they do not belong to the underlying trend of the analysed time series. An adequate synthetic control would be enough in this case, yet as outlined in Section 3.3.1, this is a difficult endeavour. The following analysis will therefore be limited in terms of causality since there is no possibility to control for other influential events.

3.4 Results

3.4.1 Marriages

The effect of marriage loans on marriage is expected to be around zero. While theoretically the possibility of receiving a sizeable loan for getting married could be an incentive to do so, marriage loans are not expected to have any substantial impact on marriages in practice. Firstly, marriage was the predominant living arrangement for adults at the time, meaning that most adults would get married sooner or later in their life, thus leaving limited room for a policy to increase marriages above a certain threshold. For example, only eleven percent of women aged 50 living in the German Reich were single in 1933, while the rest was married at least at some point in their life. Moreover, the eligibility rules were so strict that marrying primarily to receive the loan would be, at least in most cases, rather unlikely. As previously outlined, the percentage of couples who were likely to apply was theoretically quite low and the application came with risks, too: Following the required medical examination, applicants, if deemed *racially invaluable*, were at risk to be banned from marriage at best or to be forcibly sterilized at worst.

The correlation between the percentage difference in the mean crude marriage rate and the mean ratio of granted marriage loans to marriages is -0.1415, which is considered a small negative correlation and depicted in Figure 6. As hypothesized, the mean crude marriage rate is not particularly higher compared to the time before the policy introduction in the regions where most marriage loans were paid. Removing the outlier Oldenburg from the calculation generally does not change any result substantially. In this case, the unconditional correlation without Oldenburg is 0.0699. Still, marriage loans were, as previously described, praised for their efficacy in increasing marriages in contemporary re-

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69 *Eichborn*, Dem Mann den Arbeitsplatz, p. 64.
porting. When looking at the first years after the policy implementation, we see a correlation of almost zero (-0.0278) between the percentage difference in the mean crude marriage rate in the years 1933 and 1935 compared to 1925 to 1932 and the mean ratio of paid marriage loans to marriages between 1933 and 1935 (see Figure 7), but a slightly positive correlation of 0.2708 when leaving out the outlier. These results are statistically insignificant, though. However, the ITS analysis yields statistically significant variations between the pre- and post-policy time periods and thus rejects the null hypothesis at a significance level of five percent both for marriages in Germany overall and in the individual states. This means that there is a significant difference between adjusted mean levels of total marriages over the two periods of time.

Indeed, looking at the evolution of the crude marriage rate, there is no denying that it increased sharply after 1932. Two reasons stand out regarding the increase in marriages at the time of the policy introduction. The marriage loan can be attributed to have had a certain effect on the timing of marriage. It might be that granting marriage loans to newlyweds led to non-married couples, especially those who had already conceived, to marry (earlier). In fact, such an observation was made by statisticians in the 1930s as well, which was generally viewed neutrally or even positively.\textsuperscript{71} With the available data, there is no way to control for such behaviour. Secondly, marriages might generally increase for a certain period of time due to a baby boomer generation reaching marriageable age. For instance, the average age at first marriage was around 25 for women and about 27 for men in 1933.\textsuperscript{72} This means that if there were unusually many births in 1906 to 1914, this might be reflected in a higher number of marriages from 1933 to 1939. However, starting with the turn of the century, birth rates were steadily declining in Germany (from around 37 in 1891 to 14 in 1918) and increased only slightly after the First World War to around 26 in 1921, then resuming the downward trend. Thirdly and most importantly, closely related to the observation made by other authors regarding a certain catch-up effect after the Great Depression,\textsuperscript{73} marriages decrease in times of weaker economic activity and vice versa. This has already been studied for the US over the course of the 20\textsuperscript{th} century.\textsuperscript{74} Moreover, newer evidence using Spanish data suggests that mar-

