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WOMEN LEAVING THE PLAYPEN: THE EMANCIPATING ROLE OF FEMALE SUFFRAGE*

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We study how political empowerment affected women's emancipation as reflected in their life choices. The staggered introduction of female suffrage in Swiss states allows us to exploit the variation in the age at which women were exposed to the right to vote to estimate the differences in life choices between women who were socialised in a world with politically empowered women and those who were socialised before. Our empirical findings document that early exposure to female suffrage increased female labour force participation, weakened marital bonds and motivated human capital investment.

The struggle for political equality between women and men was in many countries one of the fundamental social movements of the twentieth century. However, so far, little is known about what this constitutive change unleashed on the individual level, i.e., what the consequences of being politically empowered were for women's life choices. We focus on the introduction of female suffrage (FS in what follows) as a historic event, which allows us to learn about the effects of legal rights on attitudes, norms and, ultimately, individual and household decisions.

We hypothesise that socialisation in an environment with FS changes women's lives in terms of their labour force participation, their educational attainment and their marital decisions. This expectation is based on the idea that exposure to FS affects women's emancipation through increasing their self-efficacy and allowing them to depart from traditional gender roles, making employment more attractive, marriage less necessary and divorce more affordable. Drawing on evidence on personality development over the life course, we further expect that any impact

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The data and codes for this paper are available on the Journal repository. They were checked for their ability to reproduce the results presented in the paper. The authors were granted an exemption to publish parts of their data because access to these data is restricted. However, the authors provided a simulated or synthetic dataset that allowed the Journal to run their codes. The synthetic/simulated data and the codes for the parts subject to exemption are also available on the Journal repository. They were checked for their ability to generate all tables and figures in the paper; however, the synthetic/simulated data are not designed to reproduce the same results. The replication package for this paper is available at the following address: https://doi.org/10.5281/zenodo.7064906.

In the struggle for female suffrage and female emancipation in Switzerland, the book entitled 'Frauen im Laufgitter' (in English 'Women in the Playpen') by von Roten (1958) was probably the most prominent publication. It was perceived as scandalous and worked as a catalyst in public discourse. This book inspired the title of our paper.

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decreases with age of exposure (see, e.g., Roberts *et al.*, 2006; McAdams and Olson, 2010; Olivetti *et al.*, 2020).

Consequences of political empowerment are hard to study in an empirically rigorous way. Suffrage extensions are often part of some general societal change leading to a co-movement of institutional reforms and socio-economic development. In such a context, it is difficult to isolate a specific mechanism, such as empowerment affecting individual behaviour.

We concentrate on the experience in a strongly decentralised country, i.e., Switzerland. Here, it took about 60 cantonal and two federal popular votes between 1919 and 1971 to achieve a gradual introduction of FS on the level of states (in Switzerland, cantons), that finally led to uniform political participation rights for women and men at the federal level in 1971. The Swiss case constitutes an exceptional opportunity to learn about any effects of FS on female emancipation. First, the staggered introduction of FS across cantons produces a within-cohort variation in the age of exposure to suffrage that can be exploited for identification. This helps to overcome the obstacle that single FS introduction events across countries do not allow separation of age, cohort and general time effects from any potential effect of women's empowerment. Second, the Swiss case allows isolating the impact of FS from simultaneous policy changes, as no policy effects of its introduction have been found in Switzerland.[1] Third, in contrast to the countries that introduced FS early (i.e., in the 1920s or just after the Second World War), the Swiss case provides high-quality individual-level data on women who experienced suffrage extensions. This allows for a rigorous empirical analysis.

Our basic empirical strategy leverages the fact that women born in the same year and the same country were exposed to FS at different ages, depending on the canton they were born in. In combination with repeated cross-sectional data from the census, the resulting variation allows us to condition our estimates on age, canton-specific year effects and birth-cohort-specific regional labour market effects, taking care of the most obvious potential confounding factors (see, e.g., Bailey, 2006; Malmendier and Nagel, 2011; Giuliano and Spilimbergo, 2013 for related approaches). In particular, this specification only draws on within-cohort variation in the experience of FS of women living in the same labour markets and thus within regions with ample social exchange. The proposed empirical strategy identifies the specified effect under the assumption of parallel cohort trends across cantons, i.e., we rule out that there are canton-cohort-specific effects that are correlated with, but unrelated to FS.

Our historical analysis and its interpretation suggests two observations that speak to this assumption. First, men's favourable attitudes towards FS evolved rather smoothly over time. Second, there is a certain decoupling between the point in time of the introduction of FS and the development of attitudes towards FS. In particular, women did not get the right to vote as soon as the majority of men would have supported it. This is indicated by the observation that the support for FS when the cantons were first exposed to FS ranges from as low as 30% (when introduced in 1971 at the federal level against a majority in the respective canton) to over 70%. For some cantons, the introduction was thus overdue, and for others, it happened before women's enfranchisement could reach wider support among men. In other words, the introduction of FS

[1] In contrast to studies evaluating the effects for the United States and the UK, where suffrage was introduced early (see, e.g., Lott and Kenny, 1999; Miller, 2008; Aidt *et al.*, 2022), studies investigating the fiscal effect of FS for Switzerland find no evidence for a general increase in government size (see Stutzer and Kienast, 2005; Krogstrup and Wälti, 2011). Section 7 discusses policy effects as an alternative driver and presents a state-of-the-art re-evaluation of the (non-)effect in the Swiss case.

does not perfectly coincide with changes in male majority preferences, which would be a possible threat to our identification.

We further address the identifying assumption in four more steps. First, we transfer our basic empirical strategy to a border design, only exploiting within-cohort variation within local cross-cantonal municipality groups. This step makes sure that we study comparable groups of women across cantons who were not only exposed to the same local labour market conditions, but, by virtue of living in the same border group, were exposed to similar shocks and ex ante attitudes, but different introduction dates of FS. Second, we demonstrate that the outcomes measured for cohorts already too mature to respond evolve in parallel in early and late introducing cantons. Third, we validate that we see no diverging trends in cantonal outcomes before the introduction of FS (otherwise cohorts might have been exposed to differential developments). Fourth, in an event-study analysis, we corroborate that there were no discernible policy effects of FS.

We consistently find that Swiss women exposed to FS later, compared to those exposed earlier in life, made systematically less emancipated life choices. In particular, our main estimates exploiting the border variation show that women who were exposed to FS late in life, i.e., after the age of 35, have an up to around 10 percentage points lower probability of being engaged in paid work than women who were exposed already before the age of 17. For those in between, the difference increases with the age of exposure to FS, i.e., any reaction is weaker the older a woman was when FS was introduced. In line with this finding, we further document that women exposed to FS later in life have a higher probability of being a housewife, are more likely to marry and to stay married, and are less likely to achieve any higher education. Finally, consistent with more traditional life choices, in a supplementary analysis of survey data we find that they also tend to marry at a younger age and report higher fertility.

In additional analyses, we study the mechanisms behind the documented effect on emancipation. First, we explore men's attitudes as a possible driving force. The balancing exercises in the border design show that men in border municipalities are comparable in their support for FS before exposure. However, men in municipalities exposed to FS earlier experienced a stronger increase in support for FS. It is thus conceivable that the impact of FS on women's life choices is partly driven by an effect of FS on men's attitudes towards women's roles in society. In order to assess this conjecture, we study the effect heterogeneity with respect to the majority position on FS of the male electorate across municipalities. In sum, our results suggest that there might be a reinforcement effect working through men's attitudes. However, we conclude that it is unlikely to be the main driver behind the estimated effects. Second, in additional analyses based on Swiss survey data, we find that women exposed to FS later (*i*) report a lower level of perceived control over their lives, (*ii*) report more traditional gender norms and (*iii*) are less likely to be politically engaged. These findings are consistent with the proposed mechanism working through increased self-efficacy and its impact on gender norms. Third, a placebo exercise exploiting the Swiss French-German language border does not suggest spillover effects in the diffusion of the impact of FS beyond cantonal borders and thus no potential downward bias in our estimates.

Finally, we present a set of empirical results validating that our estimates are not sensitive with respect to the definition of a specific age cutoff, are unlikely to be driven by spatial sorting and are robust with respect to correcting our inference for a small number of clusters. We further demonstrate the power of our fixed effect strategy to control for spurious correlations.

Our analysis is motivated by and speaks to different streams of research. First, our analysis links to research on how political rights affect individuals' choices and preferences. This includes the notion of political socialisation from a life course perspective. It emphasises that people's

personality and political attitudes are formed in young adulthood (see, e.g., Plutzer, 2002; Franklin *et al.*, 2004; Giuliano and Spilimbergo, 2013).[2] While consequences for individual decisions beyond political participation are included conceptually, they are rarely studied explicitly. We offer such a contribution by evaluating the consequences of exposure to FS for women's life choices. Second, we complement research that studies the long-term determinants and the persistence of gender roles (see, e.g., Fernandez and Fogli, 2009), and traces and identifies their historical roots (see, e.g., Alesina *et al.*, 2013 and Teso, 2019, and, for a review, Giuliano, 2017). While this research strikingly documents the persistence of gender norms, our setting allows us to test whether constitutional rights are able to trigger a transformation in these norms in the medium term, i.e., over one to two generations. Third, our evidence complements previous research showing that circumstances that lead to greater bargaining power for women in the economic sphere (like a higher likelihood of working and a higher educational level) increase measures of empowerment in other life domains, for instance, marriage exit options, social independence and financial autonomy (see, e.g., Teso, 2019; Tur-Prats, 2019; Bandiera *et al.*, 2020; Robinson and Gottlieb, 2021).[3] Fourth, from a broader perspective, our contribution adds to the literature studying the drivers of the transformation of women's lives to becoming active decision makers in the household and the labour market (see, e.g., Goldin, 2006; Doepke and Tertilt, 2009; Doepke *et al.*, 2012). Some important drivers have been found to be the contraceptive pill (Goldin and Katz, 2002), technological change that increased demand in the service sector (Goldin, 2006) and, for example, improved household technology (Greenwood *et al.*, 2005). We add evidence for Switzerland, suggesting that exposure to the political empowerment of women is an additional force contributing to this overall development.

The remainder of our paper is organised as follows. Section 1 relates women's exposure to formal political participation rights to their individual life choices, leading to our main hypotheses. Section 2 explains the institutional context and provides a brief history of the introduction of FS in Switzerland. The data used in our main analysis are described in Section 3. Section 4 explains the empirical strategy, and Section 5 presents our main results. Section 6 explores the potential mechanisms behind the documented effects, before Section 7 discusses the validity of our main identifying assumption. Section 8 validates the robustness of our estimates. Finally, Section 9 offers some concluding remarks.

1. Theoretical Context and Hypotheses

Norms and gender roles are to a large extent social constructs, which are formed through interaction or socialisation, as well as by the imitation of role models (Bussey and Bandura, 1999; Olivetti *et al.*, 2020). Within an economic framework, they affect people's behaviour either as restrictions or preferences. In the latter case, particular norms are internalised and become part of an individual's self-concept or identity (for a conceptualisation in economics, see Akerlof and Kranton, 2000; Alesina and Giuliano, 2015). Importantly, preferences and norms that drive economic agents' behaviour are partly shaped and affected by institutions (see, e.g., Bowles,

[2] There is significant related evidence that the eligibility to vote in young adulthood has persistent effects on political participation (see, e.g., Meredith, 2009; Coppock and Green, 2016) and political attitudes (Mullainathan and Washington, 2009).

