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LIEPP Working Paper

Mai 2018, nº79

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Comment citer cette publication:
Andreas Steinhauer, **Working Moms, Childlessness, and Female Identity**, *Sciences Po LIEPP Working Paper n°79*, 2018-05-16.

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May 4, 2018

Abstract

In this paper I provide empirical evidence that the strength of beliefs regarding the harm children suffer when their mothers work plays an important role in explaining gender gaps in labor market outcomes and fertility trends. I exploit a unique setting in Switzerland and compare outcomes of one cohort of Swiss women born in the 1950s either into the French or German ethno-linguistic group. This allows me to compare outcomes of women exposed to different norms regarding working mothers while holding constant typical confounding factors such as composition, labor market opportunities, and work-family policies. Consistent with the strong belief that children suffer with working mothers in the German region, I find that German-born women are 15-25% less likely to work as mothers and 20-20% more likely to remain childless compared to their French-born peers. Only the extensive margins show marked differences and especially among the highly educated. I argue that an identity framework along the lines of Akerlof and Kranton (2000) can rationalize these patterns in a tractable way.

JEL classification: J13, J16, J22, Z10

*I would like to thank, without implicating them, Josef Zweimüller for his generous support and ongoing comments, and Michèle Belot, David Card, Steven Dieterle, Beatrix Eugster, Armin Falk, Sandro Favre, Christina Felfe, Raquel Fernández, Sebastian Findeisen, Maia Güell, Andreas Kuhn, Rafael Lalive, Arna Olafsson, Dimitra Politi, Analia Schlosser, Etienne Wasmer, and Rainer Winkelmann for helpful comments and suggestions as well as numerous seminar and conference participants for feedback. I would also like to thank Dominik Ullmann at the Federal Statistical Office in Neuchâtel, Switzerland, for his generous help with the data, and UC Berkeley and Sciences Po for hosting me for parts of this research. Funding from the Swiss National Science Foundation, Grant No. PBZHP1_143357, is gratefully acknowledged.

1 Introduction

Female employment rates have increased substantially in Western societies in the latter half of the 20th century, especially among married women and mothers. Over the same time period, fertility rates have decreased. Although the general directions of change are the same everywhere there are significant cross-country differences in levels (Feyrer et al., 2008). Furthermore, there is a persistent gap between female and male labor market outcomes within countries, whether one looks at employment rates, hours of work, or wages, even after more than half a century of convergence and in places that are thought to be at the frontier of gender equity such as Denmark (Kleven et al., 2018). A growing literature is taking on the challenge of understanding these patterns by focusing on attitudes related to female employment in general and differences in gender identity norms regarding the division of work in families in particular, started by the seminal work of Goldin (1990). The focal point of the debate on gender differences in labor market outcomes and the development of fertility rates is the question of who takes care of children as the event of parenthood is the watershed moment in women's and men's careers (Goldin, 2014; Kleven et al., 2018) and the less care that is done by mothers the higher is the fertility rate (Feyrer et al., 2008). Early childhood care is surrounded by strong norms regarding what mothers *should* do and thus how women define their identity—their sense of self (Akerlof and Kranton, 2000). These norms have changed over time with the decreasing prevalence of the belief that children suffer if their mothers work, as documented by Fernández (2013) and Fogli and Veldkamp (2011), who argue that a learning process can explain salient features of the development of female employment. Within and across countries attitudes towards working mothers and corresponding differences in the extent and generosity of work-family policies are potential explanatory factor of remaining gaps (Olivetti and Petrongolo, 2017). Empirically separating the importance of attitudes and norms from institutional factors has proved hard, however, since the two are inherently linked (Alesina and Giuliano, 2015; Campa and Serafinelli, 2018).

In this paper I provide empirical evidence from a unique setting in Switzerland that the strength of beliefs regarding the harm children suffer when their mothers work affect both maternal labor supply and fertility substantially, at identical levels of work-family policy generosity. Specifically, I compare outcomes of women born into the French and German language regions at the language border in Switzerland, which does not coincide with geographical or institutional borders. I document that on the German-speaking side of this border the belief that mothers should not work while the child is below school age is much stronger than on the French-speaking side, similar to the difference observed between France and Germany. Using census data spanning the period 1970-2000, I follow one cohort of Swiss women born in the 1950s that I observe both as mothers of young children and when their childbearing years have passed. I find that German-born women are between 15-25% less likely to be employed as mothers of young children and 20-25% more likely to have remained childless compared to their French peers. Based on a broad set of robustness checks I argue that these differences are not driven by compositional differences due to endogenous mobility, differences in preferences related to work or fertility in general, educational and marriage market outcomes, characteristics of the labor markets, extent and generosity of work-family policies or child-care availability.

I propose that a framework incorporating a different identity concept—the sense of what it means to be a good mother—among German and French speakers can explain both lower maternal employment and higher childlessness among German women in a tractable way. I augment a version of Becker's (1960) classical household model by an identity parameter that captures the psychological cost of deviating from the norm of being a stay-at-home mother along the lines of Akerlof and Kranton (2000). Consistent with the model's predictions, the main margins where I find differences at the language border are employment of mothers of young children—the choice of whether or not to conform to the norm once a child is present—and extensive margin fertility—the "opting-out" solution to avoid being subject to the behavioral prescription. I find that French- and German-born women have comparable employment rates before they are mothers and after their youngest child reaches school age. Furthermore, I do not find that other margins, such as hours of work, the number of children, and age at first birth are significantly affected. I document that the language border difference is mainly driven by women with higher education, which can be reconciled with the model's predictions under mild assumptions on preferences.

The importance of norms and gender identity differences for female employment and fertility is studied by a growing literature (Bertrand (2011) provides an excellent summary). Bertrand et al. (2016) is a recent empirical study demonstrating the importance of gender identity norms for gender differences in labor market and family outcomes. Fernández and Fogli (2009) use an epidemiological approach and find that cultural origin matters for fertility and female labor supply of immigrants in the U.S., while Vella (1994), Fortin (2005) and Giavazzi et al. (2013) demonstrate the importance of attitudes regarding the role of women for female employment using survey data. How working mothers are viewed in society has received particular attention. Fortin (2005) uses the term "mother's guilt" to describe the psychological cost borne by mothers torn between family values and egalitarian views and finds that women who think that working mothers can establish just as warm a relationship with their children as mothers who do not work have higher labor supply. Similarly, Fernández (2013) and Fogli and Veldkamp (2011) explain the S-shaped development of female labor force participation in the U.S. using a learning process about the potential harm children suffer if their mothers work. A few papers have made the connection between norms regarding working mothers and fertility and the general descriptive finding is that if working mothers are viewed unfavorably, fertility is lower (Rindfuss et al., 1996, 2003; Borck, 2014; Ruckdeschel, 2009).[1] The results at the language border thus broadly correspond to the general finding in the literature. To the best of my knowledge, however, this is the first paper where identification of the importance of norms regarding working mothers is possible without relying on a potentially selected population, and without confounding differences in attitudes with differences in the institutional setting.

This paper is related to a rich literature that studies the longitudinal and cross-sectional relationship between female employment and fertility. The long-run decline in fertility and increase in childlessness that has accompanied rising female wages has not surprised economists as Willis (1973) in his formulation of Becker's

[1] At the cross-country level, differences in culture, norms and values, are amplified by institutional differences in child-care subsidies and availability, school policies, and parental leave regulations, among many other factors (Algan and Cahuc, 2006). Correspondingly, generous work-family policies have been shown to be associated with higher female LFP and fertility (D'Addio and d'Ercole, 2005; Lauer and Weber, 2003; Del Boca and Sauer, 2009; Olivetti and Petrongolo, 2017). The theoretical importance of market purchased child-care in reconciling secular trends with the cross-country relationship is explored by Ahn and Mira (2002).