\textsuperscript{71} Statistisches Reichsamt, Wirtschaft und Statistik, Berlin 1935, p. 230.
\textsuperscript{72} Statistisches Reichsamt, Statistisches Jahrbuch für das Deutsche Reich, Berlin 1935, p. 39; own calculation.
\textsuperscript{73} See introduction.
Marriages are delayed when unemployment rises,\textsuperscript{75} which has been confirmed using US panel data showing firstly that increasing male unemployment is tied to a delay in marriage formation,\textsuperscript{76} and secondly by demonstrating that marriage rates decrease with increasing unemployment.\textsuperscript{77} In the case at hand, the Weimar Republic was characterized by a gradual economic demise starting in late 1929 with the US Wall Street crash.\textsuperscript{78} During these years, the crude marriage rate was on a downward trend. Corporate investments started increasing again in fall 1932,\textsuperscript{79} and 1933 was marked by a seemingly recovering economy with decreasing unemployment rates (see Figure 3), and a large share of the population may have become more optimistic.\textsuperscript{80} In conclusion, based on the additional evidence we have today, this development could have fueled the increase in marriages.

With this relationship in mind, real GDP per capita as calculated by Ritschl and Spoerer (1997) has been added as a covariate to the ITS analysis for marriages on the country level. To obtain quarterly data, the yearly values have been divided by four, respectively. The values between each two years have been determined using linear interpolation. Column 1 of Table 2 shows the results of the revised model. The variation between the time periods remains statistically significant. As previously noted, though, ITS analysis cannot account for other historical events that might have altered the evolution of marriages. Potentially confounding events were the implementation of certain marriage policies that were introduced in anticipation and during the first months of the Second World War. Such measures included so-called war weddings, which allowed for an accelerated marriage process thanks to the elimination of certain legal ob-


\textsuperscript{78} Spoerer/Streb, Wirtschaftsgeschichte, pp. 83 f.

\textsuperscript{79} Schanetzky, Kanonen statt Butter, p. 60.

\textsuperscript{80} Recent findings suggest that the economic recovery fueled by military build-up in the 1930s did not translate to higher wages and improved living standards relative to the 1920s, but propaganda depicting Germany as an affluent society and promises about increased consumption opportunities reinforced the idea that Germany was now better off economically to the general public (see C. Torp, Wachstum, Sicherheit, Moral. Politische Legitimationen des Konsums im 20. Jahrhundert, Göttingen 2012, pp. 59-91).
stacles like the presentation of an Aryan certificate. Brides could also get married without the groom present, especially if they were already pregnant. These measures were implemented to counteract the inevitable population decline that was to follow the war.\textsuperscript{81} Indeed, as depicted in Figure 8, marriages increased sharply in the last quarter of 1939, which could be driving the significant difference between the two time periods. However, the difference between the two periods remains significant even after removing the fourth quarter of 1939, where marriages soared. Further factors might have played a role, however, leading to the conclusion that claims about a causal effect (and its size) of the marriage loan on the evolution of marriages cannot be made.

3.4.2 Births

In line with the incentives to bear children as previously described, marriage loans are expected to have a positive effect on births. The correlation between the percentage difference in the mean crude birth rate and the mean rate of granted deductions is indeed relatively high and positive with a correlation of 0.4515 (see Figure 9). This means that the percentage change in the mean crude birth rate after the policy introduction was particularly high in regions where, on average, most credit deductions occurred. Removing the outlier Oldenburg leads to a small decrease of the unconditional correlation to 0.4094. Moreover, a similar positive relationship, albeit weaker, is true for the short run (see Figure 10). All results are statistically insignificant.