[3] Such circumstances have further been found to increase investment in girls' human capital (see, e.g., Ashraf *et al.*, 2020b), to reduce violence against women (see, e.g., Alesina *et al.*, 2021) and to lead to generally more egalitarian norms (see, e.g., Tur-Prats, 2019).

1998).[4] We argue that this mechanism in social transformation also applies in the case of political participation rights.

We hypothesise that women being granted and exposed to formal political participation rights experience an increase in their perceived self-efficacy and empowerment. Any such effect is expected to materialise in more emancipated life choices. These are choices towards economic independence, choices that deviate from traditional gender roles and choices that face the risk of social stigma like divorce. We expect that any such impact on emancipation is smaller the later a woman is exposed to FS.

The reasoning in this overall hypothesis is based on two building blocks.

Exposure to FS empowers and increases self-efficacy across life domains.

First, there is the idea that the experience with a world in which women are politically empowered also fosters emancipation in other domains of life. It builds on the argument that institutions allowing for the experience of autonomy, competence and relatedness strengthen people's perception of control and causal agency, two important factors in human motivation and action (Deci and Ryan, 2000). Exposure to participation rights and their use, as well as exposure to other politically empowered women, are thus seen as a source of self-efficacy and esteem, changing women's perceptions of appropriate gender behaviour, and allowing them to think of more emancipated and self-determined life plans.[5] This reasoning is rooted in substantial psychological research on mastery, self-determination and self-efficacy (see, e.g., Gecas, 1989; Bandura *et al.*, 2001) and in research on democracy theory (Lane, 1988). It is further supported by Sen (1990), who suggests that 'the process of politicization—including a political recognition of the gender issue—can itself bring about sharp changes in these perceptions' (p. 7). According to him, the perception of gender roles per se is an important driver of bargaining outcomes, independent of material resources and contributions. FS might thus change social norms, and any positive effect on labour market outcomes could be reinforced by a simultaneous increase in the threat point (or focal point) in household bargaining (see, e.g., Manser and Brown, 1980; Pollak, 1994; Lundberg and Pollak, 1996; Ashraf *et al.*, 2020a). This argument is furthermore consistent with the reasoning in Doepke and Tertilt (2009), where women's legal rights determine the marital bargaining. Both shifts are expected to result in systematically different life decisions of women who are more empowered, and have become more likely to work outside the home and use their own labour income to decide more freely about marriage and divorce. Any such effect is likely to work through three channels. First, a strong initial symbolic effect, as women who are granted the right to vote feel empowered and make different life plans. Second, a self-reinforcing effect as experience of self-efficacy and financial independence further strengthen agency. Third, contact with peers works as a multiplier when they experience the same empowerment, and are exposed to female role models (like mothers) who express higher self-esteem and behave less traditionally. The impact of FS on emancipation is thus strengthened over time as well as over generations.

Exposure to FS matters more for the young.

Second, there is the combination of the previous arguments with the idea that the effect on women's life choices depends on the age at exposure to an environment with FS. The literature on

[4] The relationship is, of course, bidirectional. Social norms are likely to shape formal institutions, but formal institutions also affect social norms. Our empirical design, described below, takes this potential simultaneity into account.

[5] Less traditional gender roles seem to be strongly connected to women's self-efficacy perception and to be of importance for gender development (Bussey and Bandura, 1999). In line with these arguments, for example, Beaman *et al.* (2012) found that being exposed to female leadership in their village increases girls' career aspirations and educational attainment.

personality development across the human life course overall agrees that attitudes and personality are to a large extent formed during adolescence and early adulthood. However, there are also some perceptions of appropriate gender-specific behaviour that is partly formed even earlier, during socialisation in childhood (Witt, 1997). While there is some discussion in developmental psychology regarding the most influential years of age (reflected in the *impressionable years hypothesis*), it is generally found that personality and attitudes stabilise with increasing age (see, e.g. Krosnick and Alwin, 1989; Roberts *et al.*, 2006 and, for a review, McAdams and Olson, 2010). On the basis of these findings, we expect that the impact of the exposure to FS diminishes with age at the time of its introduction, i.e., the longer-term consequences are smaller as individuals' personality and values are already more matured and major life choices have already been made. While a woman experiencing suffrage in her, say, fifties is unlikely to change her norm concepts and is no longer able to change many of her life choices, a stronger effect is expected for a woman who is young when exposed to FS. She grows up seeing other women becoming more emancipated, is raised by a more empowered mother and has the chance to make many important life choices under the new conditions.

As changes to norms and aspirations affect individuals' decisions over the whole life course, we would not expect any effect to materialise immediately after suffrage extension. We would, rather, expect that the differences in women's life choices accumulate over their life course. The empirical strategy applied below is set up to capture these accumulated effects.

2. Institutional and Historical Context

In 1950, the Swiss Association for Female Suffrage portrayed Switzerland in a poster campaign as an island in Europe where women do not have the right to vote (see Online Appendix Figure A1). Indeed, most Western countries either extended the right to stand and vote in national elections to women during the period of the First World War (e.g., Denmark in 1915, Austria, Canada, Germany and the United Kingdom[6] in 1918, the Netherlands in 1919 and the United States in 1920) or at the latest at the end of the Second World War (i.e., France in 1944, Italy in 1945 and Belgium in 1949) (Ruiz and Marín, 2012).

In Switzerland, it was only in February 1971 that FS was introduced at the federal level in a mandatory referendum. The legal change to almost uniform political rights for men and women occurred after about 60 cantonal and two federal popular votes. As our empirical strategy relies on the variation resulting from the process of its introduction, we describe this development in some detail in Online Appendix A drawing on the work of Ruckstuhl (1986), Voegeli (1997), Seitz (2020) and Studer and Wyttenbach (2021). In the following paragraphs, we give a brief summary of the main developments, explain the institutional specifics and draw some links to our identification strategy.

2.1. *The Role of Referendum Democracy and Federalism*

Political rights in the Swiss federation are legally determined at the federal and cantonal levels, and partly at the municipal level. Specifically, the introduction of FS required a change in the constitutions of the jurisdictions concerned. In all cantons as well as at the federal level, such reforms accordingly involved a popular vote, and thus the introduction of FS depended on the

[6] In the UK, FS was first limited to some women and only extended to all of them without preconditions in 1928.

support of a majority of ordinary male citizens. Unlike in the representative democracies in the other European countries, a majority of elected politicians supporting FS was not sufficient in Switzerland. This aspect of the constitutional reforms is probably one major factor in the late adoption of FS in Switzerland (Koukal and Eichenberger, 2017). Besides, there was no window of opportunity for making female suffrage part of a new constitution. The federal constitution had been written in 1848, and fully revised in 1874, but not again until 1999. During the nineteenth century, when political equality could have been explicitly included as an additional paragraph in the constitution, female suffrage was not on the Swiss political agenda (Seitz, 2020).

2.2. *A Historic Brief of FS Expansion in Switzerland*

In the late nineteenth century, the demand for gender equality in the civil law was expanded to political rights. In the canton of Zurich, some women anonymously postulated the active and passive voting rights for women, in Geneva, an activist founded the Association internationale des femmes, and several educational and professional associations took a stand for the betterment of women's legal and economic situation, including the right to vote. Moreover, cantonal associations for FS emerged and formed the Swiss Association for Women's Right to Vote (Schweizerischer Verband für Frauenstimmrecht, SVF) in 1909 (Hardmeier, 1997).

During the First World War, members of women's associations saw their involvement in wartime welfare as rendering a service in advance in exchange for future political rights. However, the Federal Council did not respond to the two motions to consider the introduction of FS in 1918. Most of the motions for FS submitted in the cantons also failed in parliament. All the referendums held between 1919 and 1921 in the cantons of Neuchâtel, Basel, Zurich, Glarus and St Gallen were clearly rejected.

The defeats curbed parliamentary activities in the cantons, and political sentiment influenced by politically conservative and fascist ideas turned towards women's traditional role in the home. Even after the Second World War, all attempts by women's associations were rejected (1946 in Basel, Basel District, Geneva and Ticino, 1947 in Zurich, 1948 in Neuchâtel and Solothurn, and 1951 in Vaud). Moreover, the Federal Council in 1951 declined a further FS postulate, saying that 'it would be too early to have a national referendum'.

The latter assessment changed during the Cold War, when the Federal Council was confronted with considerable opposition to its own political plans to introduce a compulsory civil defence service that included women without offering them full political rights. As a consequence, it presented parliament with a draft for the introduction of FS in 1958. The proposal passed and was put to a referendum vote on February 1, 1959. The revision of the constitution was clearly rejected by 66.9% of the men voting. However, support differed considerably across cantons and three cantons introduced FS at the cantonal level, either on the same occasion (Vaud) or shortly afterwards (Neuchâtel in 1959 and Geneva in 1960). The general defeat and the first introductory wave at the cantonal level was followed by a pause before, starting with Basel in 1966, step by step several other cantons followed, adopting FS on the municipal and/or cantonal level.

The change at the federal level was provoked by another plan of the Federal Council that stirred massive protests by old and new women's associations. In 1968, the Federal Council decided to consider accession to the European Convention on Human Rights (ECHR) with the reservation that FS would be excluded. This step gave new momentum to the movements favouring FS. The development led additional cantons to introduce FS and the Federal Council to prepare once more a proposal for the introduction of FS at the federal level. On February 7, 1971, the constitutional

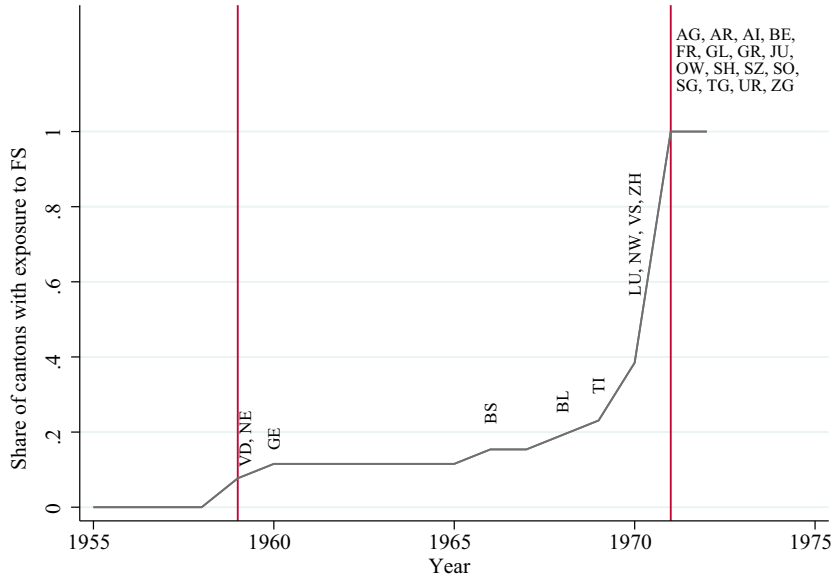


Fig. 1. *Share of Cantons with Exposure to Female Suffrage Either at the Municipal, Cantonal or Federal Level over Time.*

Notes: The two vertical lines denote the years in which a federal vote on the introduction of female suffrage took place, i.e., 1959 and 1971. For additional information, see Online Appendix Table A2.

change was approved by 65.7% of the participating male voters and also a majority of 18 out of 25 cantons. Most cantons that had up to then rejected voting rights for women at the cantonal and municipal levels followed suit in 1971 or 1972.[7]

Figure 1 visualises how over time women in more and more cantons were for the first time exposed to opportunities for formal political participation. The initial opportunity might have been at the municipal, cantonal or federal level, allowing women to participate in corresponding elections and votes. For cantons that adopted FS after its introduction on the federal level, the year of first exposure is set to 1971. Because of the direct democratic system that leads to frequent votes on ballots in addition to elections, it is very likely that women were able to vote in the same year they were enfranchised. Online Appendix Table A2 lists the introduction dates of FS at the cantonal as well as the municipal levels for all cantons.

