

# Leader-Induced Cultural Change: How Vatican II Triggered Female Enfranchisement\*

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## Abstract

This paper examines whether and how leader-induced cultural change materializes. The analysis exploits the unexpected and rigid modernization of the Catholic doctrine induced by the Second Vatican Council (1962-1965). To assess the impact of the Council, this paper utilizes a novel panel data pertaining to the Swiss female enfranchisement process (1919–1983). The results show that compared to the period before Vatican II, men in Catholic municipalities increased their acceptance to enfranchise women around four percentage points stronger than men in Protestant municipalities. The results highlight the role of religious leaders as an additional and swifter channel for driving cultural change.

**Keywords:** cultural change, democratization, cultural leadership, female suffrage

**JEL codes:** N34, Z12, D72

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# 1 Introduction

Persistence of cultural traits has inspired many studies on how culture impacts socio-economic outcomes.<sup>1</sup> Most of these studies define culture as "those customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation" (Guiso, Sapienza, and Zingales 2006). A well-established driver of cultural change is inter-generational transmission, which affects cultural change at a slow pace (Bisin and Verdier 2001 or Guiso, Sapienza, and Zingales 2008). This paper, however, examines a new channel through which cultural change can be initiated in a swifter manner. It analyzes whether and how credible statements made by cultural leaders materialize in the revealed preferences of community members. This paper is based on a novel dataset covering the Swiss female enfranchisement process, which lasted almost an entire century. The analysis investigates how the unexpected changes in the Catholic doctrine, which were triggered by the Second Ecumenical Vatican Council (henceforth, Vatican II), influenced the willingness to enfranchise women in Catholic municipalities when compared to Protestant municipalities.

Vatican II introduced major unanticipated reforms in the Catholic doctrine such as commitment to human rights, democratic diversity, recognition of other religions and modernization of religious life. In order to analyze whether and how leader-induced cultural change manifests itself, this paper collects and uses a new dataset combining referendum outcomes on female enfranchisement (1919–1983) and socio-economic factors at the municipality level. This setting allows to investigate voting patterns of male citizens in Catholic municipalities in comparison with Protestant municipalities. The contribution of this paper is threefold: First, the results of this paper point towards an additional channel of cultural change, one that is activated by cultural leadership.<sup>2</sup> Second, it provides evidence that cultural change may, under specific conditions, evolve more swiftly than it is often assumed to. Third, this paper sheds light on the role of Catholicism on Swiss women's suffrage.

The enfranchisement of Swiss women occurred surprisingly late. At the federal level, women were enfranchised in 1971 after two popular referendums. At the cantonal level, disenfranchisement of women even lasted until 1990, when the last canton

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1. See for example Alesina and Giuliano (2015); Luttmer and Singhal (2011); Tabellini (2010); Guiso et al. (2009); or Miller and Shanks (1996).

2. Recently, the impact of Catholic leaders has garnered attention (Bassi and Rasul 2017 or Prummer and Siedlarek 2017).

was forced to fully enfranchise women. Political debates, campaigns, and voting patterns used to be shaped by conservative and traditional gender roles, which were similar to those within the Catholic milieu (Altermatt 1991; Hediger 2004 or Studer 2015). There are at least three reasons why the Swiss female enfranchisement process serves as a useful ground to analyze whether and how leader-induced cultural change materializes: (i) It deals with an important case of democratization and women's empowerment, (ii) The data contain outcomes from repeated referendum votes on the same topic, which allows for the analysis of changes in actual voting behavior over time, and (iii) Switzerland offers a rich variety of Catholic and Protestant municipalities.

Catholicism, in general, hampered the enfranchisement of women. This is illustrated by the skeptical perspective of the Catholic Women's Association, the disapproval of the Catholic Party, and the opposition some Catholic bishops showed toward enfranchising women (Ruckstuhl 1989, Hediger 2004, p.49 or Bertocchi 2011). This paper sheds light on the conditions under which the restraining effect of Catholic culture on the introduction of women's suffrage evaporated. In 1959, Pope John XXIII was surprisingly elected at the age of almost 80. Unexpectedly and without the knowledge of the Curia, he called Vatican II to address the relationship between the modern world and the Catholic Church. An Eucumenical Council has the power to fundamentally redefine what it means to be Catholic. In this spirit, Vatican II led to the initiation of major reforms in Catholic doctrine and religious life.<sup>3</sup> It dissolved the strong connection between politics and religion by recognizing human rights and the legitimacy of political pluralism and by granting additional rights to the laity (Anderson 2004). The changes induced by Vatican II were highly visible to the members of the church. The most obvious change manifested itself five years after the Council's announcement, when the service was celebrated in the local tongue instead of Latin (Alberigo and Sherry 2006).

Employing a difference-in-differences approach, this paper compares the revealed preferences of men in Catholic and Protestant municipalities over the period 1919–1983. According to the estimation results, Vatican II increased the acceptance toward enfranchising women in Catholic municipalities by around four percentage points stronger in comparison with Protestant municipalities. This result is robust to a large number of robustness checks and the exclusion of alternative explanations, such

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3. During 1962–1965, four sessions, with up to almost 3,000 participants, were conducted in Rome. Besides the bishops and Periti, members of other Christian churches were also invited as observers.

as the 1968 student movement, Catholic-specific time trends, an increase of Catholics due to Vatican II induced converters, or placebo effects. Besides the role of cultural leadership at the global level, this paper also sheds light on the role of local cultural leaders by looking at two types of municipalities: First, municipalities having a Swiss Guardsman, which act as the Pope’s military service, during the Vatican II period. Second, municipalities with supporters of the anti-modernist and Vatican II skeptical Pius brotherhood.<sup>4</sup> The results provide evidence that local leaders are a non-exclusive mechanism that could drive the results of this paper. This paper indicates that owing to a persuasive statement of the cultural leadership and the vigorous, visible changes in the Catholic doctrine after Vatican II, attitudes towards women’s political rights changed in the Catholic regions. Thus, cultural influence may evolve abruptly, thereby challenging the view that culture is the most persistent institution (Williamson 2000).

A potential policy implication of the presented results is that cultural leaders might not only preserve cultural traits (Prummer and Siedlarek 2017 or Verdier and Zenou 2018), but could also trigger cultural change. In the spirit of this paper organizations, such as central committees of religious groups, are promising tools when it comes to acting as transmission channels of both cultural change and cultural preservation.

This paper is organized as follows. The next section briefly reviews the related literature. Section 3 provides a short overview on the role of Catholics in the enfranchisement process and describes the main characteristics of Vatican II. Section 4 presents the structure of the dataset, while section 5 introduces the empirical strategy and offers an overview of the descriptive statistics. Section 6 presents the results, discussions, robustness checks, and discusses the role of cultural leaders. Section 7 presents the conclusion of the paper.

## 2 Related Literature

A sizeable portion of the cultural literature emphasizes the importance of persistent cultural traits in explaining preferences, norms, and beliefs. Throughout this literature, religion has gained substantial attention.<sup>5</sup> In order to investigate the long-term effects of persistent cultural traits on economic outcomes, such as civic capital (Guiso, Sapienza, and Zingales 2016), trust (Putnam, Leonardi, and Nanetti 1993), or self-efficiency beliefs (Guiso, Sapienza, and Zingales 2016), several stud-

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4. The Swiss Guard acts as the Pope’s military service and consists of Swiss Catholic men.

5. For a broader review, see Bisin and Verdier (2011).

ies have been motivated by the experiences of free city-states in medieval Italy.<sup>6</sup> Other studies exploit the persistent differences between immigrant and native populations.<sup>7</sup> A prominent explanation for the persistence of cultural influence is the inter-generational transmission channel. Beliefs are acquired initially through cultural transmission and are slowly updated from generation to generation. This process is often characterized by risk-averse parents, who transmit conservative values to their children in order to prevent them from committing costly mistakes (Guiso, Sapienza, and Zingales 2008). An alternative concept is the imperfect empathy of parents, as their altruism is often biased toward their own preferences (Bisin and Verdier 2001). Complementary to this approach is a recent strand of theoretical literature that consider the role of cultural community leaders. Prummer and Siedlerek (2017) explains persistent cultural differences by examining strategic incentives of community leaders, whereas Verdier and Zenou (2018) study the dynamics that occur when cultural leaders are integrated into the inter-generational transmission model. However, in these models, the preferences of cultural leaders are exogenously given. In contrast, the reforms and changes induced by Vatican II are a case of leader-induced cultural change. Moreover, this paper is among the first to empirically analyze the effect of leader-induced cultural change.

This paper also contributes to the literature on female enfranchisement. The drivers and potential channels behind the extension of political rights have gained substantial attention from economists. The effects of a threat of revolution (see e.g. Acemoglu and Robinson 2000 or Aidt and Franck 2015), political competition (e.g. Lizzeri and Persico 2004; Llavador and Oxoby 2005 or Przeworski 2009), and the role of war (Hicks 2013 or Polishchuk and Syunyaev 2015) on enfranchisement have been discussed in the literature. However, only a few empirical studies have focused specifically on the determinants of female enfranchisement. Bertocchi (2011) offers a cross country analysis of socioeconomic factors and finds that Catholicism has a negative effect on female enfranchisement. Braun and Kvasnicka (2013) concentrate on the United States in the years 1869 to 1920 and provide evidence that men are more likely to expand the franchise in states with a relative scarcity of women. The role of democratic institutions has also been discussed in the literature (Hicks 2013 or Koukal and Eichenberger (2017)).

Finally, this paper connects to the scant literature that treats Vatican II specifically.

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6. Guiso, Sapienza, and Zingales (2016) or Putnam, Leonardi, and Nanetti (1993) for a detailed discussion.