(1960) classical household model already proposed that, if the production of children is intensive in the wife's time, the substitution effect from rising wages likely dominates the income effect.[2] The pattern that countries with higher female employment such as France and the Scandinavian countries tend to also have higher fertility, however, are not easily rationalized in the classical model. Somewhere between 1980 and 2000, a robust positive correlation between fertility and female LFP has emerged (Ahn and Mira, 2002; Adsera, 2005; Feyrer et al., 2008). If rising wages are responsible for both rising female employment and declining fertility due to a strong substitution effect, this correlation should be negative in the cross-country dimension. Differences in norms and work-family institutions (e.g. parental leave system or child care availability) could rationalize this pattern (Borck, 2014). Comparing the results from the French-German language border to the same cohorts in France and Germany back-of-the-envelope highlights that up to 40% of the cross-country difference could be attributable to the difference in just one cultural trait: the strength of the belief regarding the harm children suffer if their mothers work.

The main contribution of this paper is providing evidence from a unique setting that norms related to working mothers and how they shape female identity play an important role in understanding maternal employment and completed fertility, at identical levels of work-family policy generosity. On the one hand, this result is a cautionary tale regarding the interpretation of cross-country patterns and the role played by differences in work-family policies since it is often impossible to isolate one from the other. One particular example is the puzzle that fertility and female labor force participation are positively correlated in the cross-country dimension. Given the language border result, differences in the strength of the belief whether mothers should work when their children are young provide one resolving mechanism. A second contribution is the result that a societal norm preventing mothers from working may be responsible for lower fertility if labor market opportunities of women expand. The trend of decreasing fertility has especially affected countries such as Germany with a traditional role model for women. The language border results help make sense of this pattern. Taking the cultural contribution seriously, one would expect a natural rebound of fertility as the traditional role model decreases in importance. Additionally, my results provide arguments that work-family policies are especially important in those countries if policy makers wish to speed up this development.

The rest of the paper is organized as follows. Section 2 provides background on the language border setting in Switzerland, Section 3 describes the data used in the empirical analysis, Section 4 presents evidence on differences in attitudes between German and French speakers and discusses how these can affect economic outcomes with an identity framework in a model of the household, Section 5 discusses the estimation strategy, Section 6 presents the empirical results, and Section 7 concludes.

[2]The prediction that increasing female employment is accompanied by decreasing fertility is revisited by Jones et al. (2010), who derive rigorously the possible set of theoretical assumptions consistent with a negative correlation between wages and fertility. They find that time-intensive production of children is a central piece to generate this relationship in many different formulations of the model.

2 The French-German Language Border in Switzerland

There are four official languages in Switzerland: German (65.5% of the 1970 population), French (18.3%), Italian (11.6%) and Romansh (0.8%).[3] Figure 1 shows the geographical distribution of the four languages, shading municipalities according to their administrative boundaries and majority language spoken by residents as reported in the 1970 census, the earliest census that was fully digitized and closest in time to the year of birth of my main sample. The German- and French-speaking Swiss are segregated geographically, resulting in a sharp French-German language border that runs between municipalities in North-South direction. The border does not coincide with cantonal (state) borders, the main institutional entities in Switzerland, which have considerable legislative authority regarding e.g. schooling system, taxes, and social assistance, similar to the states in the U.S. There are three bilingual cantons (states) with both French and German speaking municipalities: Berne, Fribourg, and Valais (from North to South). The majority language in municipalities is quite stable over time. From 1970-2000, only two (small) municipalities changed majority from French to German or vice versa.[4]

Language and identity are closely associated (Clots-Figueras and Masella, 2013; Falck et al., 2012), as a common language provides the means for the emergence and maintenance of norms and values within a group, and limits external influence. While these differences may be overshadowed by within-group differences at the global level (Desmet et al., 2017), salient differences exist at the local level. Speaking a language fosters a person's identity as a member of an ethnolinguistic group and directly shapes preferences (Chen, 2013). In Switzerland, media outlets such as newspapers and television are organized by language regions (Eugster et al., 2011). The empirically uniquely appealing feature of the setting in Switzerland is that the "border" separating members of the French and German language groups is not really a border in the usual sense of the word but a cultural divide.

The North-South line separating municipalities with French and German speaking majorities (what I call the "French-German language border" in this paper) does not coincide with geographical or political borders but cuts through homogeneous terrain. The Alps, the main geographical feature in Switzerland, run West to East in the Southern part and national parties represent ideologies not language groups. How the language border could have been stable over long time periods absent major geographical or political divides has been studied by linguists (see e.g. Rash (2002)). Decentralized federalism, proportional representation, and the protection of language minorities are considered to be important contributors, as is a long tradition of bilingualism (McRae, 1983). As I will document below, these characteristics of the Swiss language setting lead to similar socioeconomic and -demographic composition of the population residing near the border, implying similar settlement patterns and structure of the local economy.

[3] The languages in their written form largely correspond to the official languages in Germany, France, and Italy. However, their spoken forms manifest in various dialects, which differ (sometimes dramatically, e.g. the Swiss-German spoken in the canton of Valais) from the spoken languages in the surrounding countries. "official" refers to the fact that the languages have equal status under the constitution.

[4] There are some changes over very long time periods. From 1860-2000, 28 municipalities ever saw a change in the language spoken by the majority from French to German or vice versa (out of 2,896 municipalities in 2000). See "Eidgenoessissche Volkszaehlung 2000: Die Raumgliederungen der Schweiz", by Martin Schuler, Pierre Dessemontet, and Dominique Joye, FSO Neuchatel, 2005

Balanced composition of the population and sectoral structure does not imply economic integration, however. This feature has been studied by Cattaneo and Winkelmann (2005) looking at earnings differentials. They find no evidence that labor markets are separated at the French-German border, thanks to bilingual labor markets and commuting. Another piece of evidence in this direction is the assignment of municipalities into labor market regions by the Federal Statistical Office. These regions are defined based on censal commuting patterns and capture local labor markets. As shown in Figure A.3, the language border cuts through three labor market regions.

Labor market integration should also be reflected in hourly wages. Eugster et al. (2017) show that male wages are smooth at the border. I repeat their exercise for Swiss women using data from the Labor Force Survey. I limit the sample to women age 20-55, interviewed between 1991 and 2000. Figure 2 plots average log hourly wages by distance to the language border. Distance in this figure is the shortest driving distance in kilometers from the respondents' municipality to the language border separating the French and German language regions. I discuss in detail how the distance measure is constructed in Section 3. Female wages vary smoothly around the border and there is no indication that women from either language region earn more or less per hour of work. Furthermore, as shown by Eugster and Parchet (2018), residential mobility pressure leads to balanced local tax rates.

Given this unique setting of a population with different language identities but otherwise remarkably similar economic circumstances, I argue in this paper that the language border provides the possibility to empirically explore the potential role of culture or norms and values on fertility and female labor market outcomes, holding constant what are usually the main explanatory variables: labor market and family policies, child-care availability, wages, and taxes.[5] The goal of the language border contrast is not to establish the causal effect on e.g. female employment of being German instead of French. Arguably causality is an ill-suited concept for cultural contrasts. As I will argue below, the language border contrast instead offers insights into the potential importance and magnitude of cultural factors as factors in explaining differences in female employment and fertility.

3 Data

The main data source for this paper is the harmonized Swiss population census 1970-2000, which contains a selection of census questions harmonized over time. I match these to additional variables (working hours, retrospective fertility) from the un-harmonized versions provided by the Federal Statistical Office under a data confidentiality agreement. These data cover the population living in Switzerland at the time of the census, with detailed information on residence, municipality of birth (the municipality where the respondent's mother lived at the time the respondent was born), household structure, demographics, and labor market outcomes. The geographically smallest units available are municipalities (there were 2,896 as of 2000 and the earlier censuses

[5]Other papers have studied the demand for social insurance (Eugster et al., 2011), trade (Egger and Lassmann, 2015), unemployment (Eugster et al., 2017), and retirement (Cottier, 2018). The fact that unemployment durations are higher among speakers of Romance languages (Eugster et al., 2017) potentially interacts with female labor supply. I will discuss this in more detail in the empirical framework and results sections.

use the 2000 boundaries in the harmonized version), with a median size of 7.25 square kilometers.