While it is unclear how large the impact of pronatal propaganda was on the young women of the 1930s and to which extent they leaned into not only the portrayed role of the ideal woman as mother and home keeper,\textsuperscript{82} but also into the notion that having many children was not a private matter, but a duty to the nation\textsuperscript{83} as a result, there are more concrete factors might have also contributed to the increase of the crude birth rate. Firstly, already in 1933, contraceptives became less readily available due to distribution restrictions to chemists, birth control centres were gradually closed and those who offered resources for and allegedly performed abortions were increasingly prosecuted.\textsuperscript{84} If these develop-

\textsuperscript{82} Grunberger, Third Reich, p. 321.
\textsuperscript{83} Lilienthal, Lebensborn, p. 44.
\textsuperscript{84} Stephenson, Women, pp. 61 f.
ments were particularly prevalent in the regions where the mean rate of credit deductions was higher, they might be in part responsible for the depicted result. It has been argued before that this aspect contributed more to the increase in births than the marriage loan scheme.\textsuperscript{85} But while reducing abortions was seemingly important to the Nazis, abortions were not deemed an offence if they were performed based on eugenics.\textsuperscript{86} This would create an opposing effect to the increase in births. Most importantly, though, the positive correlation between the difference in the mean crude birth rate and the difference in the mean rate of credit deductions could be driven by reverse causality: because the crude birth rate increased almost universally, parents overall also had more opportunities to file credit deductions. This is highly problematic and threatens the validity of the results.

The ITS analysis results for live births in 1000 (time series depicted in Figure 11) are presented in column 2 of Table 2. The model initially yields statistically significant variations between the pre- and post-policy time periods and thus rejects the null hypothesis at a significance level of five percent both for live births. This means that there is a significant difference between adjusted mean levels of total live births over the two periods of time. It must be noted, however, that according to Sobotka et al. (2011), fertility tends to fluctuate in line with the business cycle similarly to marriage rates. Indeed, when adding real GDP per capita as a covariate, the statistically significant variation between the time before and after the marriage loan introduction disappears.

### 3.4.3 Male Unemployment

Marriage loans are expected to have a negative impact on male unemployment. With a substantial number of women leaving their jobs upon marriage, vacancies were supposed to be filled by unemployed men, thus decreasing the male unemployment rate, and increasingly so in the regions where more marriage loans were granted. Although no causal effect can be claimed, there is indeed a small negative correlation of -0.1667 between the percentage change in the mean male unemployment rate and the mean rate of marriage loans (see Figure 12). This means that on average, the decrease in male unemployment after the introduction of marriage loans was slightly more pronounced in the regions where more

\textsuperscript{85} Eichborn, Dem Mann den Arbeitsplatz, pp. 60 f.
\textsuperscript{86} Stephenson, Women, p. 62.
marriage loans were granted. With the removal of the outlier Oldenburg from the calculation, the correlation leans moderately negative with -0.2711.

We see that the relationship between granted marriage loans and male unemployment is very weak at best. It is also statistically insignificant. In the literature, it is viewed from two contrasting perspectives: Mason states that of all indirect measures aimed at decreasing male unemployment, marriage loans were the most effective policy. This is unlikely, however. Until 1935, around half a million newlyweds received a marriage loan, meaning that, at first glance, around half a million women were pushed out of the labour market, creating around 500,000 vacancies at best. But a substantial portion of these women, as previously characterized, had probably only been employed for a short period of time before their marriage and planned to drop out of the labour force anyway because they were not financially required to work, so the number of additional vacancies induced by the policy was probably lower than that. It was also common that some women continued to work even though they were not allowed to. In addition, Eichborn states that the vacancies created when women left their jobs upon receiving a marriage loan were not necessarily filled by unemployed men due to the tasks typically performed by women being mostly unknown to men and the low wages paid. Indeed, Winkler describes how women during the Nazi regime were doing assisting and executing jobs that were traditionally female-dominated or taken over by women from men, while men increasingly moved up to leadership positions or out of the industrial sector entirely. It is only plausible that given such a development, an offer for a low-wage, low-skilled job was uninteresting from a male's perspective.