7. See e.g. Luttmer and Singhal (2011), Fisman and Miguel (2007), or Fernández and Fogli (2009).

Applying the inter-generational transmission idea, Guiso, Sapienza, and Zingales (2003) analyze the World Value Survey data covering the period 1981–1997 and mention that Catholics who grew up after 1960 seem more trusting and less intolerant. Following an instrumental–variable approach that uses Vatican II as an exogenous shock, Gihleb and Giuntella (2017) examine the effects of Catholic schooling on educational achievement in the United States and find no positive effects of Catholic schooling on pupil performance. A recent paper from Andersen and Jensen (2019) evaluates the effect of Vatican II on worldwide democratization and finds a positive effect developing rather slow from 1980 onward.

Despite the extensive literature on the persistence of cultural traits and the rather slow change of cultural influences, little is known about swifter drivers of cultural change. Two different aspects are therefore highlighted: The paper examines the question of how swiftly culturally shaped preferences react to credible statements of cultural leaders. Second, it also offers insights into the effect of Catholicism on Swiss women’s suffrage.

### **3 Historical Background**

Switzerland has established a democracy in which popular referenda enable citizens to regularly influence the work and decisions of the parliament and the government. Popular votes frequently take place at all the federal levels and complement representative democracy (Frey 1994; 2005; or Ladner 2012). In contrast to most other democratic countries, women’s suffrage was not granted by the national parliament. Instead, the entire male electorate decided via popular votes whether they wanted to enfranchise women. Due to the federal structure, suffrage was instituted at the cantonal and federal levels separately. In each canton, the male electorate decided on the matter of enfranchising women for cantonal and municipal decisions. Votes were held on women’s suffrage to be granted only at the cantonal level, only at the municipal level, or at both levels (integral) and on delegating the decision to enfranchise women to the municipalities (optional). In all of these votes, the proposal to enfranchise women was accepted if a majority of male voters were in favor. While the first cantons enfranchised women for cantonal and municipal policy decisions in 1959, i.e., woman could vote in cantonal and municipal elections and referendums, the last canton fully enfranchised women in 1990, after being forced to do so by the federal court. Compared to other European and non-European countries, this is exceptionally late. This procedure resulted in approximately 100 cantonal votes over the period 1919 to 1990 and two federal votes in 1959, when women’s

suffrage was rejected, and in 1971, when it was accepted. The structure of the Swiss enfranchisement process allows for the observation of the evolution of acceptance towards enfranchising women over time. A limitation to this data is that individual referenda are not fully identical, as referendums occurred in different cantons, at different dates, and concerned different types of female enfranchisement.

### 3.1 Catholicism and Female Enfranchisement

In the pre-Vatican II period, Catholics' beliefs pertaining to the political and social order were inseparably associated with the position and ideology of the church. According to Altermatt 1991, this relationship was also reflected in Swiss voting patterns. Although the Pope did not specifically oppose women's suffrage, conservative Catholic men and Catholic authorities in Switzerland predominately adopted a skeptical position toward enfranchising women (Studer 2015). Interestingly, Catholic women also opposed the extension of suffrage in the beginning. In 1929, a petition in favor of female enfranchisement was launched and later signed by 13 supporting women's associations. The Catholic Women's Association was the only association that refused to sign the petition and instead expressed its opposition (Ruckstuhl 1989, p.33). This view was shared by at least some of the Swiss bishops (Hediger 2004, p.49). When Pope Pius XII sent an unprecedented message to the members of various Catholic Women's Associations in Europe, indicating that a woman "must compete with men for the good civic life, in which she is, in dignity, equal to him" (Marchione 2004, p.65), Franziskus von Streng, a Swiss bishop, prevented the distribution of the original version of this papal statement in Switzerland (Ruckstuhl 1989, p.50). The traditional role for women retained its dominant position in the Catholic doctrine. This dominance is reflected in a statement of Pope Pius XII, which dates back to 1956, where he emphasizes the priority of motherhood among female actions:

"...There is no field of human activity that must remain closed to woman. Her horizons reach out to the regions of politics, work, the arts, sports—but always in subordination to the primary functions fixed by nature itself." (Marchione 2004, p.65)

Franziskus von Streng's action of preventing the publication of the statement in 1945 supports the view that Catholic forces in Switzerland exhibited relatively conservative attitudes, even compared to Catholics in other countries. Altermatt (1991) characterizes the Swiss Catholic milieu as dominant in all fields of Catholic life. In short, there is evidence that in the Catholic milieu, traditional role models for men and women were widespread and appreciated. This assumption is also supported by

the few empirical studies on determinants to women's enfranchisement (Bertocchi 2011 or Koukal and Eichenberger 2017).

### 3.2 Vatican II — Swift Changes in the Catholic World

Vatican II deeply affected the manner, the content, and the definition of being Catholic. In 1959, less than 90 days after his election, Pope John XXIII made an unexpected announcement – the decision to conduct the Second Vatican Council.<sup>8</sup> Given that Pope John XXIII was elected at the age of almost 80 years and was expected to be a transition pope, this statement was a surprise to the Curia, not in the least because even the Holy Office was unaware of this visionary papal plan.<sup>9</sup> Vatican II consisted of four sessions in the period of 1962 – 1965, all of which were conducted in Rome. Around 3,000 participants from all over the Catholic world aimed to work out how the Catholic church could adapt to the contemporary world. Among the participants were bishops vested with voting rights, Periti, who were expert Roman Catholic theologians, observers, and, from the second period on, listeners, who were of the laity, and included women as of the third period. Although the announcement of Vatican II was a sensation, expectations regarding its direction and power were uncertain *a priori*. This was reflected in the first sessions, which were characterized by the opposing positions of conservative and reform-oriented powers. According to Wilde (2007, p.5), a key moment of Vatican II occurred in the first session, when progressive leaders surprisingly managed to win a close vote. From that point on, a spirit of possible changes was in the air (Greeley 2005). After the completion of the crucial first session, Pope John XXIII passed away. In September 1963, Pope John VI opened the second session. Various Council documents reflect comprehensive modernization, vigorous debates on changes in centuries-old traditions, and dogmatic renewals (Wenzel 2014). A significant outcome of Vatican II was the Pastoral Constitution on the Church in the Modern World, "*Gaudium et spes*," which discusses the relation of the Church to the world. For the first time, the church awarded autonomy to the political sphere by declaring the independence of church and politics and thereby accepting democratic diversity among Catholics

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8. According to Alberigo and Sherry (2006) the original wording of Pope John XXIII was: "Standing before you I tremble somewhat with emotion but am humbly resolute in my purpose to proclaim a twofold celebration: a diocesan synod for the city of Rome, and a general Council for the universal Church."

9. An episode mentioned by Alberigo and Sherry (2006, p.6) offers anecdotal evidence for the surprising character of the announcement. Prior to the declaration, the Pope invited the cardinals and monks to St. Paul's. A cardinal reacted with the following statement: "What sort of important thing could he say on such an occasion? He will give an exhortation to the monks, nothing more" (p.6).

(Baumgartner 2013).

Another manifestation of "*Gaudium et spes*" was the recognition and protection of human rights, the appreciation of other religions and democracy, and the neglect to support authoritarian orders (Anderson 2004, pp. 198-199).<sup>10</sup> "*Gaudium et spes*" is also remarkable from a gender perspective: It acknowledges that women should have and insists on equal rights and factual equality (Meiers 2012). Various bishops supported this position by emphasizing the "obligation of the Church to promote the role of women in society" (O'Malley 2010, p.235). While women were absent in the early days of the Council, in 1963, the Council focused on women as a key concern of modernization. As of the third session, female auditors were allowed to participate in the Council and contributed in working groups (Meiers 2012). According to Süßmuth (2013), Catholic women were especially interested in the laity's position. Therefore, an important element of the liturgical renewal was the upgrading of the laity's position, offering more possibilities to male and female laypersons in religious life. Together with "*Gaudium et spes*," the constitution "*Sacrosanctum Concilium*"<sup>11</sup> brought the most visible and fundamental changes in the Catholic liturgy. Five years after the announcement of the Council, Catholics around the world celebrated the Holy Mass in their mother tongue, with the priest facing the congregation (Wilde 2007). Beyond its importance within the Catholic religious sphere and life, Vatican II was also highly visible in the media. In 1962, Pope John XXIII was even elected *Time* magazine's Man of the Year.

## 4 Data and Descriptive Statistics

This section introduces the structure and the characteristics of the dataset used in this study and provides a descriptive analysis of the same.

### 4.1 Data

The empirical analysis is based on a self-collected municipality-level dataset on vote outcomes on female enfranchisement (1919–1983).<sup>12</sup> The dataset consists of approximately 10,000 observations, which stem from 67 votes in 2,200 Swiss municipalities. The data consists of two federal and 65 cantonal referendums and measure the aggregated preferences of Swiss men with regards to enfranchising women.

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10. See declaration "dignitas humanae".

11. This sacred Council

12. The covered time span is 1919–1983, as there is no municipal data for the last votes on enfranchising women. Those votes were held in the canton of Appenzell Innerhoden, which holds cantonal assemblies; therefore, municipal voting data is only available for the two federal votes.

A list of implementation dates for the lower governmental levels (municipal and cantonal) is presented in Table A1 in the appendix. Table A2 provides an overview of all votes covered by the dataset. More than a third of the observations stem from the two federal votes, while the remaining observations cover cantonal votes. Cantonal votes themselves can be divided as follows: votes that aimed at mandatory (6 votes) or optional (10 votes) women’s suffrage granted at the municipal level; (37) integral votes that aimed at introducing women’s suffrage at the cantonal and the municipal level simultaneously; and (6) cantonal votes that aimed at enfranchisement at the cantonal level only. Finally, (6) votes on limited voting rights for women, targeted at specific topics such as school issues, were conducted. As cantonal votes are not centrally listed, there is a need to obtain an overview of the cantonal vote history. Many but not all the votes on female suffrage are listed by Ruckstuhl (1989). This list served as starting point for the data collection. The data was collected and digitized from different sources, depending on the specific organization of a canton or vote.