The focus of this paper is on completed fertility of women and the labor supply of mothers. These two outcomes have to be measured at different points in time, as a woman's childbearing age is usually assumed to end sometime after reaching age 40, while mothers' labor supply has to be measured earlier. Since census data are only available every 10 years, I therefore focus on one 10-year cohort of Swiss women, born 1951-1960. These women are observed in 1970 at age 9-19, in 1990 at age 29-39, when many of them were mothers of young children, and in 2000 at age 39-49, when most of them had completed having children (censuses are carried out in December). In the 1980 census there is unfortunately no place of birth information. I thus only observe the same women, as measured by place of birth, in 1970, 1990, and 2000. I focus on mothers of children below age five when looking at employment throughout. This is below kindergarten age in all cantons (at the time) and thus captures a period when one parent needs to stay at home or external care is required if both parents want to work.

This cohort of women is on average 34 years old in 1990 and 44 years old in 2000. This illustrates the trade-off in choosing the cohort boundaries, as some mothers are not observed while their children are below age five and some women of this cohort have children after the 2000 census. According to the Swiss birth register (BEVNAT), which I have from 1969 to 2008, 99.6% of births of this cohort have occurred by the end of 2000.[6] Figure A.5 shows the histogram of births of women born 1951-1960 from the birth register. Based on years of birth of the children available in the 2000 census I observe 43.1% of the mothers among the 1951-60 cohort as mothers of children below age five in 1990. I show robustness checks varying the cohort window in Table A.3.

I construct the language border, and distance to the border, as follows. In a first step I assign each municipality either to the French or German language region based on the majority language spoken by its residents in 1970. I use the 1970 census to get the majority language as closely as possible to the time the women of this cohort were born, but using 2000 instead makes little difference in practice, since only two (small) municipalities would be assigned to a different language region. Assigning these language regions to the administrative municipality boundaries (provided by GEOSTAT, Federal Statistical Office, Neuchatel) yields Figure 1. As can be seen in the Figure, the French- and German-speaking municipalities form (almost) contiguous regions.[7] In a second step, I use GIS software to obtain the intersection of the French- and German-speaking region, which is what I refer to as the language border in this paper.[8] The language border is thus the union of administrative boundaries that separate French- from German-speaking municipalities.

In a third step, I intersect the language border with major roads to get "crossing points". To this end I use openstreetmap data, which contains the road network.[9] This database contains data from federal agencies (and cantonal authorities) in Switzerland and volunteers contributing through the wikipedia-like online portal. I

[6] Of the women born in 1960 (age 39/40 in 2000), 97.8% and 98.5% of births have occurred in the French- and German-speaking regions, respectively. Note that the census was carried out in December of 2000.

[7] There are a handful of small German-speaking "exclaves" in North-West of the French-speaking Jura range. I ignore these and assign them to the French-speaking region. Since the area is sparsely populated it makes little difference whether I construct additional border segments around those exclaves.

[8] I used the open source software QGIS, version 2.8.6-Wien.

[9] Specifically, I downloaded the Switzerland "padded hardcut" history file timestamped 2015-03-01 15:49 from planet.osm.ch.

extract major roads (attribute 'motorway', 'primary', 'secondary' or 'tertiary) to exclude agricultural tracks and use GIS software to get the points where these roads intersect the language border. In a fourth step, I calculate the shortest road distance from each municipality center to all the border crossings.[10] These municipality centers are provided by the Federal Statistical Office in GEOSTAT along with the administrative boundaries. They correspond to the commercial and/or political center of the municipality and were placed by hand (by FSO staff). The distance to the language border measure in my analysis is then the shortest road distance from the municipality center to a border crossing, i.e. the shortest route to cross into the other language region.

In the empirical analysis I rely only on women whose mother lived in a municipality within 20km (12.4 miles) of the language border at the time they were born. This "language border sample" of women born close to the language border between 1951-1960 comprises 50,743 women in 1970 shrinking to 49,742 as of the 1990 census and 48,591 in 2000 (the 1980 census did not ask for the place of birth). Population is roughly balanced at the border, as shown in panel (a) of Figure 3 and the 20km window leads to a balanced sample size overall, as shown in panel (b) of Figure 3. More importantly, this restriction excludes women born in bigger cities (e.g. Bern (German speaking) at 23km or Lausanne (French speaking) at 53km from the border). In the figures, I include women born within 50km (31.1 miles) of the border to show trends when moving away from the border sample. Figure A.4 plots the map of Switzerland where municipalities included in the empirical analysis are shaded lightly. I also draw the constructed language border and border crossing points. As can be seen, the 20km restriction includes a substantial number of municipalities, the main unit of variation in my analysis. Distances increase more quickly and there are fewer border crossings in the southern part, which is more mountainous. Table 2 below shows descriptive statistics for the municipalities in the 20km window.

Figure 4 plots the share of individuals indicating French (panel a) or German (panel b) as their main language among speakers of the four official languages (German, French, Italian, and Romansh) in the 1970 census. Both shares change abruptly as one crosses the constructed border. This motivates the idea behind the empirical approach, which is to contrast outcomes of women born on either side of the border. Those born on the French-speaking side were born into and mainly exposed to the French culture while growing up whereas those born on the other side grew up in the German culture.

Additional variables capturing the local labor market and child care situation come from the Swiss enterprise census (betriebszählung), a census of second and third sector firms carried out every couple years that gives me the number of firms and workers (including industry and occupation) on the municipality level. I use the 1985, 1991, and 1995 waves to calculate the number of jobs and firms (and growth in these variables) at the municipality level. I also use data from 1995, the first wave where it is possible to separately identify workers employed in child care (mostly nurseries). From this wave I calculate the number of child care institutions and

[10] I used the open source software graphhopper, version 0.5.0, downloaded from github.com/graphhopper/graphhopper for all routing in this paper, and the same openstreetmap extract as used for the construction of the crossing points. I compared the distance matrix from these sources to the proprietary distances provided by a search provider for earlier papers (Eugster et al., 2017). Where postal codes coincide with the statistical boundary of municipalities the two sources lead to similar distances. The main advantages of the openstreetmap data together with the municipality centers (as of 2000) are first that I do not have to aggregate municipalities because postal codes and statistical municipalities do not always coincide. Second, I can calculate routes to the language border instead of routing to municipalities on the other side. I mainly gain precision due to this procedure, the point estimates are similar if I use the same data as in Eugster et al. (2017).

the full-time equivalent workers employed in child care at the municipality level.

4 Framework

Switzerland provides a unique setting to contrast outcomes between different cultures as captured by language-region affiliation. Despite widespread bilingualism and tightly integrated labor markets, norms and values differ markedly between German and Romance language speakers in Switzerland (Eugster et al., 2011, 2017). One particularly salient disagreement, especially between French and German speakers, concerns mothers' labor supply. I document in this section that, comparable to the difference between France and Germany (Ruckdeschel, 2009), German speakers in Switzerland believe more strongly that children below school age suffer if the mother works compared to their French speaking peers.

Panel (a) in Figure 5 shows average responses to the World Value Survey (WVS) question "A pre-school child is likely to suffer if his or her mother works" for a selection of countries separating the Swiss into French- and German-speaking respondents according to language of the interview. The German-speaking Swiss are on average most likely to agree that children suffer if the mother works, almost identical to the average response given in Germany. The French Swiss are less likely to agree, as are people living in France. The least likely to think that pre-school children suffer if their mother works are respondents from Denmark whereas the US is in between Denmark and France. Panel (b) in Figure 5 shows average responses to the WVS question "A working mother can establish just as warm and secure a relationship with her children as a mother who does not work". The German Swiss are least likely to agree with this statement, followed by Germany and the US. The French Swiss are on average more likely to agree and closer to values held in France and Denmark.

Overall the cross-country comparison highlights that the German Swiss have values regarding working mothers closely aligned with people living in Germany whereas the French Swiss align more with France. One channel through which values could align by language are news media. Television channels from Germany and France broadcast in Switzerland and newspapers and periodicals from those countries are available in most Swiss shops. There are Swiss television channels broadcasting in either French or German, and Swiss newspapers are also language specific. As discussed in Eugster et al. (2011), segregation of media and the influence of opinions from France and Germany are likely factors in explaining differences in attitudes within Switzerland.