Despite all its idiosyncracies, the path to women's enfranchisement in Switzerland can be characterised by two waves of introductions that were spurred by two catalytic political developments at the federal level (originally not directly related to the extension of political rights), i.e., the vote on a compulsory civil defence service for men and women alike and the political trickery around the ratification of the ECHR. Because these triggers interacted with cantonal developments, the timing of the introduction of FS does not simply reflect the point when the male majority became favourable to reform. Accordingly, FS was introduced with rather different majorities across cantons. While some cantons introduced it with a narrow margin, other votes

[7] Only in the canton of Appenzell Outer-Rhodes did it take until 1989 for the Landsgemeinde to narrowly approve FS, and in the canton of Appenzell Inner-Rhodes it required a decision by the federal court in 1990, stipulating that the term fellow citizens in the constitution also included women.

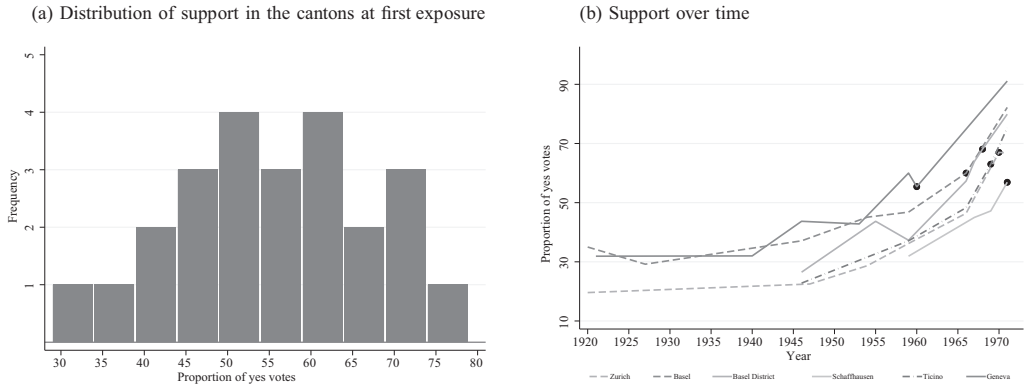


Fig. 2. *Support for Female Suffrage in Swiss Cantons.*
Notes: Panel (a) visualises the distribution of the support for FS in the cantons at the time they were first exposed to FS. If there was more than one vote on FS in the year of first exposure, we use the average support in all votes in the respective canton and year. Panel (b) depicts the development of the support of FS at the cantonal and federal levels (1959 and 1971) in cantons with at least four popular votes on the issue. The black dots mark the year of FS exposure. Panel D of Online Appendix Table A1 documents the relevant data sources.

ended with clear verdicts in favour of FS. Because of the independence of federal and cantonal voting rights in Switzerland, women in seven cantons experienced FS introduced at the federal level with only a minority of men in the canton supporting it. Panel (a) in Figure 2 depicts the distribution of the corresponding support for FS at the time of first exposure. It varies between as low as 28.9% to 74.65% (with an average of 55.6%).

Panel (b) in Figure 2 depicts the development of support for FS in certain cantons over time. While data are scarce, support seems to have gradually built up over several decades. This development and the great variation in support at the time of the introduction suggests that the single introductions were not triggered by local shocks occurring once the majority of men were in favour. Of course, there are differences in levels. In early introducing cantons, men were, on average, more in favour of FS throughout the century. From an identification perspective, our empirical approach, presented below, can cope with this issue.

In Switzerland, the development towards political rights for women has taken a particularly long time. It happened without a revolutionary rupture and there is no evidence of significant policy changes in the aftermath of the institutional change. We return to this issue in more detail when we discuss potential policy effects of the introduction of FS as an alternative mechanism in Section 7.

3. Data

In our main empirical analysis, we draw on harmonised micro-data from the Swiss census conducted in the years 1980, 1990, 2000 and 2010 originally compiled by the Swiss Federal Statistical Office (BFS) (BFS, 2021b). These data cover basic demographic information for the whole Swiss population up to 2000, and for a large sample of about 5% in 2010.

Our main sample is restricted to Swiss women who, when observed, are still living in the same canton they were born in. This criterion allows us to specify the age at which an individual

experienced the introduction of FS.[8] We further restrict the sample to an age range between 26 and 67 covering the cohorts born between 1913 and 1984.[9] The highest age at which women in our sample experienced the introduction of FS is 58. Online Appendix Figure A6 visualises the distribution of the age at which women were enfranchised in the main sample of Swiss women.

We define six indicators measuring women's life choices as our main outcomes of interest. These are: **working**, indicating whether a person is active in the labour force; **part time**, indicating whether a person works part time; **housewife**, indicating whether a person is a homemaker; **ever married**, indicating whether a person was ever married; **divorce**, indicating whether a person is divorced; **any higher education**, indicating that the highest educational attainment is higher secondary or tertiary education. Panel A of Table A1 in Online Appendix B provides more detailed information on the definition of these variables and the data.

4. Empirical Strategy

4.1. *Identifying Variation*

The reform of the electoral law within the federal structure of Switzerland led to a staggered enfranchisement of women across Swiss cantons. Figure 3(a) summarises the variation in the years in which women in each Swiss canton were for the first time exposed to FS. In total, there are ten cantons, covering about half of the Swiss population, where women experienced suffrage before 1971.

Because of the staggered introduction, women of the same birth cohort, but living in different cantons, were exposed to FS at different ages. For instance, while a woman born in the canton of Vaud in 1935 was allowed to vote in 1959, and thus at the age of 24, a woman born in the canton of Bern in the same year could only participate in 1971 at the age of 36. As a consequence, there is variation in the age of first exposure to FS within birth cohorts. This is visualised for two example cantons in Figure 3(b). The maximal age span at exposure by cohort is marked by the two end points, referring to the earliest introduction (Vaud in 1959) and the latest (Bern and 14 other cantons in 1971).

In order to empirically assess the age-dependent long-term impact of FS, i.e., to see whether the life choices of later treated women differ systematically, we define two groups separated by an age threshold. Ideally, the reference group would include women who were fully socialised under FS. However, there is no consensus on the ages at which the period of life's strongest social influences starts and ends. One interesting age threshold is late adolescence, when socialisation within the family becomes less important and before the so-called formative years begin. We therefore define the reference group (or the early exposed) as including those women who were exposed

[8] While the census data do not include information on the canton of birth, they contain an indicator of whether an individual still lives in the canton of birth. About 60% of all women in our sample definition reside in the canton they were born in, when observed. The data restriction could produce a selected sample if women were to select into cantons depending on the time of the introduction of FS. We validate that there is no evidence for such selection in Section 8.

[9] This restriction is motivated by a common support reasoning between the reference group (introduced in the next section) and the group of women experiencing the introduction of FS at the age of 17 or later. The youngest possible age we can observe of women experiencing the introduction of suffrage after the age of 16 is 26, as the latest introduction took place in 1971 and individuals aged 17 in this year were born in 1954, and thus were 26 in 1980 (our first observed year). The oldest individuals in the reference group to experience FS before the age of 17, are aged 67. Individuals aged 16 in the year of the earliest introduction (1959) were born in 1943 and were 67 in 2010.

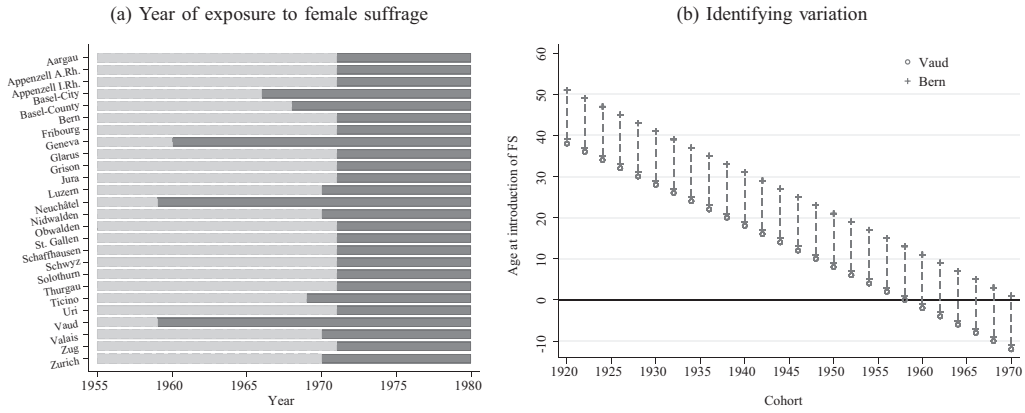


Fig. 3. *Year and Age Variations of First Exposure to FS.*
Notes: Panel (a) visualises the year of women's first exposure to female suffrage in Swiss cantons (at either the municipal, cantonal or national level). The darker bars mark the period after the introduction. Panel (b) exemplifies the identifying variation, i.e., the maximum age range within which women from the same cohort experienced the introduction of the voting right for women (determined by the earliest introduction in 1959 in VD and the latest in 1971, for example, in BE). Table A2 in Online Appendix C lists the introduction dates of FS at the cantonal as well as the municipal levels for all cantons.

to FS (as well as to politically empowered mothers and role models) before they turned 17.[10] In contrast to this reference group, there are women who were mainly socialised in an environment without politically empowered women. In our empirical specification, we differentiate between four groups for the women exposed to FS after the age of 17.[11]

4.2. *Estimation Model*

Our empirical model aims to measure how women who were first exposed to FS at the age of 17 or later are characterised relative to the women in the reference group, who experienced the existence or the introduction of FS before they turned 17. This idea is captured in our baseline specification summarised in (1). We estimate the linear probability model

$$Y_{ict} = \alpha_0 + \sum_{k=1}^{B}(\tau_k \mathbb{1}_k) + \upsilon_{age\ x\ c} + \mu_{rlm\ x\ cohort} + \eta_{c\ x\ t} + \beta X_{it} + \gamma_m + \epsilon_{ict}, \qquad (1)$$

where Y is our dependent variable, measuring some outcome for individual i in canton c registered in the census at time t. As we expect the differences in attitudes and life choices of those who experienced FS later to increase, we define B groups for the age at which a woman is exposed

[10] While the age of 17 has in our view some appeal as a cutoff point for separating women largely socialised under a regime with FS from those who were at least partly socialised without, the decision, of course, leaves some discretion. One could well argue for setting this cutoff at a slightly higher or lower age. In the interest of readability, we stick to one age cutoff for the definition of the reference group. We check that our results are not driven by the choice of this particular threshold in Section 8.