The explanatory variables are mainly taken from the decennial census<sup>13</sup> providing information about municipal sociodemographic characteristics, such as the share of German-speaking population<sup>14</sup>, population size, or the share of Catholics. A detailed overview is given in Table 1. In order to account for the institutional setting of a municipality, I use data from Ladner (1988), indicating if a municipality uses a local town meeting (direct democracy) or a local parliament (representative democracy).<sup>15</sup>

### **Endogenous Variable and Measure of Catholicism**

The endogenous variable  $Y_{mt}$  denotes the "yes" share of male citizens that favored enfranchising women in municipality  $m$  at time  $t$ . Descriptive statistics thereof are listed in Table 1.

The decennial census offers information about the religious composition of Swiss municipalities. The residential population is composed of the Swiss and the foreign population, whereof Swiss men above the age of 21 are part of the electorate. In the period observed, more than 95 percent of the residential population claimed membership in a Christian church.<sup>16</sup> Therefore, the counterpart of a Catholic municipality is either defined as a Protestant municipality or measured with the

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13. Before 1970, the census data was only available as paper printouts and needed to be digitized. All municipalities were matched with the corresponding municipality ID.

14. Switzerland has four official languages (German, French, Italian, and Rhaeto-Romanic)

15. Institutional information are missing for 15 percent of Swiss municipalities. Therefore, this variable is only considered in the robustness section.

16. According to data of the Federal Statistical Office (1980, p.28), the share of the resident population which is neither Roman Catholic nor Protestant varies between 2 and 3 percent.

Table 1: Descriptive statistics

Variable	N	Mean	Sd	Max	Min
Yes Share	10,234	44.98	22.56	100	0
German Share	10,234	60.85	40.96	100	0
Population Size	10,234	2332.00	12422.59	422640	19
Catholic Share	10,234	46.96	37.42	100	0
Catholic (>50%)	10,234	0.43	0.49	1	0
Agricultural Share	10,234	12.02	9.44	86.11	0
Foreigners Share	10,234	8.69	8.42	69.71	0
Women Share	10,234	49.01	3.55	75.29	14.14
Female Working Share	10,234	26.76	8.11	60	0

share of Catholics present in a municipality. Roughly one half of Swiss municipalities are predominately Catholic, which represents in a rich variation of religious affiliation across municipalities and cantons.

### Controls

The decennial census allows to control for several socioeconomic factors (denoted by  $X_{mt}$ ) that have been mentioned in the economic literature or are important in the Swiss case. The control variables can be classified into four groups: indicators of culture, urbanization, women in society, and democracy. The French-speaking cantons were the first to enfranchise women, which is one reason to control for the language area. Including population size (in logs), the share of workers in agriculture, and the share of foreigners as covariates allows to control for the level of municipal urbanity. These variables may also capture the presence of conservative attitudes. To account for the role of women in a given municipality, the share of women, the share of married individuals, and the share of working women are further added to the list of regressors.<sup>17</sup> In order to control for time-invariant cantonal characteristics, such as cantonal institutions or culture, cantonal (or municipal) fixed effects are added in the estimations. Table 1 provides an overview of the descriptive statistics considering the entire sample of votes.

## 4.2 Descriptive Analysis

Before turning to the econometric approach in section 5, Table 2 and Figure 1 provide a descriptive analysis. Table 2 presents the "yes" share of the two federal votes in

17. The Swiss Federal Statistical Office has changed the definition of a working woman. Before 1970, a woman was considered employed if she held a full-time job. After 1970, the threshold dropped to an employment for at least 6 hours per week.

Table 2: Federal votes: Acceptance per main religion

	Catholic municipalities	Protestant municipalities	$\Delta$ (Catholic-Protestant)
$\emptyset$ yes share 1959	19.67	25.77	-6.10
$\emptyset$ yes share 1971	56.34	55.85	0.49
$\Delta$ (1971-1959)	36.67	30.08	(+) 6.59

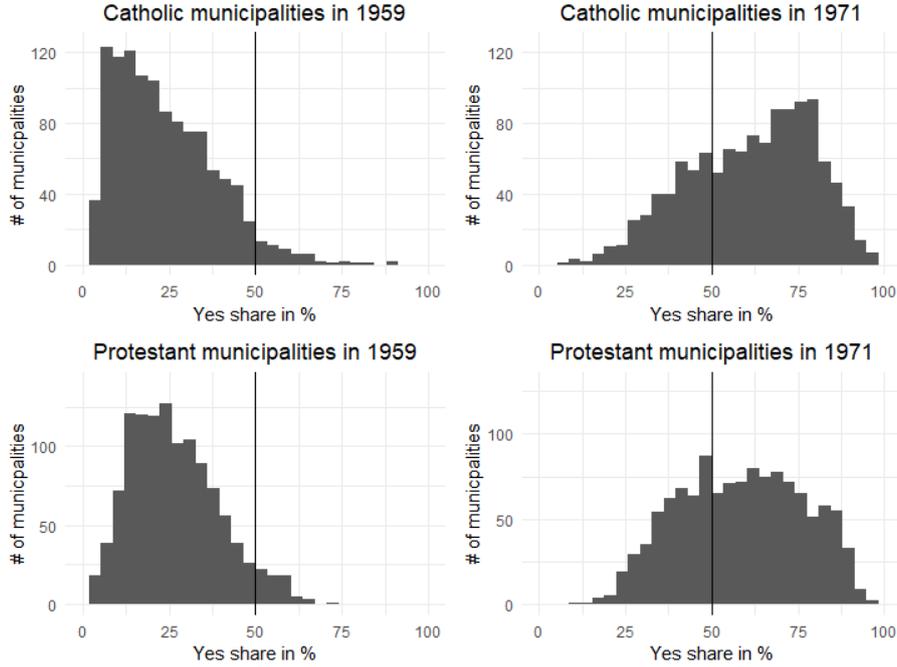
Notes: Catholic municipalities are those municipalities that have more than 50% Catholic inhabitants. All municipalities covered in the two federal votes are considered for the computations.

1959 and 1971, structured into mainly Catholic and Protestant municipalities. Table 2 displays that Protestant municipalities exhibit a considerably higher acceptance of female enfranchisement in the first federal vote in 1959. However, in the second federal vote, Catholic municipalities catch up and even overtake Protestant municipalities in 1971. Table 2 indicates that Catholic municipalities increased their acceptance towards enfranchising women considerably compared to Protestants (6.59 percentage points more).

Figure 1 maps the distribution of "yes" share in percent before (first federal vote of 1959) and after Vatican II (second federal vote of 1971) for Catholic and Protestant municipalities. In Figure 1, Catholic and Protestant municipalities are identified as municipalities with more than 50 percent Catholics (or Protestants respectively). Increasing the thresholds to 70 or 80 percent does not change the picture. An eyeballing exercise for the pre-Vatican II period leads to the impression that the distribution of "yes" share in the two groups differs only slightly, facing a right-skewed distribution of "yes" shares.

After Vatican II, the picture is different. The distribution for Protestant municipalities has moved towards a bell shape, whereas Catholic municipalities show a left-skewed distribution having more mass in the "accept" area. Considering Figure 1, both groups have moved toward a stronger acceptance of women's suffrage, but the movement of Catholic municipalities is more pronounced. Figure A.1 additionally maps the time trends of Catholic and Protestant municipalities over the 1950–1970 period by plotting the acceptance level by vote and main religion. Figure A.1 suggests that after Vatican II, Catholic municipalities overtake Protestant municipalities, whereas before Vatican II, the acceptance level in Catholic municipalities was lower than in Protestant municipalities. The descriptive analysis evidences that Vatican II had a differential effect on Catholic preferences when voting on female enfranchisement.

Figure 1: Histogram of yes share.



Notes: A Catholic municipality is defined by a threshold of 50% Catholics of the municipal resident population. Figure 3 maps a fully balanced sample of Swiss municipalities in 1959 and 1971. Religious switcher municipalities are excluded from the sample.

## 5 Empirical Strategy

I apply a difference-in-differences framework to identify the causal effect of Vatican II on voting outcomes. The binary variable *Vatican II* takes the value of 1 for observations after the completion of Vatican II in 1965 and 0 otherwise.<sup>18</sup> Second, a binary variable, *majority Catholics*, is created and set equal to 1 if the resident population of a municipality is by the majority Catholic and 0 otherwise. In the robustness section below, I use different thresholds to identify Catholic municipalities as well as the linear share of Catholics. If a municipality switches its type over time, it is excluded from the sample.<sup>19</sup> In the following, I estimate models of the form:

$$\begin{aligned}
 \text{Yes share}_{mt} = & \alpha + \beta_1 \text{majority Catholics}_{mt} + \beta_2 \text{Vatican II}_t \\
 & + \beta_3 \text{majority Catholics} * \text{Vatican II}_t + \theta X_{mt} \\
 & + \delta \text{canton}_m + \gamma \text{canton}_m * \text{year} + \varepsilon_{mt}
 \end{aligned} \tag{1}$$

Cantonal fixed effects ( $\delta$ ) account for cantonal time-invariant characteristics such as cantonal culture, industry, or institutions. Canton-year effects ( $\gamma$ ) additionally

18. During the four periods of the council, no vote on female enfranchisement was conducted.

19. Using a Switcher threshold of 50 percent, 37 municipalities are excluded from the sample.

control for cantonal differences that vary over time. Furthermore, estimates for a model with municipal fixed effects are presented in Table A.5 in the appendix. It is important, however, to consider that, in these models, the base effects of Catholicism are omitted due to time in-variance. In order to address potential serial correlation between observations from the same municipality, standard errors are clustered at the municipality level. The coefficient of interest is  $\beta_3$ , which captures trend breaks in the "yes" share that coincidence with the timing of Vatican II. Following the arguments in Section 3, I expect  $\beta_3$  to be strictly greater than zero, indicating that Vatican II increased support for female enfranchisement more strongly in Catholic municipalities, relative to Protestant municipalities.