There are potentially two factors driving attitudes towards labor supply of mothers. On the one hand, the mother's time with the child while it is young may only be imperfectly substitutable with the father's time, care by grandparents, or professional child-care personnel. Fortin (2005) uses the term "mother's guilt" to describe the feeling of guilt mothers who believe that this is true may feel when working instead of taking care of the child. On the other hand, the "breadwinner" model of the family ascribes the role of homemaker to women and the labor supply of married women is thus generally restricted, not just when there is a child below school age. To disentangle these two factors I compare survey answers from the International Social Survey Programme (ISSP) on Work and Family (2002) and the European Values Survey (EVS, 2008) within Switzerland in Table 1.

In Panel A I look at the ISSP question that asked respondents whether they thought that women should

work with a child under school age and if the youngest child is at school. The share of respondents indicating that women should work full-time with a child under school age is low among both French and German speaking respondents in Switzerland. Regarding part-time work and staying at home there is a big difference between the two groups. Whereas French speakers are likely to think that women should work part-time, their German speaking peers think these women should stay at home. The differences are 22.6 and 25.9 percentage points, respectively. When the youngest child is at school these differences largely disappear.[11] This pattern matches the difference observed in the WVS questions, shown in Panel B. German speaking respondents are statistically significantly less likely to think that working mothers can establish just a secure and warm relationship with their children as mothers who do not work. Furthermore, they are more likely to think that a pre-school child suffers with a working mother.

Regarding the general role of women, shown in Panel C, there are small and statistically insignificant differences in average responses. French and German speakers are roughly equally supportive of the statement that men should be given priority if jobs are scarce, that women really want a home and children (as opposed to a job), or that being a housewife is as fulfilling as a paid job. This is suggestive evidence in favor of the hypothesis that German speakers are not per se more opposed to women working, or hold a more traditional view of the household, but are mainly concerned with the child's outcomes and the mother-child relationship.

In Panel D I compare attitudes regarding fertility. There is only a small difference regarding whether children are important in marriage but French speakers are more likely to think that women need children in order to be fulfilled. On the other hand, German speakers are more likely to think that it is a duty towards society to have children. Both groups are equally likely to think that people should decide themselves to have children. Overall the results regarding fertility preferences are mixed. I discuss this point further in Sections 4.1 and 6.4.

Survey evidence from the WVS and ISSP shown so far highlight that French and German speakers in Switzerland have different attitudes towards working mothers. Especially if the child is below school age German speakers do not think that the mother should work. These are aggregate results and there are not enough observations to do a comparison at the language border, however. To see whether attitudes towards working mothers of French- and German-speaking Swiss differ at the language border I rely on data from national votes.[12] These votes capture opinions from a much larger sample of the population and allow me to study the difference in attitudes at the language border. I focus on three votes on the introduction of maternity insurance, which was only introduced in Switzerland in 2005 after the corresponding referendum was accepted at the polls, and one initiative on tax deductions for stay-at-home parents. In Figure 6 panels (a)-(c) I plot

[11] The respondent's gender does not seem to strongly affect the comparison. The difference in the shares answering "Stay at home with child under school age" is 28.93 among women and 22.74 among men between German and French speakers with standard errors of 5.29 and 5.90, respectively. There might be concerns regarding ex-post rationalization. If French-speaking mothers are more likely to work because of factors unrelated to attitudes they might attempt to rationalize their action ex post, or vice versa for German-speaking mothers (and their partners). I split the sample into childless women and mothers to investigate this possibility. The difference in the shares answering "Stay at home with child under school age" among childless women is 31.37 (s.e. 9.43) and 28.29 (s.e. 6.37) among mothers. Both of these are statistically significant and we cannot reject that they are the same. This argues against ex-post rationalization as the main factor explaining differences in attitudes.

[12] Switzerland is a half-direct democracy and Swiss citizens go to the polls several times per year in federal votes on all kinds of policy questions. Votes on federal initiatives are held if there are at least 100,000 eligible voters demanding a change of the constitution. A vote can also be triggered by a referendum to overturn parliamentary decisions, requiring 50,000 signatures. Eugster et al. (2011) analyze a set of votes and show that the German-speaking Swiss are less in favor of redistribution, e.g. through old-age insurance, than their peers speaking Romance languages. They also study the three votes on maternity insurance I consider here. Results are not directly comparable since I focus on the French-German comparison and exclude Italian and Romansh municipalities.

the share yes votes in three votes on the introduction of maternity insurance (and parental leave in the 1984 case) held in Switzerland over the period 1984-2004. The details were different in each case, but each initiative included paying mothers a fraction of their pre-birth wage for a defined period after birth (80% of the last pre-birth wage for a leave of 14 weeks in the vote held 2004). In panel (d) I plot the result of the 2013 vote on tax deductions for parental child-care, which demanded that stay-at-home parents are allowed to deduct the same amount for child care as parents who have their child cared for by a third party. Each dot in the figures represents the share yes votes cast in municipalities within 1km bins in road distance from the language border (see Section 3 on how the distance measure is constructed). A discontinuity at the language border is visible in all these votes. Support for maternity insurance is stronger in the French-speaking part while the German-speaking part is more strongly in favor of making it financially attractive to have a stay-at-home parents.[13] Importantly, attitudes towards work-family policies align with the descriptive survey evidence and change abruptly at the language border, at *identical* levels of actual policies.

4.1 Identity in a household model

There is evidence for a strong belief that children suffer with working mothers in the German-speaking part of Switzerland, whereas this is weaker in the French-speaking part. Adopting the terminology in Akerlof and Kranton (2000), these results can be interpreted as showing that German speakers have a different concept of the behavior of a "good" mother. The social category "mother" is more strongly associated with the prescription that the mother stays at home as long as the child is below school age in the German region. This societal norm has both an internal and external component. Mothers who violate the prescription suffer a loss in their sense of self. The internalization of the prescription leads to feelings of guilt and a diminished image of oneself when deviating from the norm. Fortin (2005) specifically refers to this psychological phenomenon as "mother's guilt". Deviation by one person causes anxiety in other members of the group when they meet. They may resolve this anxiety to some extent by "punishing" the perpetrator, e.g. by bad-mouthing her. The word "Rabenmutter" (raven mother) in the German language specifically describes mothers who do not live up to the societal ideal by neglecting their children.

As argued by Akerlof and Kranton (2000), differences in norms and values have consequences for economic outcomes. In the Swiss setting, German-speaking mothers feel a sense of guilt when working, and face social pressure to conform to the ideal of the stay-at-home mom. Even if German-speaking women face the same labor demand and market wages as their French peers, their fertility and labor supply choices will thus look differently. The main theoretical device to study the household division of labor and fertility is to think of the household as solving a joint optimization problem, an idea pioneered by Becker (1960). The problem involves maximizing a household utility function subject to constraints. Following Akerlof and Kranton (2000), I analyze how labor

[13]The results on maternity insurance have been argued by Eugster et al. (2011) to be in line with a higher demand for social insurance in regions where Romance (or Latin derived) languages are dominant. The large difference at the German-French language border might therefore reflect both a difference in norms regarding working mothers and a difference in the demand for social insurance. The gfs.bern institute conducted exit polls after the 1999 vote and concluded that ideological concerns played a major role especially among politically right-leaning individuals in the German-speaking area. See "Vox Analysen eidgenössischer Urnengänge" Nr 68, gfs. Forschungsinstitut, Bern, Juli 1999.

supply and fertility choices interact with cultural differences in female identity by modifying the utility function in a way that captures both the psychological cost of violating the norm and an agent's choice of whether to be in the social category to which the norm applies.