[11] Online Appendix Figure A3 presents descriptive evidence for our main dependent variables on how women who experienced enfranchisement before the age of 17 differ from those who experienced it later in life. The raw differences suggest more traditional life choices for women in the latter group. However, the observation may also arise because the group experiencing FS late in the data is, on average, composed of older cohorts and of older women who might just make different choices independent of FS.

to FS in her canton of birth. Here $\mathbb{1}_i$ is an indicator variable set to one if a woman's age at which she was first exposed to FS falls into group k, and τ_k is the estimate of the difference in the outcome variable compared to the reference group. We define four groups according to their age of exposure (age_{l-h}, between l and h) as follows:

$$\mathbb{1}_1 = \mathbb{1}_{(age\_vote_i \geq 17 \ \& \ age\_vote_i \leq 20)},$$

$$\mathbb{1}_2 = \mathbb{1}_{(age\_vote_i > 20 \ \& \ age\_vote_i \leq 25)},$$

$$\mathbb{1}_3 = \mathbb{1}_{(age\_vote_i > 25 \ \& \ age\_vote_i \leq 35)},$$

$$\mathbb{1}_4 = \mathbb{1}_{(age\_vote_i > 35)}.$$

Here age_vote_i is fixed per individual and depends on the year the person was born in the respective canton. The group of women who were younger than 17 when exposed to FS thus serves as the reference group, and the coefficients of primary interest τ_k indicate the extent to which women who are exposed to FS later in life differ in their outcomes compared to this reference group.

Given the theoretical considerations, we expect the results to indicate that women exposed to FS later in life make less emancipated, or more traditional, life choices. All the outcomes are observed several years after 1971, i.e., the last introduction date. Our estimates thus capture the accumulated effect of women's life choices over their life course. The decisions leading to these outcomes were made given the situation during socialisation, and might have been taken before or after the introduction of FS.

4.2.1. *Control strategy*

In order to isolate the effect of exposure to FS from other cantonal, time-, cohort- or age-specific factors that might themselves be correlated with our outcomes, we include a restrictive set of fixed effects in our model. Specifically, the staggered introduction of FS, together with the repeated cross-sectional data, allow us to control for cohort as well as age effects, two potential major confounds of any estimated differential. That is, we have within-cohort variation in the age of exposure, and observe different cohorts at the same age and in different treatment status.[12]

We consider these age and cohort effects in a rather flexible form. For the former, we include $\upsilon_{age\ x\ c}$, which is a vector of **canton-specific age effects**. These age effects allow us to factor out life-cycle effects; for instance, older women being more likely to be divorced or less likely to work. We further allow these life-cycle effects to differ across cantons. This might be relevant if the age effects were to systematically differ across cantons that introduced FS earlier or later. For the cohorts, we include **labour market region-specific birth-cohort effects**. This takes account of any cohort-specific effects such as, for instance, that older cohorts, on average, are less likely to participate in the labour force in general (or any national policies targeted at particular cohorts, for instance, an adjustment of the retirement age). As different cohorts might still be exposed to different shocks in different regions that might be somehow related to the exposure to FS,

[12] Online Appendix Table A3 presents an example of the resulting variation in our data, again drawing on the example of the cantons of Bern (BE) and Vaud (VD). In this example, we observe individuals born in 1950 who were exposed to FS before age 17 in VD, but not in BE, where they were already 21 when FS was introduced. Moreover, for Bern across the census waves in 1980, 1990 and 2000, we observe cohorts born in 1950, 1960 and 1970, at the age of 30. The basic idea behind this approach is inspired by the identification strategies in, for example, Malmendier and Nagel (2011), Giuliano and Spilimbergo (2013) and Fuchs-Schündeln and Schündeln (2015). Our implementation, however, deviates in that our treatment is an absorbing state. Once a cohort is treated it stays treated and all younger cohorts are treated. It is in this regard quite similar to a generalised difference in differences and to the application in Bailey (2006).

(a) Labour market regions (b) Border municipalities

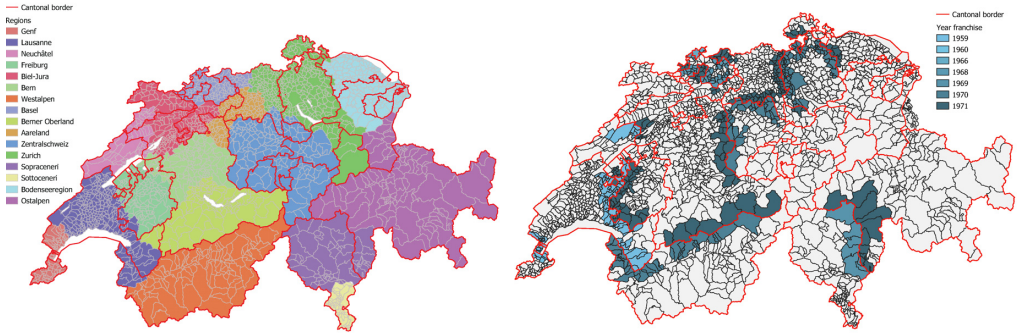


Fig. 4. *Labour Market Regions in Switzerland and Border Municipalities.*
Notes: Panel (a) visualises the regional labour markets in Switzerland. Panel (b) visualises the final set of border municipalities within a 3-km range around cantonal borders with variation in the timing of the introduction of FS. The shading of the areas indicates the respective year of the introduction of FS, i.e., the lighter, the earlier the introduction.

we additionally allow for an interaction of cohort and regional labour market (rlm) effects, i.e., $\mu_{rlm\ x\ cohort}$. Figure 4(a) presents the 16 labour market regions in Switzerland. Individuals within the same region are likely to interact, to share similar labour market shocks, and thus are also more likely to share and to be exposed to similar values. This specification thus only exploits the variation in the age of exposure within a cohort and regions that at least partly overlap with cantons that introduced FS at different points in time. Or, to put it differently, we do not draw on the variation between cantons that do not share a common labour market.

Furthermore, we include $\eta_{c\ x\ t}$, which is a vector of canton-specific year effects. This controls for the fact that, generally speaking, some cantons might be more liberal than others. Furthermore, it allows us to pick up region-specific time-varying shocks related to, for example, macroeconomic development and differences in the cantonal labour market. Any measured outcome difference between women treated early or late therefore cannot be explained by differences in the current institutions, the economic situation, the political environment or any canton-times-year unobservables that affect all women in a canton alike. We also take into account a set of municipality fixed effects γ_m. They control for time-invariant differences in general attitudes towards women and geographical conditions across municipalities. Finally, we control for an individual's religious denomination at the time of the interview (X_{it}), as it might be another relevant determinant of the investigated outcomes. We cluster the standard errors at the level of the canton, i.e., the coarsest level at which our identifying variation arises.

4.2.2. *Identifying assumption*

The relevant dimension this specification cannot control for are canton-specific cohort effects, as this is precisely the level from which our identifying variation arises. Our identification thus hinges on the assumption that there are no unobserved factors at the cohort-canton level that correlate with the age at exposure, or, to put it differently, that cohorts across cantons (within the same labour market region) would have evolved in parallel if not for the introduction of FS. The assumption implies that there are, for example, no policy effects of FS, no simultaneous policy

changes, no societal overturns, no changes in attitudes, and no labour market shocks that affected the relevant cohorts in a similarly differential way as exposure to FS.

We address the major concern that the introduction of FS was driven by a simultaneous change in the majority sentiment towards women's rights in two ways. First, we point to the historical context reviewed above. The unfolding of enfranchisement across cantons speaks against a sudden change in attitudes. It instead suggests (*i*) that attitudes towards FS evolved rather smoothly over time and (*ii*) that there is a certain decoupling between the time of the introduction of FS and the development of attitudes towards FS. As mentioned, FS was not necessarily introduced as soon as the majority of men would have supported it. Support for FS at the time of its introduction varied between below 30% and above 70%. It is thus unlikely that the introduction systematically coincides with a sudden change in majority preferences. Second, to make sure that we identify the effect within comparable groups across cantons that are exposed to the same local labour market, and *similar* attitudes, we transfer our baseline empirical strategy to a border design exploiting only within-cohort variation within local border groups.

We further address the validity of the main identifying assumption in three additional analyses. First, we validate that cohorts already too old to be affected evolve in parallel in early and late introducing cantons. We show that we only see the deviation in cohorts young enough to be affected. Second, we validate that we see no diverging trends in cantonal outcomes before the introduction of FS that would suggest that cohorts might have been exposed to differential developments. Third, we validate that there are no discernible policy effects of FS.

4.2.3. *Border design*

The basic idea behind the border design is that bordering municipalities and their residents are more comparable than those in more distant municipalities at the point in time when the treatment is assigned, because people in the bordering municipalities are more likely to interact with each other (see, e.g, Holmes, 1998; Black, 1999; Dell, 2010; Egger and Lassmann, 2015; Eugster and Parchet, 2019). In our context, they likely share local labour markets, local beliefs, values and societal norms as well as local shocks. This level of comparability might not be achieved within the 16 labour market regions that sometimes cover large parts of single cantons (see panel (a) in Figure 4). Accordingly, the concern remains that these spatial units could have followed different trends. In order to alleviate such concerns and to define groups of comparable areas that are more likely to follow common trends, we thus transfer the basic idea of the border discontinuity design to our empirical strategy.

We define the initial set of border municipalities within a range of 3 km around cantonal borders (see panel (a) in Online Appendix Figure A4). We then exclude municipalities that border two or more other cantons (see panel (b)), and define border groups as the set of municipalities that share the same border between two cantons. Finally, we select those municipalities in border groups for which there actually is variation in the timing of the introduction of FS (see panel (c)). This results in 489 municipalities in 15 border groups and 17 cantons, i.e., it reduces the sample to one-fifth.[13] The final set of border municipalities is visualised in panel (b) of Figure 4.[14]

[13] While the sample for the border design is considerably smaller than the full sample, the two are still comparable with respect to the average outcomes as reported in Table 2 and Online Appendix Table A4.

[14] The geographic information was processed in the open-source geographic information system *QGIS 3.16.3*. The border municipalities were defined based on the municipalities as of 2021. The geospatial vector data were provided by Swisstopo (2021). For the empirical analyses, we re-coded them to the historical stock whenever possible.

Table 1. *Balancing: Border Municipality Characteristics.*

	Share French	Share over 65	Share female	Population density	Population
Panel A: predetermined demographics					
$I(earlier)$	1.107	0.778	0.206	–1.499	–114.222
	(2.950)	(0.569)	(0.359)	(31.759)	(192.835)
Border group FEs	Yes	Yes	Yes	Yes	Yes
Mean dep.	31.48	9.42	49.03	160.42	1,565.98
No. of obs.	489	489	489	458	458
No. of clusters	15	15	15	15	15
R^2	0.93	0.17	0.08	0.25	0.36

Panel B: political preferences

	Predetermined				Post-treatment	
	Yes share 1945	Yes share 1957	Yes share 1959	Yes share 1970	Yes share 1971	Yes share 1981
$I(earlier)$	–0.423	1.869	3.240	–5.525	8.887***	0.645
	(4.361)	(3.193)	(2.059)	(3.145)	(2.478)	(1.811)
Border group FEs	Yes	Yes	Yes	Yes	Yes	Yes
Mean dep.	71.13	49.22	25.00	40.26	62.33	55.08
No. of obs.	332	364	488	364	488	484
No. of clusters	15	15	15	15	15	15
R^2	0.24	0.43	0.43	0.47	0.60	0.42

Notes: Predetermined municipality demographics, as captured in the 1950 census, and political preferences in border municipalities. The votes used to compare the municipality-level political preferences related to the position of women in society encompass the following topics: 1945, vote on the introduction of maternity insurance; 1957, vote on a compulsory civil defence service including women; 1959, first vote on the introduction of female suffrage at the federal level; 1970, vote on the right to housing and expansion of family protection; 1971, second vote on the introduction of female suffrage at the federal level; 1981, vote on equal rights for men and women. Panel B of Online Appendix Table A1 provides a more detailed description of the votes. Standard errors are clustered at the border group level and are reported in parentheses. *Significance levels:* *** $p < 0.01$.