Additionally, there were numerous policies in place that contributed to the decrease in male unemployment that were probably at least as effective or more effective. Firstly, the Nazis implemented several measures to boost consumption (with marriage loans being in part one of them), which targeted male unemployment indirectly. For instance, all new cars were exempt from the vehicle tax starting April 1933, which led to an increased demand for cars accompanied by a tripling of employment from 17,000 to 51,000 employed persons in the automotive industry within that year. Job creation schemes as direct measures against unemployment were widespread, too. The government’s investments, too, bene-

87 Kukartz, Statistik, p. 213.
88 Mason, Sozialpolitik, p. 132.
89 Humann, Arbeitsschlacht, pp. 122 f.
90 Eichborn, Dem Mann den Arbeitsplatz, p. 56.
91 Winkler, Frauenarbeit, p. 65.
fitted public and residential construction, transport development as well as agriculture, all of which led to new job opportunities. Moreover, the government aimed to decrease unemployment by encouraging firms’ investment with tax exemptions and reductions starting 1933. Additionally, a portion of the decreased number of male unemployment benefits and crisis relief beneficiaries can be ascribed to job creation schemes: during the first years of the Nazi regime specifically, around 600,000 people were employed in public relief work, and unemployment insurance beneficiaries ran into the danger of being denied financial help if they refused to work in whatever job they were appointed to. The overall decrease in unemployment could have coincided with higher ratios of granted marriage loans to marriages in certain regions. Independently of these measures, though, several authors such as Hachtmann and Schanetzky argue that the new unemployment calculating methods that were used starting 1933 were crucial to the fast decrease in official unemployment. Unreliable statistics on true unemployment might therefore be the primary reason for the slight negative correlation between marriage loans paid and male unemployment. Moreover, extensive monthly country-level unemployment data does not differentiate between gender, rendering any further time series analysis unforthcoming.

3.4.4 A Note on Female Employment

The sparse data on female employment unfortunately only allow for limited statements in relation to marriage loans. In 1925, the female labour force participation rate varied considerably across regions, with rates as high as 50 percent in Württemberg and as little as under 30 percent in Bremen and Braunschweig. The average in the entire German Reich was at around 35 percent, which only slightly decreased in 1933 and then increased by a few percentage points in 1939. Overall, the effect of marriage loans on female employment is not expected to be substantial. Although around 800,000 women were pushed out of the labour force between 1933 and 1937 due to the loan, the female labour force

93 *Stelzner*, Arbeitsbeschaffung, pp. 100-103.
94 *Mason*, Sozialpolitik, p. 127.
95 *Hachtmann*, Labour Policy, p. 70; *Schanetzky*, Kanonen statt Butter, p. 62.
97 *Grunberger*, Third Reich, p. 324.
participation rate in 1939 roughly returned to its 1933 level, and the female share of the labour force surmounted that of 1933 in nearly every sector by 1939. The work ban for married women in the process of repaying the marriage loan was lifted in 1937, which was motivated by an increased demand for female labour approaching World War II. At this time, even women who never worked before or women who had paused their employment for several years were increasing-ly (re-)trained to work in traditionally male-dominated jobs in the industrial sector due to persistent labour shortage. Given female workers’ indispensability in many branches, it can be concluded that the work ban for married women – although it certainly fitted into the narrative of the time – was more of a means to an end and, as previously explained, became negligible once production in preparation for the Second World War became a priority.

4 Conclusion

This study provides insights into a key German policy of the 1930s: the marriage loan. This measure served as one of many different policies to fulfil the Nazi agenda, which is not only reflected in the policy design, but also in the legislative changes that occurred over the years, that vividly illustrate contemporary political and economic developments. Unlike the way the marriage loan was touted regarding its efficacy in increasing the birth rate especially by the Nazis, this paper paints a different picture.

A deep dive into the legislation reveals that, only a small portion of newly-weds could potentially have applied for a marriage loan due to strict eligibility rules and, in practice, due to the requirement of being financially stable and well-off on one income only.