Consider a household consisting of a wife and husband maximizing joint utility $u(c, n)$ from the number of children n and the consumption of a composite good c, which can be thought of as status-of-living consumption.[14] Children are produced by the wife according to $n = 1 - l$, where 1 is total time available and l is time spent working in the market. As Jones et al. (2010) show, time intensity of the production of children with respect to the woman's time is a crucial feature so that the model is able to reproduce the empirical pattern that the number of children is decreasing in wages. The husband always works in the market and contributes income y. The household may allocate some of the wife's time to market work (l) and earn wl, where w denotes the wife's wage. Finally, the budget constraint with the price of c normalized to one is $c = wl + y$.[15]

I ignore the dynamic problem of when in her life cycle a woman's labor supply l is taking place and make the simplifying assumption that $l > 0$ and $n > 0$ implies that the wife is working *and* that there are young children in the household. In the identity framework, a household choosing $n > 0$ implies that the wife belongs to the social category "mother". If the household also chooses $l > 0$, then the wife is violating the prescription of what a mother is supposed to do, namely stay at home and take care of the children. I refer to the choice $l > 0$ and $n > 0$ as the household arrangement "working mother". Conforming to the norm is given by the choice $l = 0$ and $n > 0$, the household arrangement "stay-at-home mother". The model also allows households to opt out of the social prescription that mothers should stay at home by choosing $l = 1$ and $n = 0$, the "childless woman" arrangement. This avoids putting the wife into the social category "mother" and her labor supply is thus no longer subject to identity-based prescriptions.

Akerlof and Kranton (2000) propose to think of identity as a modification of the utility function which captures both the cost of violating the norm, a diminished sense of self and punishment by peers, and the potential to opt out of the social category to which the norm is prescribed. A simple way to capture this idea is to define household utility as follows

$$U = \begin{cases} u(c, l) & \text{if } n = 0 \text{ or } l = 0 \\ u(c, l) - I & \text{else} \end{cases}$$

The identity cost I here is a summary parameter that captures both the internal and external utility cost of deviating from the social norm. Households are only subject to this cost if they choose the "working mother" arrangement with $n > 0$ and $l > 0$. I will ignore the equilibrium aspect of how—in the aggregate—household

[14] I focus on the optimization problem of heterosexual couples instead of individuals or homosexual couples as it still is the dominant form of how households are organized, I cannot empirically distinguish between the role played by the internalized values of the woman and her partner's influence, and because it is tradition in the fertility literature. I also follow Willis (1973) and ignore the distinction between number and quality of children. One interpretation of n in this model is that it captures the utility parents gain from investing time into their children.

[15] This formulation chooses a very simple structure for the production side. The main emphasis is on the time-intensity of the production of children. It is easy to make this more general, following Willis (1973) or Jones et al. (2010), by e.g. allowing convexity in the wage schedule or adding child quality and monetary investment into children. I ignore those aspects as the focus in this paper is on the preference side.

choices affect the degree to which violators suffer from punishment but the model could easily be extended along this dimension.

One direct consequence of formulating the problem this way is that the working mother arrangement is less attractive than staying childless or being a stay-at-home mother. Whether a household decides to defy the social norm or not depends on preferences and home production parameters, but the direction of change if identity costs are imposed (or increased) is unambiguous. In the aggregate, the same holds true. Comparing societies F and G with $I_F < I_G$ and some equally distributed parameters we would expect, ceteris paribus, higher labor supply of mothers and lower childlessness in the former. It does not make a clear prediction regarding total investment in children or hours of work, however.

This framework formalizes a simple identity-based story for how a strong norm in the German-speaking society that mothers should stay at home when their child is below school age could lead to lower maternal employment and higher childlessness compared to their French-speaking peers. The model does not illuminate *why* this norm is more prevalent among German speakers but takes it as given. One particularly intriguing microfoundation for such a norm is discussed in Fernández (2013) and Fogli and Veldkamp (2011). What these papers propose is that there is uncertainty in society regarding the harm children suffer if their mother works. This uncertainty may have been high in the past and the belief that children suffer negative consequences may have been widespread, even if children actually do not suffer. Over time, society learns and uncertainty is reduced, which is shown to explain salient features of the evolution of female employment. A straightforward application of this theory to the French-German divide is that the French-speaking world learned faster and that the French-speaking Swiss are connected to French-speakers in other countries through media and personal connections. The stronger norm that mothers should stay at home with their children in the German-speaking world would then capture that uncertainty is still high and/or the belief is still that children suffer. In this theory, from a long-run perspective, the norm is a temporary reaction by society in an evolutionary learning process. The contribution of the identity framework is then that not only maternal employment but also fertility choices are affected by the aggregate state of uncertainty.

In appendix B I explore how labor supply and fertility choices interact with potential wages in the identity framework. Since the prescription that mothers should not work enters household utility as a simple constant cost parameter, higher potential wages should dampen the importance of conforming to the social norm. Higher labor market returns afford higher utility and thus afford compensation for the loss suffered from violating the norm. As I show in the appendix, this is indeed the case in the aggregate if households are heterogeneous with respect to female wages and preferences for children. It holds that the share of households choosing the "working mother" arrangement is higher among higher-wage women. However, this also implies that more households are affected if identity costs increase, which is the relevant comparative statics exercise if one is interested in comparing societies with high and low values of I. I show that $I_F < I_G$ (it is less costly to work as a mother in the French group than in the German) implies that both the difference in maternal employment and childlessness is higher between F and G among women with higher wages if preferences exhibit sufficient substitutability between children and status of living consumption, a standard assumption in order for this

model to replicate the empirical pattern that fertility and female wages are negatively related.

One could further enrich the model by the social category "woman", which might be associated with the prescription that women should not work, or that women should have children. I ignore these dimensions in the model. Survey evidence from Switzerland does not point towards major differences in whether women should work or not in the French- and German-speaking parts. We only find disagreement regarding female labor supply when women are mothers of children below school age, as shown in Table 1 above. There is some evidence that French-speaking Swiss consider having children more important. However, we equally find that German-speakers are more likely to say that it is a duty towards society to have children, and that there is similarly high agreement with the statement that people should decide themselves to have children (96% of respondents in Switzerland agree with the statement). On balance, I thus do not find strong evidence for a norm that women should have children in either language region. I discuss this point again in light of empirical results in Section 6.4.

5 The Language Border Contrast

In this section I discuss how I contrast female labor market and fertility outcomes with respect to cultural upbringing by focusing on the differences observed between women born on the French and German side of the language border in Switzerland. I focus on place of birth instead of place of residence (which is what e.g. Eugster et al. (2017) do) for two main reasons. First, it allows me to compare the *same* women in 1990 and 2000 since place of birth does not change over time, minus death, emigration, and measurement error. Second, endogenous choice of residence is a major concern when contrasting choices that are potentially shaped by peer pressure. One way to evade social "punishment" is to move to a place where peers agree with one's choices.

The main focus is on one cohort of Swiss women born 1951-1960 which I observe as mothers of young children in the 1990 census and after they have (mostly) completed their childbearing years in the 2000 census. The main margins at which differences are expected to occur according to the stylized identity framework outlined above are employment of mothers, i.e. the share of households choosing the "working mother" arrangement, and extensive margin fertility, or the share of households choosing the "childless woman" arrangement.

Figure 7 plots the share of mothers of children below age five who are employed in 1990 (at age 29-39) and the share of the same cohort who end up childless in 2000 (at age 39-49) by distance from the municipality of birth to the language border. In line with the identity-based story outlined above, German-born women are less likely to work when there is a young child in the household (panel a), and more likely to remain childless (panel b). A sharp discontinuity is visible at the language border. Despite growing up only a few kilometers apart, there are large differences between German-born and French-born women when we look at their employment as mothers and their completed fertility at the extensive margins.

One potential reason for this difference by place of birth is that women born on the German-speaking side (German-born) are socialized in an environment where the belief that children suffer with working mothers is widespread whereas their peers born on the French-speaking side (French-born) are exposed to a weaker belief

or not exposed to such a belief at all. There are of course many other potential factors that shape labor supply and fertility choices. To put structure on the language border contrast by place of birth I adopt the potential outcomes framework. Let $Y_i(0)$ denote woman i's employment and fertility outcomes if exposed, while growing up, to a weak belief that children are harmed if their mother works and $Y_i(1)$ denote her outcomes if born into an environment with strong beliefs that children suffer with a working mother. In the stylized model, $Y_i(0)$ would correspond to the choice observed if we imposed identity costs I_F and $Y_i(1)$ to the choice under I_G with $I_F < I_G$. The difference in potential outcomes $\alpha_i = Y_i(1) - Y_i(0)$ is the effect of exposure to a strong vs weak belief that children suffer with a working mother on i's outcomes. Let T_i denote whether woman i was exposed to the strong belief ($T_i = 1$) or weak belief ($T_i = 0$) while growing up.