4.2.4. *Balancing in the border design*

The design rests on the idea that the resulting set of municipalities within a border group are ex ante comparable in their observable and unobservable characteristics. To validate this, we run a series of balancing tests. Specifically, we define an indicator $I(earlier)$ set to one for those municipalities within a border group that are on the side of the border that introduced FS first, and regress it on municipality demographics and political preferences. The coefficient of the indicator tells us whether these municipalities are, on average, different from those on the other side of the border where FS was introduced later. In order to exploit only the variation within border groups, we include border group effects.

Panel A of Table 1 shows the results for municipality demographics in 1950, before any canton introduced FS. We do not find that the municipalities on the early introducing side of the border are systematically different in their share of French-speaking residents, of older residents or of women, nor in population density, or total population either. In the first three columns of panel B we check whether male citizens also held similar political preferences with regard to women's rights before either side of the border was exposed to FS. Such an analysis is possible, based on the results of national votes on topics related to the position of women in society, as only men were allowed to vote on the federal level until 1971. We observe that men's preferences are comparable before any canton introduced FS, i.e., in 1945, for a vote on the introduction of maternity insurance, in 1957, for a vote on compulsory civil defence service that would include

women, and in 1959, for the first vote on the introduction of FS at the federal level. The votes after 1959 are no longer predetermined, but post-treatment, as women were allowed to vote in some cantons and the male electorate was accordingly exposed to voting women. Any difference in federal vote outcomes might thus be affected by FS at the cantonal level. We still observe that men across borders voted similarly in a vote on the right to housing and expansion of family protection in 1970. However, we find that men in border municipalities that introduced FS earlier, and therefore had been exposed to FS for some time, were much more likely to support the introduction of FS at the federal level in the second vote in 1971. Ten years later, in 1981, male *and* female voters decided on an article for equal rights for men and women. Across border municipalities a systematic difference in support is no longer observed.[15]

This analysis validates that pre-treatment, i.e., before any canton experienced FS, the border municipalities are comparable in demographics and their political position with respect to women's rights, which suggests that our border design is indeed based on comparable regions. Moreover, the result for the federal vote in 1971 suggests that men's experience with FS in the canton made them generally more favourable towards female political participation rights. As a consequence, any effect we find in our main analysis might be a combination of the impact of FS on women directly, and an additional reinforcing effect due to a change in men's attitudes, which is driven by their experience with FS. This aspect will be relevant for interpretation of the mechanism and the drivers behind our findings, which we discuss in more detail in Section 6.

4.2.5. *Border design specification*

In order to exploit only the within-border group variation in our main specification, we reduce the sample of individuals to those living in one of the selected municipalities, and augment our baseline specification presented in (1) by **cohort-specific border group (*bg*) fixed effects**. We estimate the linear probability model

$$Y_{ict} = \alpha_0 + \sum_{k=1}^{B}(\tau_k \mathbb{1}_k) + \upsilon_{age\ x\ c} + \mu_{bg\ x\ cohort} + \mu_{rlm\ x\ cohort} + \eta_{c\ x\ t} + \beta X_{it} + \gamma_m + \epsilon_{ict}. \quad (2)$$

Panel (c) of Online Appendix Figure A4 visualises the overlap between the border municipalities and the labour market regions. As the border design specification in (2) includes cohort-specific labour market region effects as well as cohort-specific border group effects, it only exploits variation within a border group and labour market. Thus, our identification does not draw on the variation in border groups that do not share a common labour market. This is, for example, the case when the cantonal border coincides with a separating mountain range. Overall, this specification should allow us to compare women who were exposed to similar living conditions, except for the fact that some of them were exposed to FS earlier.

5. Results

Table 2 reports the estimation results for the effect of exposure to FS on Swiss women's life choices based on the specification described in (2). The coefficients of the indicators for the age at exposure to FS should be interpreted in comparison with the reference group, i.e., women

[15] The outcome variables in this balancing exercise are described in detail in panel B of Online Appendix Table A1. Note that some municipality vote information is missing in the historical records, which is why the number of municipalities in the balancing estimates varies.

Table 2. *Female Suffrage and the Life Choices of Swiss Women.*

	Working (1)	Working given ever mar. (2)	Part time given working (3)	Housewife (4)	Ever married (5)	Divorced given ever mar. (6)	Any higher edu. (7)
Suffrage at							
$age_{0–16}$	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
$age_{17–20}$	–0.010**	–0.006	–0.008	0.016***	0.013**	–0.013***	–0.057**
	(0.005)	(0.005)	(0.007)	(0.005)	(0.005)	(0.004)	(0.026)
$age_{21–25}$	–0.029***	–0.020**	0.005	0.035***	0.025**	–0.027***	–0.092***
	(0.008)	(0.009)	(0.018)	(0.007)	(0.009)	(0.004)	(0.023)
$age_{26–35}$	–0.068***	–0.052***	0.016	0.066***	0.033***	–0.030***	–0.149***
	(0.009)	(0.012)	(0.024)	(0.007)	(0.010)	(0.005)	(0.042)
$age_{36–58}$	–0.097***	–0.080***	0.034	0.092***	0.027*	–0.028***	–0.152***
	(0.011)	(0.014)	(0.032)	(0.015)	(0.014)	(0.006)	(0.047)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Border group × cohort FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Labour market × cohort FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age × canton FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Canton × year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Municipality FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mean dep.	0.57	0.50	0.53	0.32	0.80	0.10	0.67
No. of obs.	527,404	421,295	298,788	527,404	527,404	421,295	516,268
No. of clusters	17	17	17	17	17	17	17
R^2	0.19	0.17	0.08	0.12	0.18	0.06	0.22

Notes: The results presented are based on the border design sample and estimation equation (2). Standard errors are clustered at the cantonal level and reported in parentheses. Significance levels: * $0.05 < p < 0.1$, ** $0.01 < p < 0.05$, *** $p < 0.01$.

exposed to FS before the age of 17. Column (1) shows that women are less likely to work the later in life they were exposed to FS. The difference ranges from 1 percentage point for those who were exposed early on, i.e., during their adolescence or early adulthood (age 17–20), to up to around 10 percentage points for those who experienced FS rather late in life (age 36–58), i.e., when presumably many relevant life choices had already been made. Given that the average female labour force participation rate in our sample is about 57%, this latter difference is sizeable and amounts to about 17%.[16] We find quite similar effects for women who were ever married (column (2)). Thus, women who mainly grew up in a world in which women are politically empowered are systematically more likely to be gainfully employed (a factor largely neglected in the economic literature on female labour force participation; see, e.g., the reviews in Fernández, 2013 or Gaddis and Klasen, 2014). Interestingly, there is an effect, albeit a small one, even for women who experience FS later in life. Women exposed to FS between the ages of 26 and 35 are 2.9 percentage points more likely to participate in the labour market than women who experienced FS even later. This implies that women affected after the age of 26 still reconsidered their labour market participation decisions.[17]

Women who experienced the introduction of FS later are less likely to work, but if they do work, they are not more or less likely to work part time (column (3)). This suggests that any effect tends to work through the extensive margin, which is likely to be explained by the fact that the majority of women work part time anyway. Women exposed to FS later are consistently more likely to dedicate their time to housework (column (4)).[18] In sum, women exposed to a world with FS, and thus also more emancipated female peers and role models, seem to develop and implement different life plans that provide them with more economic independence (potentially also increasing their bargaining power within the household).

Consistent with the notion that female empowerment increases the self-sufficiency of women, we find that the group socialised in an environment without FS is more likely to marry (column (5)). The effect barely increases in the age of enfranchisement and ranges around 3 percentage points. This makes sense, as being ever married is an absorbing state that cannot be changed once it has occurred. Women exposed to FS later in life are consistently less likely to divorce (column (6)). This finding might be driven by both the higher probability of working and thus being able to make a living after leaving a relationship, and a higher sense of self-esteem, allowing women to leave unhappy relationships. In a nutshell, women socialised in a setting where women who are empowered are less likely to marry, and if they marry, are more likely to divorce.

Studying female educational attainment, we find that women exposed to FS later in life are less likely to obtain any higher education, i.e., upper secondary or tertiary education. The difference amounts to between 5 and 15 percentage points, compared to a baseline of 67% (column (7)). This change in human capital investment might be driven by mothers exposed to FS and envisaging an independent life for their daughters, or by potentially higher returns to education as the probability of engaging in the workforce increases.[19]

The estimates presented confined themselves to only exploiting variation within border groups and within local labour markets. This should render a convincing argument for the comparability

[16] Online Appendix Table A8 presents the estimates for the probability of working, including the various fixed effects successively. The cohort effects turn out to be most relevant.

[17] The interpretation for labour force participation still holds when conditioning on individuals' educational attainment. The effect is mediated through this latter channel to only a small extent (see Online Appendix Table A7).

[18] The results for the labour market outcomes in columns (1) to (4) hardly change if we restrict the sample to only include women of working age (up to 60 years of age). The coefficients increase slightly.

[19] Note that our results are not sensitive to alternative definitions of the age cutoff (see Section 8).

of the subjects involved across cantons. As described previously, our baseline specification in (1) already relies on the variation within labour market regions only, and thus regions exposed to similar shocks. Perhaps unsurprisingly, the results also turn out to be quantitatively similar if we apply this more general specification (see Online Appendix Table A4 for comparison).

When interpreting the documented estimates, it is important to note that they are not conventional treatment effect estimates aimed at capturing effects materialising immediately after some intervention. They are, rather, estimates of the accumulated differences in women's life choices over their life course. The decisions leading to these differences were made given the situation during socialisation and might have been taken before or after the introduction of FS. Women in the reference group, growing up and being socialised in a world where women have a say in politics, made their decisions under the corresponding mindset. Women exposed to FS later in life and therefore socialised largely before FS, made their life choices predominantly under the corresponding attitudes and experiences. Thus, the estimates capture how much more likely a woman is, for example, to work years later when she was exposed to FS before the age of 17, making all relevant decisions after the introduction of FS, compared with a woman experiencing enfranchisement later in life and making at least some of her decisions before the introduction of FS. This consideration is particularly important when interpreting the effects for the groups experiencing enfranchisement late in life. In our set of outcomes, there are some that are expected to be amenable to change even late in life, such as participation in the labour market. Other outcomes like marriage are much less amenable to change after a certain age (and once they have materialised). It is therefore reasonable to observe that the differences in outcomes vis-à-vis the reference group increase with the age of enfranchisement for some outcomes, while they stabilise for others.