The empirical approach relies on two identifying assumptions. First, Catholic and Protestant municipalities should experience the same fundamental time trends in the absence of Vatican II. Second, Vatican II should not affect the composition of Catholic and Protestant municipalities. Support for the second assumption is provided in section 6. Traditional approaches to tackle the first assumption are placebo time treatments and pre-trend comparisons. Due to the unbalanced structure and diverse voting questions, it is not possible to conventionally analyze the pre-treatment trends. However, a graphical analysis over the entire universe of enfranchisement referendums is presented in Figure A.1 in the appendix and confirms that Catholic municipalities specifically overtake after Vatican II. Moreover, propensity score methods are a tool to address the problem of different time trends in a multiple treatment difference-in-differences context (Lechner 2010 or Stuart et al. 2014). The basic approach is to assign weights to all observations in the sample, in order to alleviate the issue of differences between the treatment and the control group. Although propensity score methods are mostly used in settings with only two groups, some studies have extended the approach to cases with multiple groups (Stuart et al. 2014; McCaffrey et al. 2013; or Zanutto, Lu, and Hornik 2005). In the setting at hand, observations are divided into four groups: Catholic municipalities prior to Vatican II, Catholic municipalities after Vatican II, Protestant municipalities prior to Vatican II, and Protestant municipalities after Vatican II:

$$\text{groups: } \left\{ \begin{array}{l} 1) \text{ Catholic}=1 \text{ and Vatican II}=0 \\ 2) \text{ Catholic}=1 \text{ and Vatican II}=1 \\ 3) \text{ Catholic}=0 \text{ and Vatican II}=0 \\ 4) \text{ Catholic}=0 \text{ and Vatican II}=1 \end{array} \right.$$

Following Stuart et al. (2014) the weights are constructed as follows: First, a

multinomial logit regression is fitted that predicts the probability for each observation of belonging to one of the four groups as a function of observed characteristics.<sup>20</sup> This results in four probabilities for each observation  $e_k(X_{mt})$  for  $k = 1, \dots, 4$ , where  $\sum_{k=1}^4 e_k(X_{mt}) = 1 \forall m$ . The weights are then computed as

$$w_{mt} = e_1(X_{mt})/e_{g^m}(X_{mt}). \quad (2)$$

The construction implies that each observation’s weight is set equal to its predicted probability of belonging to group 1 (the treatment group before Vatican II) divided by its predicted probability of belonging to the group that it is actually in,  $g^m \in [1, \dots, 4]$ . In this way, a municipality that is similar to a municipality in group 1 but different when compared to its own group receives a higher weight. This approach allows to control for the possibility of different time trends between Catholics and Protestants. Using the weights defined in equation (2) and applying a similar model as shown in equation (1) results in consistent estimates, even if the common trend assumption is violated. Additional support for both underlying assumptions is presented in section 6.

## 6 Results and Robustness

From an empirical perspective, the two federal votes (1959 and 1971) are particularly useful. The setting allows for the examination of two identical ballot proposals, as the entire male electorate voted twice on the identical enfranchisement question. Therefore, the main specification is estimated on a fully balanced sample that covers the results of the federal referendums. In the robustness section, additional results using the entire dataset are presented.

### Results – Federal Votes

The estimation results presented in Table 3 indicate that being a Catholic municipality prior to Vatican II hinders the enfranchisement of women. Considering specifications (1) to (3), this effect varies around five percentage points when compared to a major Protestant municipality. The positive coefficient for Vatican II also indicates that Protestant municipalities increased their acceptance toward enfranchisement of women. This can be interpreted as the role of time and progressing experience with female enfranchisement in the cantons (see Table A.1 and A.2 in the appendix). Regarding

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20. The applied characteristics are population size, share of German-speaking population, female working share, agricultural share, and share of foreigners

the interaction term, the estimates show that after Vatican II, municipalities with a Catholic majority opened up significantly stronger to enfranchising women, compared to Protestant municipalities. With 3.9 percentage points for specification (3) in Table 3, the effect is economically meaningful and statistically significant at the 1% level. The set of control variables provides a consistent picture and confirms the effect of Vatican II. From specification (1) onward, I control for municipality size and the prevalence of German-speaking population. Controlling for language on the municipality level is adequate, as language borders do not fully follow cantonal borders. French-speaking cantons were first to enfranchise women. Therefore, along these lines, the larger the share of the German-speaking population in a canton, the less its electorate would agree to enfranchise women. An increase in the German-speaking population by one percentage point reduces the acceptance by 0.14 percentage point when considering the results of specification (3).

Including municipality size provides evidence of a positive effect of size on the acceptance of female voting rights. This is consistent with expectations, as population size is an indicator of urbanity and, moreover, negatively impacts individual influence on municipal politics. From specification (2) onward, the share of workers in agriculture and the share of foreigners are added to the set of control variables. The coefficient for the share of workers in agriculture is negative and significant throughout all specifications. The agricultural share exhibits a significant negative effect, which was expected, as agriculture is often considered to proxy for conservative attitudes in general and towards women specifically. The coefficients in specification (3) indicate that an increase of one percentage point reduces the acceptance toward enfranchising women by 0.38 percentage points. The share of foreigners is a valid proxy for the urban character of a municipality. The results presented in Table 3 suggest that the share of foreigners present in a municipality increases the acceptance toward women's enfranchisement.

From specification (3) onward, variables considering different aspects of women in society are included in the estimations. In contrast to the results of Braun and Kvasnicka (2013), the share of women in a municipality does not yield a significant effect in this study. This might be explained by the low variance across Swiss municipalities. The share of married couples exhibits a positive and significant impact on the "yes" share. Several arguments could explain this effect. It is plausible that married men expect their spouses to reflect their own preferences at the ballot. Two other non-exclusive explanations are that men place more trust in married women than in non-married ones, or that unmarried men distrust women more generally. The share of working women in a municipality is considered to be a proxy for female

Table 3: Main specification: Federal votes

	(1)	(2)	(3)	(4)
Dependent variable: yes share		conventional DD		propensity score
majority Catholics	-5.671 (0.731)	-5.599 (0.682)	-4.673 (0.705)	-4.539 (1.042)
Vatican II	17.151 (2.767)	16.824 (2.763)	16.152 (2.812)	9.424 (3.366)
majority Catholics*Vatican II	4.270 (0.813)	3.649 (0.830)	3.903 (0.831)	5.947 (2.068)
German share	-0.158 (0.010)	-0.143 (0.010)	-0.140 (0.009)	-0.162 (0.011)
population (logs)	3.138 (0.172)	0.737 (0.217)	0.264 (0.208)	-0.490 (0.458)
agriculture share		-0.406 (0.035)	-0.384 (0.034)	-0.410 (0.047)
foreigners share		0.153 (0.038)	0.140 (0.035)	0.226 (0.097)
married share			0.095 (0.040)	-0.006 (0.032)
women share			-0.034 (0.074)	-0.122 (0.152)
working women share			0.336 (0.036)	0.523 (0.054)
Cantonal FE	✓	✓	✓	✓
Cantonal-Time Trends	✓	✓	✓	✓
Observations	4,588	4,588	4,588	4,588
Municipalities	2,294	2,294	2,294	2,294
R-squared	0.812	0.828	0.835	0.831

Robust standard errors in parentheses clustered at the municipality level

empowerment. Regarding specification (4) in Table 3, an increase of the female working share by one percentage point increases the acceptance of women’s suffrage by 0.5 percentage points. The supporting effect of female labor participation is fully in line with the existing literature (Geddes and Lueck 2002).

## Propensity Scores – Federal Votes

In order to rule out the concern that Catholic and Protestant municipalities follow different time trends, the propensity score estimates are presented in specification (4) in Table 3, confirming the obtained results. Prior to Vatican II, the acceptance of female enfranchisement in Catholic municipalities is about 4.5 percentage points lower than that in Protestant municipalities. The coefficient of the interaction term stays robust and significant. However, the coefficient is somewhat larger when compared to the estimates of the conventional difference-in-differences model. This is an indication that the results presented in Specification (1) to (3) in Table 3 could be seen as a lower bound.

## 6.1 Robustness

### Additional Controls and Specifications

To account for the Swiss institutional setting Tables A.4, A.6, and A.8 in the appendix incorporate a proxy for the relative strength of direct democracy on the municipal level.<sup>21</sup> Furthermore, Figure A.2 and Table A.3 present the results for estimating an interaction of *share of Catholics*\* *Vatican II*. A benefit of this approach is to consider the full set of information instead of transforming it into a binary variable. Instead of interacting with the binary variable *majority Catholics*, the corresponding interaction effect indicates the extent to which the effect of Vatican II increases with the share of Catholics in a municipality. In order to illustrate this relationship, Figure A.2 displays the marginal effects of the interaction term *share of Catholics*\* *Vatican II* for three different sub-samples (full sample, federal sample, before 68 sample). In the pre-Vatican II period, the relationship between the ”yes” share and the share of Catholics is slightly negative, whereas it is strongly positive for the post-Vatican II period. Regarding the effect for the main specification, the results in Table A.4 indicate that an increase of Catholics by one percentage point increases the ”yes” share to enfranchise women by 0.04 (federal sample) or by 0.15 (before 68 sample) percentage points.

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21. For a detailed analysis of the role of direct democracy, see Koukal and Eichenberger (2017).

Table A.5 in the appendix maps the results for the main specification when applying municipality fixed effects. This allows for further addressing omitted variable bias stemming from time-invariant municipality characteristics such as municipality culture, industrial structure, geographical location, or municipal institutions. The estimation result for the differential effect of Vatican II on Catholics amounts to about 4.9 percentage points in specification (3) in Table A.5 and is highly significant on the 1%-level. Table A.6 in the appendix additionally lists the results for the main specification when standard errors are clustered at the cantonal level. According to Bertrand, Duflo, and Mullainathan (2004), fewer and larger clusters have the quality to have less bias but more variability. As a conservative test of the results, standard errors are clustered on the cantonal level, again confirming the previous results.<sup>22</sup>

### **Broadening the Sample 1919 – 1983**

In an additional robustness analysis, the empirical model is estimated using the full sample, covering all votes across federal levels, vote types, and cantons between 1919 and 1983. In contrast to the main specification considered in Table 3, this results in a strongly unbalanced panel. Therefore, some municipalities appear up to nine times in the panel, whereas other municipalities appear only three times. However, using the full enfranchisement process permits the consideration of a longer time period. The respective results are listed in the first section of Table A.4 in the appendix. Again, the results of the main specification are confirmed. However, with a size of around 2 percentage points, the differential effect of Vatican II on Catholics is smaller when compared to the main specification. Yet, this does not pose a threat to the main results. Quite, to the contrary, the narrower to Vatican II the chosen sample, the stronger is the main interaction effect.