Consider then the following linear parametrization of woman i's potential outcomes motivated by a geographical comparison.

$$Y_{ibr}(j) = j\alpha_i + \theta_i'\gamma + \phi_{ib}'\delta + \psi_{ir}'\tau \quad \text{for } j \in \{0,1\} \tag{1}$$

where θ_i are factors that vary at the individual level, such as parental background, ϕ_{ib} stands for factors that vary by place of birth, such as the school system or sectoral structure of the local economy, and ψ_{ir} are factors that vary by place of residence r, which could be a vector (all places of residence i lived in since birth). The observed outcome is $Y_{ibr} = T_i Y_{ibr}(1) + (1 - T_i) Y_{ibr}(0)$. We are interested in $\bar{\alpha} = E[Y_{ibr}(1) - Y_{ibr}(0)]$. However, only a proxy of T_i is observed. In cross-country studies the proxy that is typically used for T_i is the respondent's country. This leads to the problem of potentially confounding differences in T_i with (unobserved) differences in θ, ϕ, and ψ. The identification strategy in the epidemiological approach (Fernández and Fogli, 2009) is to compare migrants to the US, i.e. the factor identifying T_i is the country of origin. This approach has the advantage that it minimizes differences in ψ, since women live in the same country (the US) but come from different backgrounds. One concern with that approach is confounding differences in T_i with differences in θ (selective migration) and ϕ (structural differences in the country of origin). The language border contrast allows me to go one step further by comparing not only women living in the same country, but women born in the same country, and even the same canton (state).

Let d_{ib} denote the distance from i's municipality of birth to the language border. Based on the descriptive evidence discussed in Section 4 I assume that T_i changes discontinuously at $d_{ib} = 0$, i.e. German-born women are exposed to a stronger belief ($T_i = 1$) that children suffer if their mother works than French-born women, who are exposed to the weaker belief ($T_i = 0$). The language border contrast

$$\lim_{\epsilon \downarrow 0} E\left[Y_{ibr} | d_{ib} = \epsilon\right] - \lim_{\epsilon \uparrow 0} E\left[Y_{ibr} | d_{ib} = \epsilon\right]$$

is consistent for the average treatment effect at the border $E\left[Y_{ibr}(1) - Y_{ibr}(0) | \, d_{ib} = 0\right]$ if potential outcomes are continuous at the cut-off (Hahn et al., 2001). In terms of equation (1) this would require that $E\left[Y_{ibr}(j) | \, d_{ib}\right]$, $j \in \{0,1\}$ is continuous at $d_{ib} = 0$. There are three main concerns with the continuity assumption in this context. First, d_i is not random but a function of the place of residence chosen by i's parents. Second, even

though the language border cuts through homogeneous terrain, the local environment might differ between one side of the border and the other in factors other than the belief that children are harmed by working mothers. These two factors could lead to discontinuities in $E[\theta_i | d_{ib}]$ and $E[\phi_{ib} | d_i]$ and would imply that the language border contrast does not capture differences in norms and values women are exposed to while growing up, but compositional factors and local differences in formal institutions or economic opportunities. The third problem is more subtle and mainly related to how we interpret the language border contrast. German-born and French-born women have different mother tongues and tend to move to different places after growing up. Although there is significant cross-language-region mobility, as documented below, French-born women have a higher tendency to move to French-speaking places, like Geneva, whereas German-born women tend to move to German-speaking places. This does not compromise the "effect" attributed to place of birth. If person i is born on the French side instead of the German side, the place of residence contribution is part of the channel through which place of birth matters. However, it does threaten the attribution of the language border difference by place of birth to the cultural environment woman i is exposed to while growing up due to discontinuities in $E[\psi_{ir} | d_{ib}]$. These concerns are discussed in detail in what follows.

Taking the language border contrast idea to the data, I estimate the difference at the border using the following standard regression discontinuity specification.

$$Y_{ib} = \pi_0 + \pi_1 G_b + \pi_2 D_b + \pi_3 G_b D_b + \epsilon_{ib}, \tag{2}$$

where Y_{ib} stands for outcome variables with b denoting woman i's municipality of birth (the municipality where her mother lived when she was born), $G_b = 1$ if woman i was born in a municipality with a German-speaking majority, and $G_b = 0$ if the majority is French speaking, D_b is the distance in kilometers from i's municipality of birth to the language border, and ϵ_{ib} is an error term. The main sample in my empirical analysis, the "language border sample", are women born within a narrow bandwidth of 20km (12.4 miles) of the language border. This is mainly to limit differences in local characteristics (ϕ_{ib} in equation 1) affecting the border estimate. Since distance only varies by place of birth, I cluster standard errors at the municipal level throughout.

In Section 6 I take specification (2) to the data to estimate the language border contrasts in labor supply and fertility of the cohort of Swiss women born 1951-1960. As Figure 7 shows, German-born women of this cohort are more likely to work when they are mothers of young children and less likely to have children at all. In the remainder of this section, I discuss the main challenges to attributing this difference to the cultural environment these women were exposed to while growing up.

The *first* main concern with specification (2) are compositional differences between women born in French- and German-speaking municipalities that would lead to discontinuities in θ_i and ϕ_{ib}. The distance from a woman's municipality of birth to the language border is not random since her parents chose where to live. To see how this could lead to overestimating the importance of cultural differences consider the language border contrast in the employment rate of mothers of young children (panel (a) in Figure 7). If there is a tendency of well educated women with strong labor force attachment to move to French-speaking border municipalities,

e.g. to be close to Fribourg (which has a university), whereas there is no such tendency for German-speaking border municipalities, then the difference at the border might just reflect that French-born women are more likely to be the daughters of well-educated parents with strong labor market attachment.

To see whether selective mobility of parents is the driving factor behind the language border difference I look at several pieces of evidence. First, I plot the share of mothers of children below age five who are employed in 1970 against distance to the language border in Figure 8. To construct this figure I select from the 1970 census all women age 20-40 who live in a household with a child below age five and calculate their employment rates. These women include parents of the language border sample (i.e. parents of women born 1951-1960) but also younger parents. There is no visible discontinuity at the border, and the border difference estimated according to equation (2) is statistically insignificant (the coefficient is $\hat{\pi}_1 = 0.0269$ with a standard error of 0.0334). The employment rates of mothers of young children were similarly low on the French- and German-speaking sides in 1970 and there is no evidence that women with stronger labor market attachment moved to French-speaking border municipalities.[16]

As a second test of systematic differences in parental background according to place of birth, I use the 1970 census to compare sociodemographic characteristics of the parents of the language border sample. From the 1970 census I select women using the same criteria as in 1990 and 2000, i.e. women born 1951-1960 within 20km of the border. These are the same women whose outcomes I compare in 1990/2000 minus death, emigration, and misreporting of the place of birth. In 1970, these women were 9-19 years old and mostly still living with their parents. Using the household identifiers I match them to their parents ("head of household"/"partner of head"). I then compare the characteristics of these parents by place of birth of the child. Table 2 reports the results of this exercise.

Of the women in the language border sample, 91.5% and 89.6% lived with at least one parent in 1970 in the French and German region, respectively (columns 1 and 2). Columns 3 and 4 show the estimates $\hat{\pi}_0 = 90.5\%$ and $\hat{\pi}_0 + \hat{\pi}_1 = 90.6\%$ of the share on the French and German side of the border at zero distance, respectively. Columns 5 and 6 report the estimate $\hat{\pi}_1 = 0.1$ pctp and its standard error, clustered by municipality of birth.