In a supplementary analysis, we additionally draw on survey data to capture two other relevant life choices that are not covered in the census. We consistently find that women exposed to FS later in life tend, on average, to marry at an earlier age and to give birth to more children. The underlying Survey on Families and Generations is briefly introduced in the next section, and the results are documented in more detail in Online Appendix Table A11.

Overall, we find systematic evidence that socialisation in a world in which women have a say in politics changes relevant outcomes that characterise the life of women. The later in life they are exposed to female empowerment, the less emancipatory, or the more traditional, are their life choices.

6. Discussion

In this section, we discuss potential mechanisms behind the documented effects of FS before we further validate our identifying assumption in Section 7. First, we explore the potential contribution of changes in men's attitudes in the overall effect of FS. Second, we draw on additional data on women's perceptions of control, their gender roles as well as their political participation to explore the relevance of the hypothesised mechanisms. Third, we present a placebo exercise that allows us to study potential spillover effects of value change.

6.1. *Men's Attitudes as a Main Driving Force*

The balancing exercise in the border design shows that the a priori preferences towards FS were similar in border municipalities. However, after exposure to FS men in border municipalities

who experienced FS in their canton earlier, compared with those who experienced it later, are observed to be more supportive of women's enfranchisement at the federal level in 1971. From a theoretical perspective, it is thus conceivable that the impact of FS on women's life choices is partly driven by an additional effect of FS on men's attitudes regarding women's role in society. Any effect on women's life choices we observe might then be a composite of reactions due to empowerment as well as due to changes in men's behaviour towards, for example, working women.

We are, of course, not able to observe what exactly motivated the change, as there are no data on changes in men's behaviour around that time. However, we can explore effect heterogeneity in order to learn whether men's attitudes towards women are the main or simply an additional driving force behind our findings. In particular, we exploit the stated preferences of male voters in the federal vote on the introduction of FS in 1971. The change of the Swiss constitution was accepted and led to the introduction of FS at the federal level. However, even in supportive cantons there were municipalities where a majority of male voters opposed the introduction. These municipalities can thus be regarded as being 'forced' (by the majority in their canton) to accept the enfranchisement of women. As we would expect attitudes to be less supportive of women's empowerment and emancipation in these municipalities, the reinforcement channel would predict small or no effects of FS there, but large effects in municipalities where a majority of men were in favour of FS. If, however, the documented overall effect was primarily driven by the pure exposure to FS, we would expect to see rather similar effects across municipalities. In order to test this prediction, we estimate an interaction model allowing for heterogeneous effects, depending on whether the men in a municipality within our border group sample supported FS in 1971. We classify municipalities as 'supportive' (or 'forced') if a majority of male voters voted in favour of (or against) FS in the federal vote in 1971. In our sample of border municipalities, there are 124, or a fourth, 'forced' municipalities. On average, the support for FS in our border municipality sample increased by 37 percentage points between 1959 and 1971. In this, the increase was stronger in the 'supportive' group (41 percentage points) than in the 'forced' group (26 percentage points). The 'supportive' group thus also proxies municipalities with a development of attitudes that is more favourable towards FS.

The results of this exercise are presented in Online Appendix Figure A9. The estimated effects for 'forced' and 'supportive' municipalities are generally similar. They are somewhat stronger in 'supportive' municipalities for the probabilities of working, being a housewife and ever being married. For these outcomes, some reinforcement might have played a role. For the probability of divorce and a higher educational attainment, we observe just the reverse. The effects are somewhat stronger in 'forced' municipalities, indicating that the empowering effect of FS played a major role in these outcomes. Overall, the results suggest that FS might have partly worked through men's attitudes, which are, however, unlikely to be the main driver behind the estimated effects.

6.2. *Female Suffrage and Women's Self-Efficacy and Perceptions of Control*

As motivated in Section 1, a potential mechanism for the effect of FS on life choices proposes that formal political participation rights increase women's (perceived) self-efficacy and control. We draw on two survey waves of the Swiss Household Panel (SHP) in 2012 and 2015 to investigate the proposed mechanism (FORS, Lausanne, 2021b). The two waves are particularly interesting as they include a battery of questions measuring individuals' self-efficacy. However, the data

have some limitations, and the assignment of the age at which women were enfranchised might well be fuzzy, so that the results have to be interpreted with caution.[20]

We observe that women exposed to suffrage later in life express a weaker control over life events, express their wishes with a weaker assertiveness, are more likely to indicate that their scope of action is determined by others and express less agreement that they are free to do what they want. However, they do not express a weaker control over their wants. While not all the differences are statistically significant at conventional levels, overall they imply that women exposed to FS later in life feel less self-efficacious and in control of their lives, compared to women who mainly grew up in an environment where women had a formal say in politics. The full results are reported in Online Appendix Table A10 and summarised in Figure 5(a).

6.3. *Female Suffrage and Women's Stated Gender Norms*

Conceptually, women's emancipation involves an increase in self-efficacy as well as a change in the perception of appropriate behaviour, i.e., gender norms, that then materialises as systematically different life choices. Measures of stated gender norms are, however, only available in two waves for the years 2013 and 2018 of a recently implemented Survey on Families and Generations (BFS, 2021a). Furthermore, the sample is, again, rather small and the results should thus be interpreted with caution.[21]

We find that women exposed to FS later in life are more likely to state that a university education and a job are more important for men than for women. They are further more likely to indicate that childcare is more important to women and that caring for children and the household is primarily the responsibility of women. Consistently, they are more likely to support the male breadwinner model and think that men should earn the family living. The full results are documented in Online Appendix Table A11 and summarised in Figure 5(b).

6.4. *Female Suffrage and Women's Political Behaviour*

Theories on habit formation and socialisation in political participation (see, e.g., Coppock and Green, 2016; Fujiwara *et al.*, 2016; Akbulut-Yuksel *et al.*, 2020) predict that women exposed to political rights later in life are also less likely to participate in politics, and have less clear preferences about political issues than those exposed to them early in life. We draw on the cumulative data set of the Swiss Electoral Studies (Selects) between 1971 and 2011, a survey conducted in the aftermath of Swiss national elections, to test this hypothesis (FORS, Lausanne, 2021a).[22] The same notice of caution as stated above for the other survey data set also applies to the interpretation of the results here.[23]

We find that women who experienced FS later in life are systematically less likely to report having voted in the last federal election. The results further indicate that women enfranchised

[20] The sample is rather small and the data do not contain information on the canton in which respondents lived during their childhood. We concentrate on a less restrictive specification, drawing on the cantonal variation in estimation equation (1) (abstracting from labour market regions) with age fixed effects that do not differ across cantons. Moreover, we distinguish between two age ranges (instead of four) for women who were enfranchised later in their life. Panel F in Online Appendix Table A1 provides further details on the data and the variables.

[21] Regarding the specification, we pursue the same less restrictive strategy as that described in footnote 20. We further document the data and the outcomes in panel G of Online Appendix Table A1.

[22] See panel E in Online Appendix Table A1 for more details on the data and the variables.

[23] We also again concentrate on the less restrictive specification described in footnote 20.

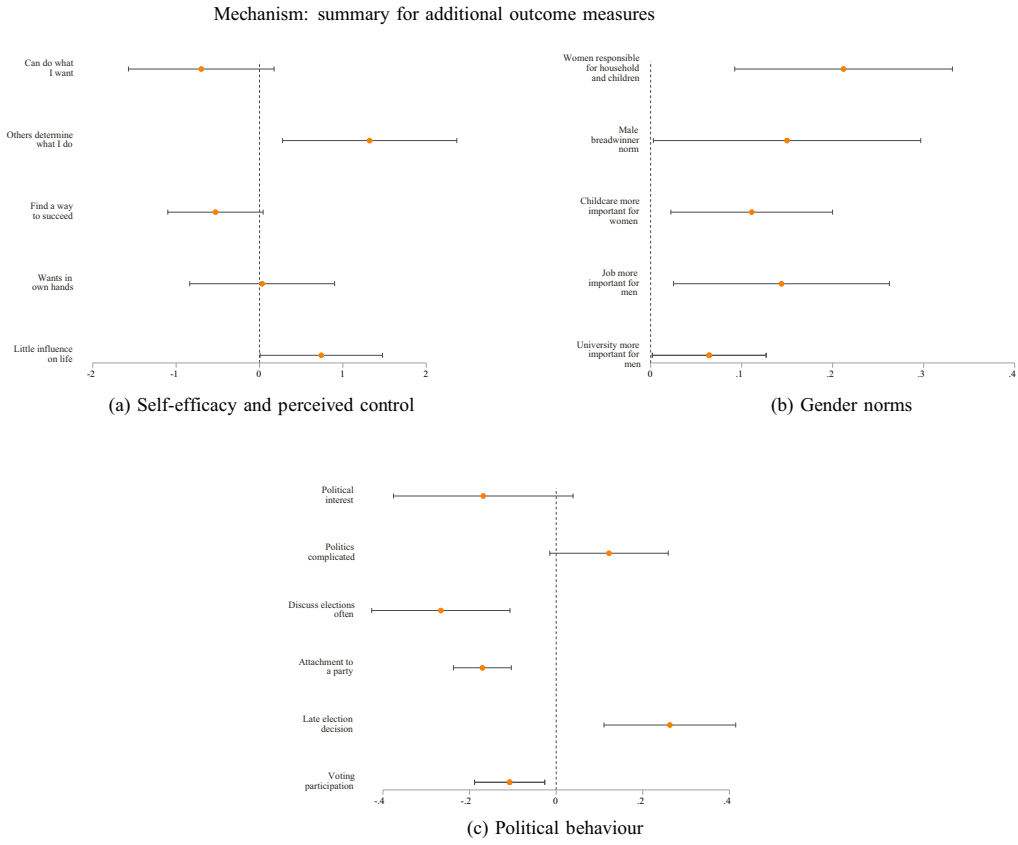


Fig. 5. *Summary of Estimates on Alternative Outcomes Regarding the Theoretical Mechanism.*
Notes: All panels depict the coefficient for the oldest group of experience (age at exposure greater than 25) and its 90% confidence bounds. Panel (a) summarises the estimates on measures of self-efficacy and perceived control (captured on a scale from 0 'completely disagree' to 10 'completely agree') in Online Appendix Table A10. Panel (b) summarises the estimates on measures of gender norms (captured with an indicator set to one if the respondent indicates that she clearly or rather agrees with the statement) in Online Appendix Table A11. Panel (c) summarises the estimates on measures of political interest and behaviour (captured based on different scales) in Online Appendix Table A12.

later make their decision about which party to vote for later, are less likely to report having a clear party attachment, are less likely to report frequently discussing elections, are slightly more likely to support the statement that politics is complicated and report a lower interest in politics. The full results are presented in Online Appendix Table A12 and summarised in Figure 5(c). While not all of these effects are statistically significant at conventional levels, they still suggest that the group of women socialised without FS have a less clear political orientation and engage systematically less in politics. This is consistent with our prior results and strengthens our conclusion that what we measure has to do with the exposure to women's right to vote.