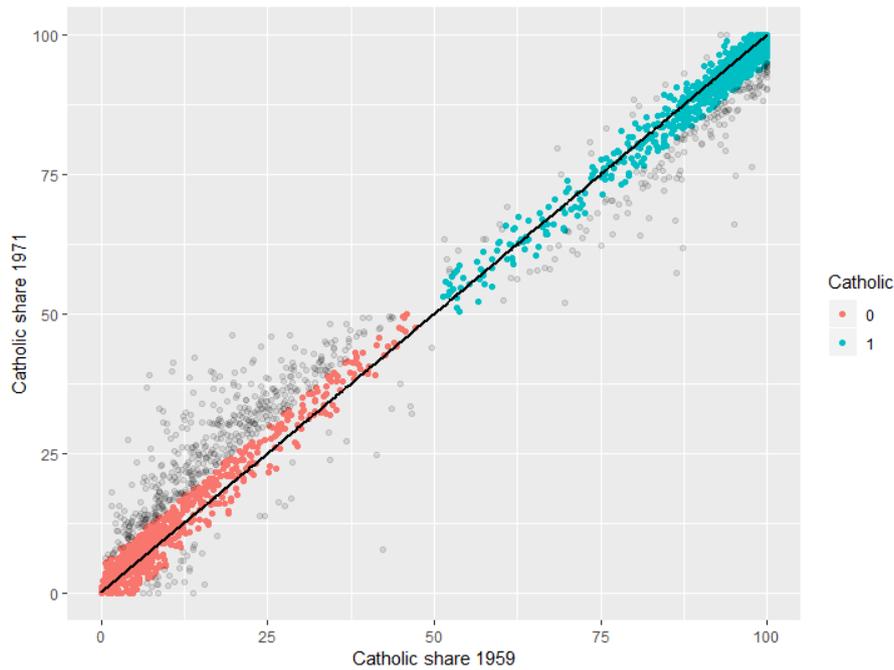
### **Composition of Treatment and Control Group**

An identifying assumption of the estimated difference-in-differences model is that the treatment has no effect on the composition of Catholic and Protestant municipalities (treatment and control group). Summing up the absolute number of Catholics in the resident population over the main sample results in 46.8% in 1959 and 50.7% in 1971. Comparing aggregated data for Switzerland, the growth rate of Catholics compared to other religious affiliations over the 1940 – 1970 period was more pronounced for Catholics. Table A.3 in the appendix indicates the quasi-constant growth rate for Catholics in the Swiss population (Panel B). It is important to note, however,

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22. Note that a cluster of 25 cantons is considered too small in the econometric literature.

Figure 2: Change of Religious Composition



that the decennial census data considers the municipal resident population. Panel B of Table A.3 suggests that the foreign population acts as a main driver for the growth rates among Catholics. In the period of 1940 – 1970, the foreign population consisted of 80 percent Catholics. However, this should not harm the results, as the composition of the Swiss electorate is not systematically affected. In order to further test the robustness of the results against changes in the religious composition, Table A.7 in the appendix presents the results for the main sample, when municipalities with an absolute change of more than 10 (or 5) percent are excluded from the sample. Figure 2 illustrates this robustness exercise as it considers the evolution of Catholics in 1959 and 1971. The grey dots represent municipalities with an absolute change of more than 5 percent. These municipalities are excluded in Table A.7. As an additional robustness exercise, Table A.8 maps the results of a reduced sample that compares municipalities with a share of at least 80 percent Catholics to municipalities with a share of at least 80 percent Protestants. The respective results confirm the result of a differential effect of Vatican II for Catholic municipalities when compared to major Protestants municipalities.

### **The 68 Movement as Alternative Explanation?**

The 68 Movement was a historical movement pointing towards modernization and could therefore raise concerns about the identification of the treatment. However,

it seems difficult to argue that the 68 Movement was a shock targeted at Catholics specifically. Moreover, when compared to other European countries, the Swiss 68 Movement was relatively weak, with a peak of political mobilization in 1975, i.e., after women were enfranchised on the federal level (Tackenberg 2016). In order to exclude the potential influence of the 68 Movement, the dataset offers sufficient observations of municipalities that voted on an identical referendum once in the pre- and once in the post-Vatican II period, but prior to the Swiss 68 Movement. The sub-sample ends in June 1968, with the Globus riots in Zurich<sup>23</sup>, marking the beginning of the Swiss 68 Movement. For the period of 1946 to 1968 (February), this resulted in a total of 1,800 observations, covering referendum votes of five cantons, which voted on the same enfranchisement question once before and once after Vatican II. These referendum votes are grey-shaded in Table A.1. The respective results are listed in the third section of Table A.4 and confirm the robustness of the main model. The size of the effect is substantially larger in this narrower dataset (around 9 percentage points) when compared to the main specification.

### Placebo Treatments

A possible alternative explanation of the Vatican II effect is that Catholics react differently to historical events in general or follow different time trends than Protestants, which would violate the common trend assumption. A graphical analysis over the entire universe of enfranchisement referendums is presented in Figure A.1 in the appendix and confirms that Catholic municipalities specifically overtake Protestant ones after Vatican II.<sup>24</sup> Moreover, when restricting the sample to a comparable sample of referendum votes (federal votes; excluding the 68 Movement), the classical common trend analysis is not feasible due to the resulting two-period character of the panel. Fortunately, the canton of Zurich offers an ideal setting to conduct placebo tests. Over the 1920 – 1970 period, the canton of Zurich conducted five identical votes on enfranchising women in municipal and cantonal matters.<sup>25</sup> This allows for the comparison of voting behavior over time considering identical proposals. In order to test whether or not Catholics generally react differently to historic events, three events are chosen: World War II (placebo 1), Vatican II, and the 68 Movement (placebo 2). As Zurich was the Swiss city in which the 68 Movement visibly started (Globus riots), this placebo test is placed in a suitable setting, particularly for disen-

23. The riots occurred after the attack on Rudi Dutschke, the spokesman of the German Students Movement, on April 11, 1968.

24. The full sample consists of miscellaneous enfranchisement referendum votes, ranging from votes concerning enfranchising women for specific topics on the municipality level to full political rights.

25. Those votes are listed in Table A.1 and were conducted in 1920, 1947, 1954, 1966, and 1970.

tangling Vatican II from the 68 Movement (Tackenberg 2016). For the purpose of evaluating whether Catholics reacted differently to those events or followed a different time trend, the referendum votes directly before and after those three events are used in the respective regressions.<sup>26</sup> For each event, the following model is estimated:

$$\begin{aligned} \text{Yes share}_{mt} = & \alpha + \beta_1 \text{share of Catholics}_{mt} + \beta_2 \text{historical event}_t \\ & + \beta_3 \text{share of Catholics}_{mt} * \text{historical event}_t + \theta X_{mt} \\ & + \delta \text{year} + \varepsilon_{mt} \end{aligned} \quad (3)$$

In order to test whether Catholics react differently to those events, the interaction term *share of Catholics \* historical event* is of central interest. Note that Catholicism in Table A.9 is approximated using the share of Catholics as a large majority of municipalities in the canton of Zurich hold a Protestant majority. If Vatican II was different than other historical events and if Catholics did not follow different time trends in general,  $\beta_3$  should only yield significant positive results for Vatican II. The results are listed in Table A.9 and suggest that Catholics in the canton of Zurich did not react significantly differently when it comes to World War II and the 68 Movement. In both placebo tests, the interaction term does not yield statistically significant results. Regarding the effect of Vatican II, the results obtained throughout this paper are replicated. Catholics in Zurich react specifically to Vatican II when compared to other historical events.

### **Local Cultural Leadership - The Swiss Guard**

Thus far, specific mechanisms on how the reforms of Vatican II materialized in the revealed preferences of Catholic men when compared to Protestant men have not been discussed. As the Pope is undoubtedly one of the most visible cultural leaders and the reforms of Vatican II were strongly connected to leading figures of the Catholic church, a potential mechanisms could be activated by cultural leaders. The role of cultural leaders has recently gained attention in the economic literature (e.g. Bassi and Rasul 2017 or Stroebel and van Benthem 2012) and will be further analyzed in this section. To investigate if (local) cultural leaders affected the revealed preferences of Catholic men, I focus on Swiss municipalities sending a Swiss Guardsman to the Vatican State during the period of the Council. Since 1506, the Swiss Guard operates as the Pope's military service in the Vatican state. The Swiss Guard consists of 110

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26. For the referendum vote in 1920, the controls are restricted to population in logs, share of women, share of German-speaking population, and share of people working in agriculture. The results for the two later events, Vatican II and 68 Movement, stay robust against introducing additional control variables.

guardsmen and is the oldest regiment still active. Besides their deep insights into the Vatican state, the Swiss Guardsmen are also visible in their Swiss home municipality and therefore covered in newspaper reports (e.g. Rüttimann 2019 or Walpen 2005). The following conditions need to be met in order to join the Swiss Guard: the candidate must be a single Catholic Swiss citizen with completed basic training in the Swiss armed forces. This heterogeneity test assumes that municipalities sending a Swiss Guardsman to the Vatican state have a stronger connection to the reforms and better information about the changes of the Council when compared to a similar Catholic municipality. Swiss Guardsmen have close contact with the Pope and access to events in the Vatican state. In order to identify municipalities with a Guardsman during Vatican II, the Vatican state archive provided the author with information about the municipal origin for 73 Swiss Guardsmen present during the Council. Due to the small number of observations, this information is used in a propensity score approach, which was already presented in more detail in section 5 of this paper. The following four groups are constructed as follows:

$$\text{groups: } \left\{ \begin{array}{l} 1) \text{ Swiss Guardsman}=1 \text{ and Vatican II}=0 \\ 2) \text{ Swiss Guardsman}=1 \text{ and Vatican II}=1 \\ 3) \text{ Swiss Guardsman}=0 \text{ and Vatican II}=0 \\ 4) \text{ Swiss Guardsman}=0 \text{ and Vatican II}=1 \end{array} \right.$$