The empirical analysis points towards a certain difference in the evolution of marriages from 1933 to 1939 compared to the period between 1925 to 1932. While the presented correlations between the difference of the mean crude marriage rate post-policy and the mean ratio of marriage loans to marriages could be driven by the positive economic development, the ITS analysis yields a statistically significant difference of marriages post policy introduction. It cannot be fully attributed to the introduction of the marriage loan, though, as other policies probably had an effect too. While the literature so far only attributes the mar-

98 Hachtmann, Labour Policy, p. 73.
99 Winkler, Frauenarbeit, p. 59.
Marriage loan a certain deadweight effect on marriages, this result indicates that marriages evolved differently between 1933 until 1939 than between 1925 and 1932 when taking the economic development into account. However, the extent to which the marriage loan directly caused this difference is unclear.

It is further unclear how the marriage loan scheme led to an increase in the crude birth rate in relation to other factors and how much of the positive relationship between credit deductions and births can be attributed to increasing birth-driving credit deductions. Moreover, the positive evolution of births after the marriage loan introduction might largely be explained by the positive economic development compared to the crisis years, as the difference post-policy becomes statistically insignificant after controlling for real GDP per capita.

Several measures aimed at alleviating (male) unemployment, as well as the glossing over of unemployment statistics resulted in a decrease of the male unemployment rate over the course of the 1930s. It is not clear however, if the marriage loan scheme offered strong enough incentives for unemployed men to take over women’s jobs. Thus, the marriage loan probably played only a small part in the decrease of male unemployment.

Tab. 1: Digitized Variables.

<table>
<thead>
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<th>Variable</th>
<th>Description</th>
<th>Frequency</th>
<th>Years available</th>
</tr>
</thead>
<tbody>
<tr>
<td>int_fworkingpop</td>
<td>women in the workforce, data between census years are interpolated</td>
<td>yearly</td>
<td>1925, 1933, 1939</td>
</tr>
<tr>
<td>int_mworkingpop</td>
<td>men in the workforce, data between census years are interpolated</td>
<td>yearly</td>
<td>1925, 1933, 1939</td>
</tr>
<tr>
<td>tunemp</td>
<td>number unemployed people according to job centres</td>
<td>monthly</td>
<td>1933-1938</td>
</tr>
<tr>
<td>funempinsur</td>
<td>number of women who are main beneficiaries of unemployment insurance</td>
<td>irregularly (2-6 samples per year)</td>
<td>1932-1937</td>
</tr>
<tr>
<td>munempinsur</td>
<td>number of men who are main beneficiaries of unemployment insurance</td>
<td>irregularly (2-6 samples per year)</td>
<td>1932-1937</td>
</tr>
<tr>
<td>tunempinsur</td>
<td>total number of main beneficiaries of unemployment insurance</td>
<td>irregularly (2-6 samples per year)</td>
<td>1932-1937</td>
</tr>
<tr>
<td>frelief</td>
<td>number of women who are main beneficiaries of crisis care</td>
<td>irregularly (2-6 samples per year)</td>
<td>1932-1937</td>
</tr>
</tbody>
</table>
Continuation Tab. 1:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Frequency</th>
<th>Years available</th>
</tr>
</thead>
<tbody>
<tr>
<td>mrelief</td>
<td>number of men who are main beneficiaries of crisis care</td>
<td>irregularly (2-6 samples per year)</td>
<td>1932-1937</td>
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<td>trelief</td>
<td>total number of main beneficiaries of crisis care</td>
<td>irregularly (2-6 samples per year)</td>
<td>1932-1937</td>
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<tr>
<td>nrml</td>
<td>number of paid marriage loans yearly</td>
<td>yearly</td>
<td>1933-1939</td>
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<tr>
<td>nrcdml</td>
<td>number of credit deductions for living newborn</td>
<td>yearly</td>
<td>1933-1939</td>
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<td>livebirths</td>
<td>total live births</td>
<td>yearly and quarterly</td>
<td>1925-1939</td>
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<tr>
<td>stillbirths</td>
<td>total stillbirths</td>
<td>yearly</td>
<td>1925-1939</td>
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<tr>
<td>marriages</td>
<td>total marriages</td>
<td>yearly and quarterly</td>
<td>1925-1939</td>
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<td>frespop</td>
<td>female resident population according to territory</td>
<td>yearly</td>
<td>1925-1939</td>
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<tr>
<td>mrespop</td>
<td>male resident population according to territory</td>
<td>yearly</td>
<td>1925-1939</td>
</tr>
<tr>
<td>trespop</td>
<td>total resident population according to territory</td>
<td>yearly</td>
<td>1925-1939</td>
</tr>
</tbody>
</table>