6.5. *Female Suffrage and the Diffusion of Value Change*

If FS in the early introducing cantons had led to a value change that broadly diffused through social exchanges across space, spillovers across cantonal borders might have occurred. In the applied border design, the effect of the institutional change on emancipation would thus be underestimated. In order to assess the potential empirical relevance of the diffusion of value change, we engage in a placebo exercise and test for a hypothetical effect at the main language border within Switzerland, i.e., that between the French- and German-speaking parts. Importantly, this 'border' cuts across three cantons, i.e., Bern, Fribourg and Valais. We assume that any diffusion of values is most pronounced within a common cultural area, such as a language region. Consistent with this idea, language is found to be a major determinant of identity and culture and to be key in cultural transmission processes (Clots Figueras and Masella, 2013). The Swiss language regions are historically determined and have been rather stable since the eighteenth century. Prior research consistently shows that the French-German language border separates two culturally distinct areas, where measures of values, norms and political attitudes are found to change discontinuously (see, e.g., Eugster *et al.*, 2011; 2017; Eugster and Parchet, 2019). As described in the historical overview, the early introducing cantons are mainly in the French-speaking part of the country. If the spatial diffusion was quantitatively important, then the cohorts of women in the French-speaking municipalities in any of the cantons that know a language border would be expected to undertake systematically less traditional life choices than the women from the same cohort in the German-speaking municipalities.

In order to construct the placebo exercise, we concentrate on municipalities within a range of 3 km around the French-German language border (see Online Appendix Figure A5). We adopt the same empirical approach as before. In order to mimic the timing of the differential cultural impact, we assign the French-speaking area the earliest possible date of exposure to any impact of FS, i.e., 1959, and the German-speaking part the latest, i.e., 1971. As now there is variation in the age of exposure, within the bilingual cantons, we can augment the specification in (2) by canton-specific cohort effects to control for anything cohorts within a canton have commonly experienced.[24] The specification thus draws on variation in the age of exposure to the impact of potential value changes related to FS across language cultures within cantons and local labour markets.

Online Appendix Table A5 presents the resulting estimates for the sample of individuals in the language border municipalities. They clearly show that there is no systematic evidence for spillover effects for the probability of working, being a housewife, being married or divorced and for the probability of holding any higher education. The coefficients are not only not statistically significant, but also very small compared to our main estimates. There is one exception, i.e., the probability of working part time. In contrast to our main estimates, we now see a difference. Cohorts of women who were potentially affected from the value change later are more likely to work part time. Overall, we conclude that in our setting the diffusion of value change across institutional borders is less of an issue, and that our main estimates (with the possible exception of the decision to work part time) are likely to capture the full impact of the exposure to FS.

[24] Note that the results are virtually unchanged if we choose a less restrictive specification and forego the canton-specific cohort effects.

7. Validation of Identifying Assumption

We argue that FS affected attitudes and norms contributing to societal change. However, evolving attitudes about women's role in society might well have driven the introduction of FS in the different cantons, as well as the outcomes in women's life choices that we observe in our empirical analysis. In order to capture the effect of exposure to FS on norms and behaviour in this bidirectional relationship, we exploit the variation in the age of exposure to FS, drawing only on the variation within border groups and local labour markets, conditioning on an extensive set of fixed effects controlling for a large set of potential confounders. Any remaining confounding societal change would have to be cohort-canton specific within locally close municipalities to explain our statistical findings. This is the relevant level where we cannot control for unobserved factors, as this level coincides with that from which we derive our identifying variation.

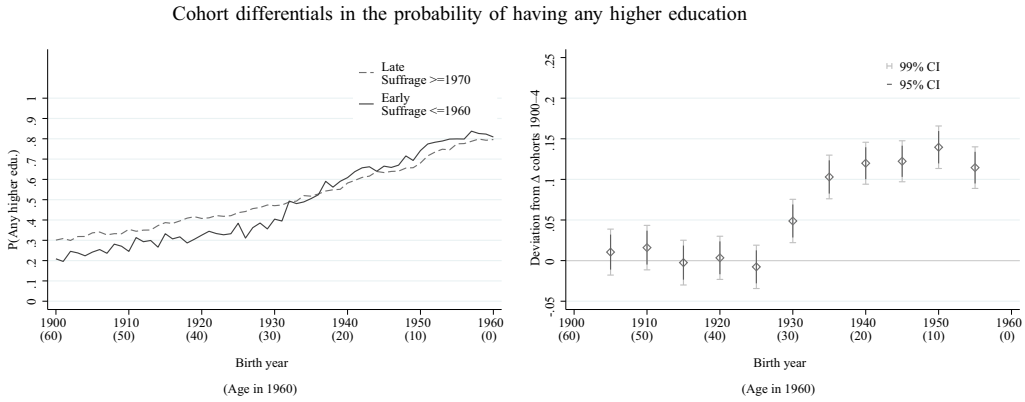
While we cannot fully rule out a violation since we cannot observe all historical events, in this section we discuss three additional validity checks of our main identifying assumption, i.e., that cohorts across cantons would have evolved in parallel if not for the introduction of FS. Specifically, we (*i*) test for parallel cohort trends on outcomes that stabilise early in life, (*ii*) check for cantonal pre-trends in historical cantonal data and (*iii*) present evidence validating that there was no direct effect of FS on policy outcomes.

7.1. *Parallel Cohort Trends*

Our identification strategy is based on the assumption that the cohorts across cantons would have evolved in parallel if FS had not been introduced. This assumption is not directly testable, as we cannot observe individuals in such a counterfactual context. However, the fact that some outcomes stabilise rather early in life in combination with the idea that the impact of the exposure to suffrage is stronger the younger an individual is, leaves scope to test for pre-trends in cohort outcomes within border groups across cantons.

Outcomes like educational attainment will primarily change up to a certain age and much less thereafter. Cohorts already older at the time of the introduction of FS should thus be less affected by the constitutional change. If our assumption holds, their outcomes are not expected to show a diverging trend in early and late introducing cantons. We follow this line of reasoning and compare within-cohort differences in female outcomes for the set of border municipalities across two sets of cantons: those introducing FS early (up to 1960) and those introducing it late (after 1970). If the assumption of parallel cohort trends holds, we should not observe that older cohorts in the two groups of cantons diverge systematically (the cohort differential should be fairly stable). It should only diverge for those cohorts that were 'young enough' to respond. As labour market participation is an outcome that can be affected up to a higher age, it is not suitable as an outcome for this analysis.

Figure 6 visualises the average development of the probability of having any higher education within both groups and over cohorts (in the graphs on the left), and shows formal tests for the change in the average differential between the outcome of the two groups with respect to individuals born between 1900 and 1904 (the reference group; in the graph on the right). According to our assumption of parallel trends in early and late introducing cantons, we would expect that the differential does not change systematically for those cohorts *too old* to respond to the treatment, but would gradually diverge for those cohorts that were *young enough* to respond,



(a) Average probability of having any higher education

(b) Development of cohort differentials

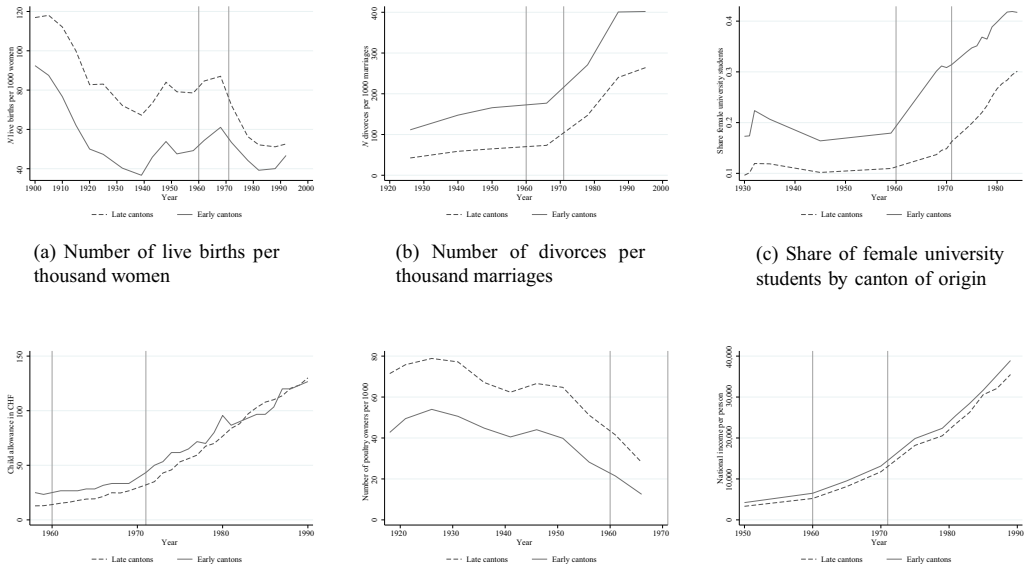
Fig. 6. *Evolution of the Probability of Having Any Higher Education for Cohorts of Swiss Women in Cantons Introducing FS Either Early (up to 1960) or Late (after 1970).*

Notes: Panel (a) presents the raw averages for both groups by cohorts. Panel (b) visualises the deviation of the difference between the early and late groups of later cohorts from cohorts born between 1900 and 1904 (reference group). The results presented are based on the border design sample.

before it might converge again for cohorts in which all individuals were treated early in life.[25] The *x* axes of the figures presented mark the year of birth and age in 1960, the last year FS was introduced in cantons that we define as early adopters.

Educational attainment is likely to stabilise after the age of about 25, or at the latest after the age of 30 for higher education. Figure 6(a) depicts the fraction of Swiss women with any higher education across cohorts born between 1900 and 1960. We see that, overall, women in the border groups of *early* adopting cantons are less likely to have any higher education (a baseline difference that is accounted for by the border group and canton effects in our main specification). Moreover, the average probability of having any higher education moves reasonably in parallel for the cohorts in the two groups of cantons up to the cohort born in about 1930. For cohorts thereafter, the probability of having any higher education seems to increase to a greater extent in the *early* adopting cantons. Figure 6(b) shows the corresponding test, i.e., the development of the cohort differentials between *early* and *late* adopting cantons in five-year bands, using the difference for individuals born between 1900 and 1904 as reference. The difference remains quite stable and there is no systematic divergence from that in the reference group up to the cohort born between 1930 and 1934, with women being between 30 and 25 years old in 1960. The difference decreases (the estimated differential increases) for younger cohorts, indicating that women in the *early* adopting cantons became more likely to achieve a higher educational level once exposed to FS. This divergence for the cohorts born between about 1930 and 1950 is in line with our main hypothesis and the findings in our main specification. It is the young women at the time

[25] In order to estimate the development of the differential between early and late introducing cantons, we group cohorts in bins of five birth years (1900 to 1904, 1905 to 1909, 1910 to 1914, ...). We then estimate any divergence for the respective group with regard to the difference between late and early introducing cantons and cohorts born between 1900 and 1904, which form our reference group. The estimated specification is $Y_i = \alpha_0 + \mu Early + \sum_{k\neq(1900\text{–}4)}(\beta_k \mathbb{1}_k) + \sum_{k\neq(1900\text{–}4)}(\gamma_k \mathbb{1}_k \times Early) + \epsilon_i$, where Y is the dependent variable, $Early$ is an indicator set to one for early introducing cantons, and the $\mathbb{1}_k$ are the indicators for the cohort groups. Consequently, the γ indicate the deviation from the difference in the reference group. These coefficients are displayed in the graph on the right.