The aim is to construct comparability of municipalities sending a Swiss Guardsman with those without such a Guardsman prior to Vatican II. The weight of each observation is set equal to its predicted probability of belonging to group 1 (municipality sending a Guardsman before Vatican II), divided by its predicted probability of belonging to the group that it is actually in,  $g^m \in [1, \dots, 4]$ . In this way, a municipality that is similarly Catholic to a municipality sending a Guardsman prior to Vatican II, but different compared to its own group, receives a higher weight. The corresponding results are listed in Table A.10 in the appendix and provide evidence that municipalities sending a Swiss Guardsman opened up substantially stronger toward enfranchising women. The differential effect of Vatican II in municipalities with a Guardsman during the Council is statistically significant at the 1%-level, and the coefficient varies around 5,5 percentage points. However, due to the data structure, this heterogeneity test has some limitations. First, I do not observe all Swiss Guardsmen (73 out of 110). Second, Switzerland exhibits two principles of municipality classification: the actual residential municipality and the so-called citizens' municipality (Bürgergemeinde). The citizens' municipality may, but is not required to, be the birthplace or residential municipality of a person. Unfortunately, the

Vatican Archive only holds a systematic record of citizens' municipality. According to the archive, for the observed period, this is identical with the residential municipality for at least 60 percent of the cases.

## 7 Conclusion

The persistence of cultural traits has gained substantial attention in the economic literature. A well-established channel to explain cultural change is inter-generational transmission (Bisin and Verdier 2001 or Guiso, Sapienza, and Zingales 2008). However, only a few studies have focused on channels and mechanisms that drive swift cultural change. This paper contributes to the literature by exploring the rapid modernization of the Catholic doctrine, which was triggered by the Second Vatican Council (1962–1965). Astonishingly, the Catholic church, which is known for its persistence and rigid doctrine, made an unexpected move toward modernization. Vatican II brought major changes in the Catholic doctrine and religious life. Using a new dataset related to Swiss female enfranchisement (1919–1983), this paper analyzed whether leader-induced cultural change manifests swiftly in the revealed preferences of Catholic voters. There are at least three reasons for which the Swiss female enfranchisement process provides a fruitful ground to analyze the issues at hand: First, democratization and female empowerment are both topics that are closely related to Vatican II. Second, it provides repeated information on the same topic. Third, roughly one half of Swiss municipalities is Catholic, while the other half is Protestant. The results presented in this paper suggest that Catholics followed their shepherds on the way to modernization by increasing their acceptance toward enfranchising women. This result appeared to remain robust against a variety of robustness checks, such as narrowing the sample, estimating different specifications of the underlying model, and conducting a placebo treatment analysis. Using the panel of federal referendum votes, the additional effect of Vatican II on the acceptance of female enfranchisement appeared to vary by around four percentage. In comparison with their Protestant counterparts, the swift reaction of Catholics seems not to be explicable using the logic of the inter-generational transmission channel. The results presented in this paper seem to be driven by a mixture of the following: the Catholic church as a central and worldwide organization, the Pope's sovereignty as a global cultural leader, cultural diffusion through local leaders, and a potential convergence towards the preferences of the Church members.

The analysis considering the case of Swiss Guardsmen and the Pius brotherhood

supports the idea that one potential driver of the presented effect could be the role of religious leaders (Swiss Guardsmen, bishops, role models or the Pope). However, further research is required to gain a deeper understanding of the mechanism. This paper does not claim that Catholics would not have opened up to female enfranchisement to the same extent without Vatican II. However, it suggests that it would have taken Catholics more time to do so. A potential policy implication of the presented results is that cultural leaders might not only preserve cultural traits (Prummer and Siedlarek 2017 or Verdier and Zenou 2018), but could also trigger cultural change. Organizations, such as central committees of religious groups, might be an interesting tool when it comes to acting as transmission channels for both cultural change and cultural preservation.

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# A Additional tables and figures

Table A.1: Overview votes entire sample 1919 – 1983

vote ID	year	date	canton	level	optional	yes share	vote ID	year	date	canton	level	optional	yes share
2	1919	29.06.1919	NE	integral	0	30,8	52	1968	18.02.1968	SO	cantonal	0	42,5
3	1920	08.02.1920	BS	integral	0	35,0	53	1968	18.02.1968	SO	municipal	0	47,3
5	1920	08.02.1920	ZH	integral	0	19,6	54	1968	19.05.1968	OW	municipal	1	78,7
4	1921	06.09.1921	SG	integral	0	31,6	55	1968	23.06.1968	BL	cantonal	0	68,1
7	1921	16.10.1921	GE	integral	0	31,9	56	1968	20.10.1968	GR	integral	0	39,0
9	1926	11.07.1926	BL	school issues	0	48,7	57	1969	26.01.1969	TG	school issues	0	50,8
10	1927	15.05.1927	BS	integral	0	29,2	59	1969	14.09.1969	SH	integral	0	47,2
13	1946	16.06.1946	BS	integral	0	37,1	60	1969	14.09.1969	ZH	municipal	1	57,9
14	1946	07.07.1946	BL	integral	0	26,5	61	1969	19.10.1969	TI	integral	0	63,0
15	1946	29.09.1946	GE	integral	0	43,7	62	1969	16.11.1969	FR	fundamental approval	1	71,1
16	1946	08.11.1946	TI	integral	0	22,8	63	1970	12.04.1970	VS	integral	0	72,6
17	1947	30.11.1947	ZH	integral	0	22,5	68	1970	27.09.1970	BL	municipal	0	81,1
19	1948	14.03.1948	NE	municipal	0	32,8	69	1970	27.09.1970	SG	municipal	1	47,3
20	1948	14.11.1948	SO	municipal	0	49,5	70	1970	25.10.1970	LU	integral	0	63,0
21	1951	25.02.1951	VD	municipal	1	39,2	71	1970	15.11.1970	SO	municipal	1	65,9
23	1953	07.06.1953	GE	integral	0	42,8	72	1970	15.11.1970	ZH	integral	0	67,0
25	1954	05.12.1954	BS	integral	0	45,1	73	1971	07.02.1971	all cantons	federal	0	65,7
26	1954	05.12.1954	ZH	integral	0	28,7	74	1971	07.02.1971	FR	integral	0	73,8
27	1955	15.05.1955	BL	stepwise introduction	1	43,7	75	1971	07.02.1971	ZG	integral	0	62,5
33	1956	04.03.1956	BE	municipal	1	45,6	76	1971	07.02.1971	SH	integral	0	57,1
34	1957	03.11.1957	BS	municipal	1	59,7	77	1971	07.02.1971	AG	integral	0	51,7
35	1959	01.02.1959	all cantons	federal	0	33,1	78	1971	07.02.1971	SZ	integral	1	47,0
36	1959	01.02.1959	VD	integral	0	52,6	81	1971	06.06.1971	SO	cantonal	0	79,5
37	1959	27.09.1959	NE	integral	0	53,6	82	1971	12.12.1971	BE	cantonal	0	82,8
38	1960	06.03.1960	GE	integral	0	55,4	84	1971	12.12.1971	TG	integral	0	62,7
39	1960	04.12.1960	LU	municipal	1	24,5	85	1972	23.01.1972	SG	integral	0	65,3
42	1962	07.10.1962	GR	municipal	1	59,0	86	1972	30.01.1972	UR	integral	1	57,1
44	1966	13.03.1966	BL	stepwise introduction	1	57,3	87	1972	05.03.1972	SZ	integral	0	68,2
45	1966	24.04.1966	TI	integral	0	48,3	88	1972	05.03.1972	UR	integral	0	62,9
46	1966	26.06.1966	BS	integral	0	60,0	89	1972	05.03.1972	GR	cantonal	0	72,2
47	1966	20.11.1966	ZH	integral	0	46,4	94	1972	24.09.1972	OW	cantonal	0	58,7
49	1967	28.05.1967	SH	integral	0	45,0	99	1980	02.03.1980	SO	municipal	0	65,4
50	1967	04.06.1967	BL	stepwise introduction	1	63,9	101	1983	27.02.1983	GR	municipal	0	62,9
51	1968	18.02.1968	BE	municipal	1	52,1							

Notes: Listed are only those votes that are part of the dataset. Gaps in the data can be explained either by the lack of data in general or the lack of municipality information. Missing are votes held in cantons with cantonal assemblies for cantonal and municipal matters. In those cantons, municipal voting data is only available for the two federal votes. The main source of this list is Ruckstuhl (1989). The grey shaded votes are part of the sub-sample, only considering those cantons voting twice on the same question in the pre- and post-Vatican II period, but before 1968.