Notes: Population data is based on the most recent population census while considering (small) yearly territorial changes; the variables tworkingpop, funempinsur, tunempinsur, frelief, trelief and stillbirths have been digitalised for calculation purposes and are not used directly in the analysis. Source: StatJbDR; Statistisches Reichsamt, Wirtschaft und Statistik.

Tab. 2: ITS Analysis Results.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Marriages in 1000</th>
<th>Live births in 1000</th>
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</thead>
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<td></td>
<td>Sum-Sq. df F p</td>
<td>Sum-Sq. df F p</td>
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<tr>
<td>Treatment</td>
<td>16625 1 19.739 0.0000*</td>
<td>217 1 0.9918 0.3237</td>
</tr>
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<td>Real GDP per capita</td>
<td>362 1 0.4299 0.5148</td>
<td>1643 1 7.5107 0.0083*</td>
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<td>8805 1 40.243 0.0000*</td>
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<tr>
<td>Residuals</td>
<td>46321 55 12034 55</td>
<td></td>
</tr>
</tbody>
</table>

\[^*\alpha < 0.05\]
Fig. 1: Evolution of the crude marriage rate (cmr), 1926–1938. Source: own representation; calculations based on StatJbDR.

Fig. 2: Evolution of the crude birth rate (cbr), 1926–1938. Source: own representation; calculations based on StatJbDR.
Fig. 3: Evolution of the male unemployment rate (munempr), 1932–1937. Source: own representation; calculations based on StatJbDR.

Fig. 4: Evolution of the ratio of granted marriage loans to marriages (nrmlm), 1926–1938. Source: own representation; calculations based on StatJbDR.
Fig. 5: Evolution of the ratio of credit deductions to live births (cdmlb), 1926–1938. Source: own representation; calculations based on StatJbDR.

Cor = -0.1415

Fig. 6: Correlation between the percentage difference in the mean crude marriage rate (cmr) and the mean ratio of granted marriage loans to marriages (nrmlm); standardised variables. Source: own representation; calculations based on StatJbDR.
Fig. 7: Short-run correlation between the percentage difference in the mean crude marriage rate (cmr) and the mean ratio of granted marriage loans to marriages (nrmlm); standardised variables. Source: own representation; calculations based on StatJbDR.

Fig. 8: Evolution of Quarterly Marriages in 1000, 1925–1940. Source: own representation based on Statistisches Reichsamt (Ed.), Wirtschaft und Statistik.
Fig. 9: Correlation between the percentage difference in the mean crude birth rate (cbr) and the mean rate of granted deductions (cdmlib); standardised variables. Source: own representation; calculations based on StatJbDR.

Fig. 10: Short-run correlation between the percentage difference in the mean crude birth rate (cbr) and the mean rate of granted deductions (cdmlib); standardised variables. Source: own representation; calculations based on StatJbDR.
Fig. 11: Evolution of Quarterly Live Births in 1000, 1925-1940. Source: own representation based on Statistisches Reichsamt (Ed.), Wirtschaft und Statistik.

Fig. 12: Correlation between the percentage change in the mean male unemployment rate (munempr) and the mean rate of marriage loans (nrmlm); standardised variables. Source: own representation; calculations based on StatJbDR.

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Bionote

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