About two thirds are still resident in their municipality of birth and around 80% in their canton of birth. The differences at the border are estimated to be small and are not statistically significantly different from zero. Whether a mother or father is in the household is also balanced at the language border with a lower probability of observing a father compared to a mother on both sides. The differences in main language (mother tongue) roughly correspond to the aggregate differences shown in Figure 4 above. There are no statistically significant differences in highest educational achievement among mothers or fathers but the point estimates hint at higher rates of secondary education (mostly apprenticeships) relative to primary (mandatory) education among parents of German-born women. There is a difference in the share of mothers that are working. German-born women are 8.3 pctp. more likely to have a working mother at the language border in 1970 (when they are above

[16] Among the same women, the estimated share of those women who are mothers of children below age five is 0.5471 on the French side of the border and 0.5885 on the German side. The border difference is 0.0414 with a standard error of 0.0231, which is marginally significant at the 10% level. Both in terms of employment and fertility, the pattern at the border is thus the opposite of what we observe for the 1951-1960 cohort.

age five), and this difference is statistically significant at the 5% level. This is not directly comparable to the main analysis, where I will look at employment when the child is below age five. However, it is comforting to see that the German-born women are more likely to have had a working mother in 1970, which goes in the opposite direction of the main result. Among fathers there are no significant differences at the border in terms of employment or industry if employed.

Few mothers were working in 1970 and I thus consider their "learned profession" instead of their current occupation. The census questionnaire asked individuals for the profession they had last learned, i.e. acquired a professional qualification in. These are typically apprenticeships but also teacher's degrees or a completed course at university. The majority of the mothers did not hold a professional qualification, which mirrors the high rate of primary education only (the mandatory part of schooling). There are no significant differences at the language border in whether the learned profession was in agriculture, manufacturing, or services. Overall these results suggest that composition in terms of parental characteristics is balanced or go against higher employment of French-born women.

The *second* main concern is that language border differences in labor supply and fertility are driven by municipality-level differences such as the school system or structure of the local economy. Organizing schools is mainly a cantonal responsibility and at the time the language border sample women were children, there were e.g. cantonal differences in school starting age and minimum duration of schooling.[17] The language border contrast helps considerably in minimizing differences in the local environment since it mostly runs within cantons. Furthermore, I can add canton fixed effects or limit the sample to bilingual cantons. A further advantage of the border comparison is that the border runs through homogeneous terrain and there are both rural municipalities and mid-sized towns on both sides of the language border but no larger cities, which helps balance population density and sectoral structure. This is a major advantage compared to cross-country studies where differences in the school system and degree of urbanization are potentially confounding factors.

In Panel D of Table 2 I compare municipality characteristics calculated from the 1970 census (all residents age 15+) by distance to the language border. In terms of absolute population, population density, and the gender ratio we cannot reject that municipalities are the same on either side of the language border. The employment-population ratio is significantly higher in the German region with a border estimate of 5.7 percentage points. This result is in line with Eugster et al. (2017), who find that German-Swiss men spend fewer weeks in unemployment than their French-, Italian-, and Romansh-speaking peers.[18] They attribute this to different

[17] Cantons enjoy considerable authority inter alia with regards to the education system. It is sometimes remarked that Switzerland has 26 education systems instead of one (there are 26 cantons). One source of differences were kindergarten and school starting age, i.e. the age when children can start Kindergarten and when mandatory schooling begins. There have been many changes to this over the years. Differences between cantons were large before the 1985 referendum that harmonized schooling to a considerable extent across cantons. Another source of heterogeneity are differences in the length of mandatory schooling and the ages and rules regarding progression to higher education. At the time my sample grew up, cantonal differences in schooling could thus affect human capital formation. E.g. in Bern and Fribourg entry into kindergarten was allowed from age 4 whereas in Solothurn entry was allowed from age 5. Mandatory primary school started at age 6 in Bern and Fribourg, and age 7 in Solothurn. Mandatory schooling had a duration of 9 years in Bern and Fribourg but 8 years in Solothurn. Tracking and higher education started at 6th grade in Bern and Fribourg and at 7th grade in Solothurn. Furthermore, cantons had different standards regarding teachers. E.g. in Schwyz many teachers were recruited from catholic seminaries. See Egger (1966). Since the majority of women in my sample remain residents of their cantons of birth they are mostly taught in and selected by schools of that canton. Cantonal differences could thus lead to human capital differences that could explain the differences we see at the language border. E.g. it could be that French-speaking cantons are better at teaching the young, which would mean the women have higher human capital, stronger labor market attachment, and continue to work when they have young children.

[18] Eugster et al. (2017) study average unemployment duration of Swiss men by distance from their municipality of residence to

work attitudes in the German and Romance language regions. In terms of attitudes of women this difference would go against the result at the language border, namely higher employment rates of French-born mothers. However, one potential channel through which this could matter for female labor market attachment is a higher incidence of male unemployment. I.e. it could be that French-born women keep a stronger attachment due to a higher risk that their partner loses his job. Based on reported unemployment in 1970 being close to zero, it is unlikely that women were anticipating substantial unemployment risk of their partners.

In terms of highest educational achievement there are small differences between the French- and German-speaking regions. In line with the results for parents, there is a higher share of individuals with secondary education in the German-speaking part, although the difference is not significant at the border. Furthermore, there are small and insignificant differences in terms of the sectoral structure or the share of municipalities classified as "rural" by the Federal Statistical Office.

Overall the language border sample is quite well balanced in terms of parental background characteristics and characteristics of the municipalities of birth. In Section 6 I add all of the variables from Table 2 as controls in equation (2) to evaluate sensitivity of the main border differences in employment and fertility to these variables.

The *third* main concern is that the border differences in labor supply and fertility are driven by the characteristics of the places of residence of these women. These could be economic opportunities in the local labor market or availability of child care. According to the cross-section of individuals sampled in the 1990 census, the majority of Swiss move after completing their education around age 20, but then stay in one place (see Figure A.1 for a cross-sectional perspective in 1990). The mobility pattern in this figure is consistent with low mobility before completing education. Apprenticeships are mostly with local firms and pay low salaries, so that most apprentices stay with their parents. Most students commute to university from their parents' home. Empirically I thus approach this problem from the perspective that the place of residence in 1990, when the language border sample is between age 29-39, is informative for the environment relevant for women's labor supply and fertility choices. In Section 6 I discuss differences in the characteristics of the places of residence. I use two strategies to deal with the concern that differences by place of birth are driven by the environment after growing up. First, I add variables capturing the state of the local economy and day-care availability to specification 2. Second, I add municipality of residence fixed effects comparing the outcomes of women who, in 1990, live in the same municipality.

The preceding discussion suggests that there are no major differences in composition that threaten the language border contrast. However, it also suggests that getting the exact magnitude of the importance of the cultural environment for female labor supply and fertility right is inherently difficult since one can always find variables that are not smooth at the border. On the one hand, I follow Eugster et al. (2017) and interpret differences at the language border as informative for whether $\bar{\alpha}$ is non-zero by adding control variables for a diverse set of factors that could drive the border differences. On the other hand I will show that the border contrast estimates are consistent in magnitude across specifications whatever additional explanatory variables

the language borders separating the German from the French, Italian, and Romansh regions. I depart from their approach by contrasting only at the French-German border and looking at outcomes by place of birth. This shifts the selective mobility problem one generation back but does not completely eliminate it.

I add to the regressions, and substantial even within place of residence, which argues for a strong role played by the different norms and values these women were exposed to while growing up.

6 Results

In the previous section, the emphasis was on smoothness in the environment around and composition of one cohort of Swiss women, born close to the language border between 1951 and 1960. These women grew up only a few kilometers apart, but were exposed to different norms and values at home and in the places where they grew up. In this section, I look at their propensity to work at the time they were mothers of young children and completed fertility towards the end of their childbearing years.