Table A.2: First implementation of female suffrage at the municipal level

Acceptance date	canton	level
February 1, 1959	Vaud	integral
September 27, 1959	Neuchâtel	integral
March 6, 1960	Geneva	integral
June 26, 1966	Basel City	integral
May 19, 1968	Obwalden	municipal
October 19, 1969	Ticino	integral
April 12, 1970	Valais	integral
April 26, 1970	Nidwalden	municipal
September 9, 1970	Basel County	municipal
October 25, 1970	Lucerne	integral
November 15, 1970	Zurich	integral
February 7, 1971	all cantons	federal
February 7, 1971	Fribourg	integral
February 7, 1971	Zug	integral
February 7, 1971	Schaffhausen	integral
February 7, 1971	Aargau	integral
May 5, 1971	Glarus	integral
December 12, 1971	Bern/ Jura	integral
December 12, 1971	Thurgau	integral
January 23, 1972	St. Gallen	integral
April 30, 1972	Appenzell A.Rh.	municipal
March 5, 1972	Schwyz	integral
March 5, 1973	Uri	integral
March 2, 1980	Solothurn	municipal
February 27, 1983	Grisson	municipal
November 27, 1990	Appenzell I.Rh.	integral

Notes: Excluded are votes about facultative suffrage introduction at the municipal level and suffrage introduction for specific topics. The chronology is based on Ruckstuhl (1989)

Table A.3: Religious affiliation 1940 – 1970

<b>Panel A) Resident Population</b>							
	<b>Protestants</b>	<b>Roman Catholics</b>	<b>Old Catholic</b>	<b>Others</b>	<b>Jewish</b>	<b>% Others</b>	<b>% Catholics</b>
1940	2457242	1724205	29999	34828	19429	2,01	40,42
1950	2655375	1959046	28568	52955	19048	2,18	41,55
Δ	8,06	13,62	-4,77	52,05	-1,96	8,16	2,79
1950	2655375	1959046	28568	52955	19048	2,18	41,55
1960	2861522	2463214	29754	54587	19984	1,96	45,37
Δ	7,76	25,74	4,15	3,08	4,91	-10,11	9,20
1960	2861522	2463214	29754	54587	19984	1,96	45,37
1970	2991694	3096654	20268	140423	20744	2,98	49,39
Δ	4,55	25,72	-31,88	157,25	3,80	52,10	8,86
<b>Panel B) Swiss Population</b>							
	<b>Protestants</b>	<b>Roman Catholics</b>	<b>Old Catholic</b>	<b>Others</b>	<b>Jewish</b>	<b>% Others</b>	<b>% Catholics</b>
1940	2396342	1577993	27869	29666	10279	1,71	39,04
1950	2591439	1756601	26957	43814	10735	1,87	39,66
Δ	8,14	11,32	49,17	47,69	4,44	9,86	1,58
1950	2591439	1756601	26957	43814	10735	1,87	39,66
1960	2767108	1998661	28556	38032	11965	1,65	41,26
Δ	6,78	13,78	51,44	-13,20	11,46	-12,07	4,04
1960	2767108	1998661	28556	38032	11965	1,65	41,26
1970	2854727	2231988	19323	71692	11977	2,02	43,01
Δ	3,17	11,67	40,36	88,50	0,10	22,84	4,24
<b>Panel C) Foreign Population</b>							
	<b>Protestants</b>	<b>Roman Catholics</b>	<b>Old Catholic</b>	<b>Others</b>	<b>Jewish</b>	<b>% Others</b>	<b>% Catholics</b>
1940	60900	146212	2130	5162	9150	7,94	65,40
1950	63936	202445	1611	8313	10735	7,76	70,53
Δ	4,99	38,46	-24,37	61,04	17,32	-2,31	7,84
1950	63936	202445	1611	8313	10735	7,76	70,53
1960	94414	464553	1198	16555	8019	4,61	79,45
Δ	47,67	129,47	-25,64	99,15	-25,30	-40,55	12,64
1960	94414	464553	1198	16555	8019	4,61	79,45
1970	136967	864666	945	68731	8767	7,83	80,06
Δ	45,07	86,13	-21,12	315,17	9,33	69,86	0,77

Source: Federal Statistical Office Yearbook, 1980

Table A.4: Different samples and specifications

<b>Full sample 1919-1984: Catholics share</b>					<b>Full sample 1919-1984: majority Catholics</b>				
VARIABLES	(1) yes share	(2) yes share	(3) yes share	(4) yes share	VARIABLES	(1) yes share	(2) yes share	(3) yes share	(4) yes share
Catholics share	-0.032 (0.012)	-0.032 (0.011)	-0.032 (0.011)	-0.036 (0.011)	majority Catholics	-4.137 (0.776)	-4.059 (0.729)	-3.112 (0.728)	-3.37 (0.711)
Vatican II	3.689 (0.780)	3.961 (0.875)	3.961 (0.875)	0.399 (0.957)	Vatican II	4.293 (0.671)	4.265 (0.685)	4.535 (0.745)	0.883 (0.843)
Catholics*Vatican II	0.035 (0.011)	0.024 (0.011)	0.024 (0.011)	0.02 (0.011)	majority Catholics*Vatican II	2.662 (0.716)	1.799 (0.713)	1.503 (0.742)	1.338 (0.738)
culture	✓	✓	✓	✓	culture	✓	✓	✓	✓
urbanity		✓	✓	✓	urbanity		✓	✓	✓
female structure			✓	✓	female structure			✓	✓
democracy				✓	democracy				✓
Cantonal FE	✓	✓	✓	✓	Cantonal FE	✓	✓	✓	✓
Cantonal-time Trends	✓	✓	✓	✓	Cantonal-time Trends	✓	✓	✓	✓
Observations	9,954	9,954	9,954	9,954	Observations	9,954	9,954	9,954	9,954
R-squared	0.637	0.662	0.662	0.669	R-squared	0.638	0.655	0.662	0.669
<i>Robust standard errors clustered at the municipality level in parentheses</i>					<i>Robust standard errors clustered at the municipality level in parentheses</i>				
<b>Federal votes: Catholics share</b>					<b>Federal votes: majority Catholics</b>				
VARIABLES	(1) yes share	(2) yes share	(3) yes share	(4) yes share	VARIABLES	(1) yes share	(2) yes share	(3) yes share	(4) yes share
Catholics share	-0.062 (0.011)	-0.07 (0.010)	-0.056 (0.010)	-0.06 (0.011)	majority Catholics	-6.218 (0.728)	-6.159 (0.679)	-5.01 (0.702)	-5.186 (0.708)
Vatican II	15.186 (3.216)	16.147 (3.194)	14.957 (3.212)	14.936 (3.214)	Vatican II	15.93 (3.086)	15.497 (3.053)	15.261 (3.045)	15.239 (3.047)
Catholics*Vatican II	0.054 (0.013)	0.032 (0.013)	0.043 (0.013)	0.043 (0.013)	majority Catholics*Vatican II	4.382 (0.810)	3.713 (0.828)	3.902 (0.827)	3.938 (0.827)
culture	✓	✓	✓	✓	culture	✓	✓	✓	✓
urbanity		✓	✓	✓	urbanity		✓	✓	✓
female structure			✓	✓	female structure			✓	✓
democracy				✓	democracy				✓
Cantonal FE	✓	✓	✓	✓	Cantonal FE	✓	✓	✓	✓
Cantonal-time Trends	✓	✓	✓	✓	Cantonal-time Trends	✓	✓	✓	✓
Observations	4,136	4,136	4,136	4,136	Observations	4,136	4,136	4,136	4,136
R-squared	0.817	0.836	0.844	0.845	R-squared	0.819	0.837	0.844	0.845
<i>Robust standard errors clustered at the municipality level in parentheses</i>					<i>Robust standard errors clustered at the municipality level in parentheses</i>				
<b>votes before 68: Catholics share</b>					<b>votes before 68: majority Catholics</b>				
VARIABLES	(1) yes share	(2) yes share	(3) yes share	(4) yes share	VARIABLES	(1) yes share	(2) yes share	(3) yes share	(4) yes share
Catholics share	-0.076 (0.024)	-0.092 (0.024)	-0.089 (0.023)	-0.097 (0.024)	majority Catholics	-8.436 (1.714)	-8.154 (1.643)	-7.435 (1.692)	-7.975 (1.716)
Vatican II	0.304 (2.820)	2.801 (2.929)	5.492 (4.050)	6.018 (4.042)	Vatican II	0.816 (3.257)	2.726 (3.303)	5.214 (4.128)	5.852 (4.129)
Catholics*Vatican II	0.161 (0.020)	0.157 (0.019)	0.148 (0.023)	0.147 (0.023)	majority Catholics*Vatican II	10.378 (1.589)	9.991 (1.489)	8.034 (1.829)	8.274 (1.820)
culture	✓	✓	✓	✓	culture	✓	✓	✓	✓
urbanity		✓	✓	✓	urbanity		✓	✓	✓
female structure			✓	✓	female structure			✓	✓
democracy				✓	democracy				✓
Cantonal FE	✓	✓	✓	✓	Cantonal FE	✓	✓	✓	✓
Cantonal-time Trends	✓	✓	✓	✓	Cantonal-time Trends	✓	✓	✓	✓
Observations	1,842	1,842	1,842	1,842	Observations	1,842	1,842	1,842	1,842
R-squared	0.507	0.563	0.572	0.580	R-squared	0.506	0.561	0.569	0.578
<i>Robust standard errors clustered at the municipality level in parentheses</i>					<i>Robust standard errors clustered at the municipality level in parentheses</i>				

Table A.5: Main specification -- municipal fixed effects

*Federal Votes - Municipality Fixed Effects*

<i>Catholics share</i>				<i>majority Catholics</i>			
VARIABLES	(1) yes share	(2) yes share	(3) yes share	VARIABLES	(1) yes share	(2) yes share	(3) yes share
Catholics share	-0.016 (0.056)	0.016 (0.063)	-0.019 (0.062)	majority Catholics			
Vatican II	31.13 (0.559)	31.018 (0.568)	33.029 (0.801)	Vatican II	32.385 (0.397)	32.292 (0.446)	34.229 (0.669)
Catholics*Vatican II	0.075 (0.009)	0.076 (0.009)	0.066 (0.010)	majority Catholics*Vatican II	5.518 (0.556)	5.362 (0.563)	4.93 (0.561)
culture	✓	✓	✓	culture	✓	✓	✓
urbanity		✓	✓	urbanity		✓	✓
female structure			✓	female structure			✓
Municipal FE	✓	✓	✓	Municipal FE	✓	✓	✓
Number of municipalities	2,294	2,294	2,294	Number of municipalities	2,294	2,294	2,294
Observations	4,588	4,588	4,588	Observations	4,588	4,588	4,588
R-squared	0.879	0.879	0.883	R-squared	0.878	0.879	0.883