(a) Number of live births per thousand women

(b) Number of divorces per thousand marriages

(c) Share of female university students by canton of origin

(d) Child allowance

(e) Number of poultry holders per thousand

(f) National income per capita

Fig. 7. *Cantonal Trends of Various Outcomes for Cantons Introducing FS Early (up to 1960) and Late (after 1960).*

Notes: These graphs show the average historical outcomes of the two groups over time. The historical outcomes and the sources are described in panel C of Online Appendix Table A1.

of the introduction of FS who are affected by the institutional change. The observation that the educational outcomes for cohorts who were already older (when FS was introduced) evolve in parallel speaks for the validity of the assumption that there were no strong pre-trends in women's educational attainment.

7.2. *Cantonal Pre-Trends*

An additional way of corroborating the parallel trends assumption is to check for pre-trends in relevant cantonal outcome measures. If there were, for example, technological developments or other changes that only affected a specific group of cantons and led to the introduction of FS, then the counterfactual scenario of parallel development might not be realistic. In order to address this concern, we check for the parallel development of some relevant cantonal outcome measures that are available for the periods before the introduction of FS in historical statistics. The investigated variables are described in panel C of Online Appendix Table A1. As municipality-level data are not available, we cannot concentrate on the set of border municipalities in this analysis. Note that any level differences we observe in these figures at the cantonal level are not a concern as they are accounted for in our empirical specification. We are primarily interested in whether we see diverging trends.

Panel (a) in Figure 7 shows the average number of live births separately for cantons introducing FS early (before or in 1960) and cantons introducing it late (after 1960). While the birth rate is on average lower for the early adopting cantons, it seems to evolve mostly in parallel up to 1970. Panel

(b) depicts the respective evolution of divorces. While the divorce law is federal law, the divorce rate is still higher in early adopting cantons. However, it evolves mostly in parallel in both groups of cantons. Panel (c) turns to the development of women's education, and shows the proportion of female university students by their canton of origin. While the early adopting cantons start at a higher level of female students than the late adopting cantons, the proportions evolve in parallel until the former introduce FS around 1960. Thereafter, the fraction of female students from these cantons increases. Panel (d) presents the average amount of child allowance in the two groups of cantons. This is one of the few direct policy measures available over time. We do not observe a strongly converging or diverging trend in the allowances between the two groups before FS was introduced. Panel (e) turns to a more general societal development and possible competing driver of female emancipation. The alternative explanation for our findings would be that urbanisation accelerated and traditional family models dissolved earlier in cantons introducing FS early rather than late, and that this led to both the extension of suffrage and changing gender roles. Such developments are, of course, hard to capture quantitatively, especially in a historical perspective. One possible—perhaps unusual—proxy measure that is available is how many families hold poultry. Poultry keeping is strongly related to traditional lifestyles and is normally the duty of women. Using the number of poultry holders per thousand inhabitants as an approximation for prevailing traditional gender roles and looking at its development over time, we find that it evolves rather in parallel in both groups of cantons, while the level is somewhat higher in the late adopting cantons. Finally, it is conceivable that some economic shocks affected both the introduction of FS and women's roles in society. Panel (f) delineates the development of national income per capita in both groups of cantons. They evolve roughly in parallel, not indicating any major deviations in trends that might explain our findings. Online Appendix Figure A8 presents the estimated change in differences between the two groups for all the six cantonal outcome measures.

Overall, this cantonal trend perspective indicates that cantons introducing FS early rather than late tend to be more 'modern' regarding the specific indicators considered in this section. None of the level differences can have driven our results, however, as border design resolves the level differences. Moreover, we do not observe striking deviations in the trends across the two groups of cantons preceding the introduction of FS, which would suggest important confounders.

7.3. *Policy Effects of Suffrage Extension*

Another potential threat to our identifying assumption are policy effects of FS. This would be an alternative explanation for our findings if cantonal policy changes were induced by the introduction of FS, which affected the corresponding cohorts in a specific manner, leading to the observed patterns in life choices. Such policy effects would pose a potential problem in the interpretation of our results, as they would prevent us from distinguishing between the effects of political empowerment per se and the indirect effects via the impact on cantonal policies. In that regard, it comes as an advantage that the institutional changes, with the first cantonal introduction of FS in 1959, occurred comparatively late. Major developments in public health, social security and education policy had already taken place, reducing the risk that policy changes explain the patterns observed in life choices. In line with this reasoning, and contrary to studies evaluating the policy impact of FS in the United States that document an increase in spending once women are granted the right to vote (see, e.g., Lott and Kenny, 1999; Kose *et al.*, 2021), similar evaluations

for Switzerland fail to document fiscal responses (see, e.g., Stutzer and Kienast, 2005; Krogstrup and Wälti, 2011).

Online Appendix D presents a state-of-the-art re-evaluation of the prior findings. In an event-study framework, we do not find any impact of FS on relevant electoral outcomes, i.e., the share of mandates for the Social Democrats in cantonal parliaments. In a similar vein, we furthermore also fail to find any impact of FS on total cantonal per capita spending and the level of child allowances. This makes us confident that the Swiss case offers a unique opportunity to learn about the emancipating effects of FS absent any sharp confounding policy changes.

8. Robustness

This section assesses the robustness of our estimates with respect to (*i*) alternative age cutoffs, (*ii*) the potential bias from selective mobility and (*iii*) sensitivity to correction for a small number of clusters. It furthermore demonstrates the power of our fixed effect strategy to control for spurious correlations.

8.1. *Alternative Age Cutoffs*

While we set the age of 17 as an age cutoff in our empirical analysis based on theories of socialisation, there are, of course, reasonable alternative choices. Online Appendix Table A6 presents our main results based on an age cutoff of 13, using women experiencing FS before the age of 13 as the reference group. The results are qualitatively unchanged from those presented in the main analysis. In addition, Online Appendix Figure A7 presents the estimated coefficients for the probability of working iterating the reference group to an age of exposure between below 17 to below five. The implied differential life choices remain similar, irrespective of the particular threshold.

8.2. *Sorting: Female Suffrage and Migration*

In order to specify the age of experience correctly, in our specific setting, we exclude women who left their birth canton. For them, we only know that they no longer live in their canton of birth, but lack more specific information about their origin and moving behaviour. Accordingly, a concern for the interpretation of the observed empirical patterns in women's life choices might be that they reflect spatial sorting triggered by the staggered introduction of FS. A possible scenario that would lead to comparable effects turns out to be quite complicated however.

Section E in the Online Appendix presents a test for such a strategic selection. Our test is based on the information on whether a woman still lives in the canton where she was born. The estimates do not support selective mobility as a potential driver of our estimates. We conclude that it is rather unlikely that migration reactions drive the documented differences.

8.3. *Robustness of Inference*

As our estimates only cover 17 cantons, our clustered standard errors might over-reject the null due to the small number of clusters. We check whether our main estimates remain robust if we apply the Cameron *et al.* (2008) cluster wild bootstrap procedure. The results are reported

in Online Appendix Table A14.[26] While we lose some power in some estimates, most results remain statistically significant at the 90% level. The exception is the estimates for educational attainment. Some coefficients fall slightly below conventional levels of statistical significance with the alternative inference.

8.4. *Power of the Fixed Effect Strategy*

We validate that the chosen fixed effect strategy has the power to control for spurious correlations due to potential confounds by re-estimating our main model on a placebo outcome. We would not expect that the age at which women were exposed to FS has a systematic impact on the probability of them being widowed (conditional on ever been married). Still, when estimating the simple correlation without any fixed effect, we see a sizeable positive correlation. The later in life a woman was exposed to FS, the more likely she is to be widowed (see column 1 in Online Appendix Table A13). However, women experiencing suffrage later are, on average, also older when they appear in our sample. Controlling for age effects therefore considerably reduces the observed correlation, though it remains systematic (columns 2 and 3). Independent of FS, the women treated late in our sample, on average, are more likely to be from older cohorts. They might be more likely to be widowed for other reasons, such as being, on average, much younger than their husbands. Including cohort effects should address this issue. Column 4 shows that cohort effects erase any systematic correlation. As expected, the age of exposure to FS does not play a role in the likelihood of being widowed. The remaining fixed effects do not seem to matter much for this placebo outcome (columns 5 to 7). This empirical exercise demonstrates that there is a potential for spurious correlations in the relationship between women's outcomes and their age of exposure to FS. However, our empirical strategy is capable of controlling for a wide range of confounding factors.

9. Conclusion

Changes in women's lives have, to a large extent, marked the social and economic transformation in countries with developed economies over the last century. For the United States, Goldin (2006) termed the transformation of women's employment, education and family as a 'quiet revolution' (p. 1) that led to the change in women's roles in society and households, i.e., '[i]t was a change from passive actors, who take the income and time allocation of other members as given, to active participants who bargain somewhat effectively in the household and the labor market' (p. 2). Most of this development is understood as a consequence of technological advances in the economy, but also in medicine, especially with the contraceptive 'pill'.

In this paper, we emphasise the forces unleashed by a sometimes not-so-quiet revolution, i.e., the enfranchisement of women. The main argument is that FS not only led to political empowerment, but also increased women's perceptions of control in the private sphere, expanding the conceivable opportunity set for them and their daughters in the short and long runs. We exploit the staggered introduction of FS across the Swiss cantons that led to the situation that women born in the same year, but living in different cantons, were allowed to vote at different points in time. This produces variation in the age since which women were exposed to FS, which forms the

[26] More precisely, we apply the cluster wild bootstrap procedure implemented in the stata boottest package (Roodman, 2015).

basis of our identification approach. Specifically, we study how socialisation in an environment in which women hold formal democratic participation rights changed women's lives in terms of their labour force participation, their educational attainment as well as their marital status. The fact that the late empowerment of women in the political sphere did not lead to discernible policy consequences in the Swiss case, allows us to abstract from many potential alternative channels other than the impact of exposure to FS on life choices.

Based on Swiss census data and exploiting the variation within border groups of municipalities, we find that women who experienced the introduction of FS later in life show a lower probability of carrying out paid work compared to women exposed to FS early. Furthermore, we observe that women exposed to FS later have a higher probability of being a housewife and are more likely to marry and to stay married. Finally, women who were socialised in an environment without FS are less likely to achieve higher levels of education. We undertake a number of supplementary analyses to validate our main identifying assumption of parallel cohort trends and to assess how likely it is that alternative forces explain our results. We do not find any indication for confounding developments that might explain our findings. Our evidence, however, suggests that the changes in women's life choices might have partly arisen due to a reinforcement effect working through men's attitudes and complementing the direct effects of the empowerment. In a series of additional analyses based on survey data, we observe that the differential exposure to FS is consistently mirrored in attitudes, norms and political behaviour. A later adoption of FS in a women's life is associated with a lower level of perceived control, more traditional gender norms and less involvement in politics.

While previous research strikingly documents the long-term persistence of gender norms, often due to their institutionalisation in unequal property rights, our results suggest that changes in constitutional rights have the potential to trigger a fundamental transformation in these norms in the short to mid-terms. With women's enfranchisement, the playpen was rendered wide open.

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Additional Supporting Information may be found in the online version of this article:

Online Appendix
Replication Package

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