*Robust standard errors clustered at the municipality level in parentheses*

Table A.6: Federal votes: Cluster on the cantonal level

VARIABLES	(1) yes share	(2) yes share	(3) yes share	(4) yes share
majority Catholics	-6.218 (0.667)	-6.159 (0.657)	-5.010 (0.803)	-5.186 (0.829)
Vatican II	15.930 (0.501)	15.497 (0.613)	15.261 (1.931)	15.239 (1.940)
Catholics*Vatican II	4.382 (0.498)	3.713 (0.606)	3.902 (0.707)	3.938 (0.692)
culture	✓	✓	✓	✓
urbanity		✓	✓	✓
female structure			✓	✓
democracy				✓
Cantonal FE			✓	✓
Cantonal-Time Trends			✓	✓
Number of municipalities	2,068	2,068	2,068	2,068
Observations	4,136	4,136	4,136	4,136
R-squared	0.819	0.837	0.844	0.845

Robust standard errors in parentheses clustered at the municipality level

Table A.7: Excluding municipalities with major changes in religious composition

	(1)	(2)	(3)	(4)
Dependent variable:	absolute change in share of Catholics:			
yes share	<10%	<5%	<10%	<5%
majority Catholics			-4.223 (0.747)	-3.835 (0.997)
Vatican II	34.351 (0.686)	33.569 (0.779)	17.558 (2.875)	17.648 (2.998)
Catholics*Vatican II	5.003 (0.594)	5.461 (0.703)	3.059 (0.876)	3.392 (0.827)
culture	✓	✓	✓	✓
urbanity	✓	✓	✓	✓
female structure	✓	✓	✓	✓
Cantonal FE			✓	✓
Cantonal-Time Trends			✓	✓
Municipal FE	✓	✓		
Number of municipalities	2,092	1,625	2,092	1,625
Observations	4,184	3,250	4,184	3,250
R-squared	0.881	0.877	0.832	0.831

Robust standard errors in parentheses clustered at the municipality level

Table A.8: Results for municipalities with more than 80% Protestants or Catholics

<i>Federal votes</i>					<i>Votes before 68: majority Catholics</i>				
VARIABLES	(1) yes share	(2) yes share	(3) yes share	(4) yes share	VARIABLES	(1) yes share	(2) yes share	(3) yes share	(4) yes share
majority Catholics	-6.937 (0.994)	-7.496 (0.937)	-6.3 (0.954)	-6.671 (0.964)	majority Catholics	-10.183 (2.627)	-11.384 (2.560)	-10.864 (2.530)	-11.006 (2.582)
Vatican II	16.091 (3.218)	16.381 (3.168)	15.597 (3.228)	15.577 (3.229)	Vatican II	-8.397 (4.182)	-4.468 (3.993)	-6.730 (4.934)	-7.543 (4.933)
majority Catholics*Vatican II	4.228 (1.270)	2.891 (1.312)	3.558 (1.309)	3.593 (1.306)	majority Catholics*Vatican II	12.537 (1.845)	12.718 (1.707)	10.835 (2.359)	11.129 (2.330)
culture	✓	✓	✓	✓	culture	✓	✓	✓	✓
urbanity		✓	✓	✓	urbanity		✓	✓	✓
female structure			✓	✓	female structure			✓	✓
democracy				✓	democracy				✓
Cantonal FE	✓	✓	✓	✓	Cantonal FE	✓	✓	✓	✓
Cantonal-time FE	✓	✓	✓	✓	Cantonal-time FE	✓	✓	✓	✓
Observations	3,066	3,066	3,066	3,066	Observations	1,239	1,239	1,239	1,239
R-squared	0.801	0.818	0.827	0.829	R-squared	0.501	0.555	0.568	0.582
<i>Robust standard errors clustered at the municipality level in parentheses. Included are municipalities with more than 80% Protestants or Catholics</i>					<i>Robust standard errors clustered at the municipality level in parentheses. Included are municipalities with more than 80% Protestants or Catholics</i>				

Table A.9: Placebo tests – canton of Zurich

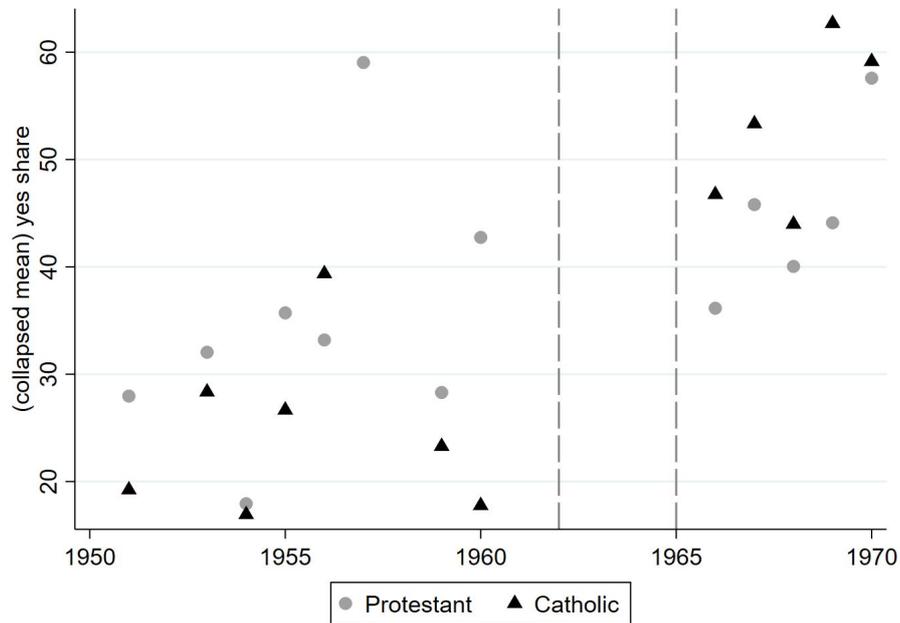
Zurich Placebo test WW2				Zurich Vatican II treatment				Zurich Placebo test 68movement			
VARIABLES	(1) yes share	(2) yes share	(3) yes share	VARIABLES	(1) yes share	(2) yes share	(3) yes share	VARIABLES	(1) yes share	(2) yes share	(3) yes share
Catholic share	0.034 (0.066)	0.034 (0.067)	0.025 (0.064)	Catholic share	-0.201 (0.066)	-0.191 (0.072)	-0.194 (0.072)	Catholic share	0.039 (0.110)	0.139 (0.165)	0.152 (0.176)
placeboWW2	-1.198 (0.818)	-1.197 (0.819)	-1.451 (0.809)	Vatican II	-1.143 (1.326)	-1.483 (1.371)	-1.531 (1.377)	placebo68	22.825 (1.291)	22.825 (1.293)	22.825 (1.295)
placeboWW2*Catholic	0.074 (0.052)	0.074 (0.052)	0.076 (0.050)	Vatican II*Catholic	0.449 (0.061)	0.523 (0.088)	0.522 (0.088)	placebo68*Catholic	0.005 (0.042)	0.005 (0.042)	0.005 (0.043)
population (logs)	1.67 (0.389)	1.669 (0.389)	1.884 (0.366)	population (logs)	1.9 (0.461)	1.919 (0.461)	1.976 (0.476)	population (logs)	1.696 (0.663)	1.665 (0.664)	1.455 (0.769)
agriculture (share)	-0.301 (0.042)	-0.301 (0.042)	-0.32 (0.044)	agriculture (share)	-0.752 (0.079)	-0.778 (0.080)	-0.786 (0.081)	agriculture (share)	-1.233 (0.206)	-1.299 (0.209)	-1.267 (0.222)
German (share)		-0.002 (0.039)	0.001 (0.030)	German (share)		0.197 (0.184)	0.202 (0.183)	German (share)		0.258 (0.204)	0.236 (0.204)
women (share)			-0.243 (0.084)	women (share)			-0.070 (0.125)	women (share)			0.276 (0.403)
Constant	3.299 (3.601)	3.540 (5.279)	14.445 (6.390)	Constant	17.127 (4.199)	-1.922 (18.470)	0.882 (19.649)	Constant	26.601 (6.163)	2.250 (20.321)	-8.393 (28.476)
Observations	307	307	307	Observations	315	315	315	Observations	316	316	316
R-squared	0.652	0.652	0.662	R-squared	0.749	0.751	0.751	R-squared	0.790	0.793	0.794
<i>Robust standard errors in parentheses clustered at the municipality level. This regression contains two votes in the canton of Zurich conducted in 1920 and 1947 about enfranchising women on the municipal and cantonal level.</i>				<i>Robust standard errors in parentheses clustered at the municipality level. This regression contains two votes in the canton of Zurich conducted in 1954 and 1966 about enfranchising women on the municipal and cantonal level.</i>				<i>Robust standard errors in parentheses clustered at the municipality level. This regression contains two votes in the canton of Zurich conducted in 1966 and 1970 about enfranchising women on the municipal and cantonal level.</i>			

Table A.10: Swiss Guardsmen - local leadership

	(1)	(2)	(3)
VARIABLES	yes share	yes share	yes share
Gardsman	-0.138 (0.845)	-0.245 (0.699)	-0.207 (0.689)
Vatican II	18.648 (2.505)	18.257 (2.595)	21.325 (3.260)
Guardsman* Vatican II	3.430 (1.523)	5.557 (1.582)	5.833 (1.590)
culture	✓	✓	✓
urbanity	✓	✓	✓
female structure	✓	✓	✓
Cantonal FE	✓	✓	✓
Cantonal-Time Trends	✓	✓	✓
Number of Guardsmen	68	68	68
Observations	4,588	4,588	4,588
R-squared	0.949	0.958	0.959

Robust standard errors in parentheses clustered at the municipality level

Figure A.1: Aggregated data for Catholics and Protestant municipalities 1950 – 1970 - all referendums



Notes: Catholic municipalities are defined by a threshold of 50%. For the purpose of this paper, it is not necessary that Catholic municipalities overtake Protestant municipalities, as the difference in acceptance before and after Vatican II is the main point of interest. The exception in Table A1, where Catholics show a higher acceptance toward women's suffrage, is an observation from the canton of Bern in 1956. Note, however, that this referendum vote was about voluntary enfranchisement at the municipal level only.

Figure A.2: Linear adjusted prediction