6.1 Employment of Mothers and Childlessness

The first column in Table 3 shows estimates of the unconditional language border contrast estimated according to equation (2). I first focus on the main margins where the stylized model would predict an identity cost of working as a mother to matter. These are extensive margin labor supply at the time when there is a young child in the household (panel A) and whether or not a woman ever had a child (panel B). At the constructed border, women born in German-speaking municipalities are 8.3 percentage points less likely to be working when they are mothers of young children in 1990, and 4.4 percentage points more likely to have remained childless than their peers born in French-speaking municipalities. Both of these differences are in line with the predictions of the stylized model. Growing up in the German culture is associated with a higher psychological cost of working as a mother, or a stronger sense that the correct behavior for a good mother is to stay at home with her children. If women rationally respond to such a constraint we not only expect differences in their labor supply as mothers but also in their decision whether or not to have children.[19]

In columns 2-5 I successively add dummies for canton and labor market region of birth[20] and variables from Table 2 controlling for characteristics of the municipality of birth and parental background. The estimates of the border contrast are not affected to a great degree by the inclusion of these variables. The German born coefficients stay within one standard error of the unconditional estimate. Differences in parental background and characteristics of the municipality of birth appear to be responsible neither for the significantly lower employment of German-born women when they are mothers of young children nor for their significantly higher

[19] Given that there is a difference in extensive margin fertility, comparing the employment of mothers means looking at a selected sample—women who decided to have children, and there are relatively more French-born women among this group. However, we are arguably not interested in the difference in employment by place of birth holding constant whether woman i has children or not, precisely because place of birth would also affect her probability to have children at all. But we might be concerned that the difference in employment rates is driven by differences in extensive margin fertility. E.g. there could be some other mechanism responsible for German women not having children, and this in turn could affect the average characteristics of mothers and their propensity to work. To check whether this could be the case I follow Horowitz and Manski (1998) and compute a worst-case lower bound on the difference in employment. I do not find significant differences in age at first birth (see Table 5), so a first order worst-case scenario would be to assume that all the German-born women among the 4.41 pctp who are not mothers would work if they were mothers. This would lead to a lower bound estimate for the employment difference of $(1 - 0.0441) \times 0.3197 + 0.0441 - 0.4031 = -0.0534$. The standard error of this estimate, calculated by the delta method after estimating a stacked regression, is 0.0249. Hence the difference in childlessness is too small to completely explain the difference in employment rates even in a worst-case scenario.

[20] Municipalities are grouped into labor market regions by the Federal Statistical Office based on commuting patterns from the census. I use the classification from the 2000 census. See Figure A.3.

probability to remain childless.[21]

Adding control variables can be problematic in regression discontinuity specifications. Calonico et al. (2018) derive the probability limits of discontinuity estimators with controls. They show that the discontinuity estimate asymptotically converges to the true discontinuity and a term that depends on the magnitude of the discontinuity in control variables and the covariance of the control variables with potential outcomes. One justification for adding controls is that precision increases without affecting consistency, as long as the additional variables are smooth at the cut-off. That is not necessarily the case in this context. Based on the probability limits in Calonico et al. (2018) my strategy here is rather to see whether the border estimate is affected by the inclusion of controls. If that is not the case, it suggests that either the discontinuities in controls are zero or small enough not to matter, or that the control variables are not strongly linked to potential outcomes.

Additional robustness checks are shown in Table A.2 and Table A.3. In these I limit the sample to women born in border municipalities, vary the bandwidth and functional form, and vary the cohort window. The border differences remain close to the estimate shown in column 1 of Table 3. Based on the stability of the language border contrast I conclude that there is a robust difference in mothers' employment and women's fertility based on place of birth. Growing up in a German instead of a French municipality is associated with lower labor supply when there is a young child and a higher probability of remaining childless. As discussed in Section 5, we cannot yet conclude that these differences are only attributable to differences in norms and values these women were exposed to while growing up. Since many of these women move at some point between being born and when we measure their outcomes, both the economic and formal institutional setting in their places of residence could be responsible for the differences we observe.

As a first step towards addressing whether that is the case, I look at the characteristics of their place of residence in 1990, at the time I observe labor supply. Table A.1 shows means and border differences of variables constructed from the 1990 population census and the 1985-1995 enterprise censuses. I still compare these by place of birth so that the language border difference is indicative of the situation faced by women born close to the border, on the French- or German-speaking side. As the average distance from the language border increases by construction if some women move away from the border we do not expect these to be balanced to the same extent anymore. There are now significant differences in both the employment-population ratio and unemployment rate, as well as the educational composition. There do not appear to be major differences in sectoral structure, which suggests a similar propensity to move to urban and rural areas. The local economy these women face, as measured by the number of jobs and firms in their municipality of residence, are roughly similar as well.

There are fewer day-care institutions and fewer full-time equivalents working in day-care per child in the municipalities where German-born women live in 1990 (the child care measures are from the 1995 enterprise census), although we cannot statistically reject that the difference is zero.[22] A difference is expected here given

[21] As an alternative robustness exercise I limit the sample of women to those born in bilingual cantons. This leads to border coefficients and standard errors of -0.0902 (0.0228) for employment and 0.0344 (0.0104) for childlessness, respectively, when including the same set of control variables.

[22] I obtain the number of establishments and full-time equivalents in day-care at the municipal level from the 1995 enterprise census. This census covered all establishments in the second and third sector. The 1995 wave was the first to report measures for

the lower employment rate of mothers in the German-speaking region and captures the market equilibrium in their places of residence. To fully account for differences in the availability of child-care is difficult. Child-care is mostly handled by municipalities and there are local differences in subsidies, regulations, and prices, none of which I observe. Since a lack of child-care availability is a potentially significant barrier to employment of mothers it is important to note that the provision of formal child care below kindergarten age was generally low in Switzerland at the time. According to the measures from the enterprise census 1995 only 8% of municipalities had any formal child care at all. This is consistent with the result from the Swiss Labor Force Survey. In the 1991-1995 waves employed mothers were asked who the care-taker of their child was while they were at work. The results are shown in Table A.6, separated into language regions according to the main language of the respondent. The majority of children were taken care of by extended family members and few mothers in either language region indicated that their child was with a day nanny or in a nursery. However, more mothers in the French-speaking region employed a nanny or took their child to nursery. At the same time, French-speaking mothers were also more likely to have said that the child-care problem was preventing them from working. These results point to the general lack (and expensiveness) of formal child-care in Switzerland at the time.

Descriptively, these results do not indicate that differential availability of child care is a major reason why fewer German-born mothers work. Since I cannot rule it out completely, however, and since there are significant differences in other potentially important variables like male employment and unemployment, I pursue two strategies to explore the sensitivity of the results to place of residence. In a first step, I add the variables shown in Table A.1 in addition to canton and labor market of residence dummies as regressors in specification (2), shown in columns 2-5 of Table 4.[23]

Since mobility is not random, one has to be careful in interpreting results that include variables capturing characteristics of the place of residence. Nevertheless, it is reassuring to see that the German born coefficient stays relatively unaffected by their inclusion. The estimates remain within one standard error of the original border contrast. This suggests that at least the characteristics we can measure are not responsible for differential labor supply and fertility. As a final test for the importance of the place of residence, and to address concerns regarding both the imperfect nature of the variables related to child care availability and other unobserved differences, I add municipality of residence fixed effects in column (6). The language border contrast by place of birth is then only identified by language region movers, i.e. we are comparing women born on either side but living in the same municipality in 1990. Nevertheless, the difference at the language border, in terms of place of birth, remains statistically significantly different from zero *within* municipality of residence.

The German born estimates with place of residence fixed effects are -0.0513 and 0.0313 for employment and childlessness, respectively. I interpret these as lower bounds on the importance of the cultural environment these

child-care below kindergarten age. I divide both by the number of children below age 5 in the municipality. For the latter I use the 2000 census, which reports the place of residence five years ago (i.e. in 1995).

[23]This is straightforward for employment in 1990. There is no information on place of residence in 1990 in the 2000 census, which I use for the fertility measures. To keep the analysis comparable between the two outcomes, and since I want to account for the place of residence when the labor supply decision is made, I therefore calculate the average rate of childlessness by municipality of birth in the 2000 census for the language border sample, and then match these to the municipalities of birth as observed in the 1990 census. As column 1 shows, the German born estimate resulting from this exercise is 0.0336, which is almost identical to the same estimate calculated from the 2000 census alone (0.0343 in column 5 of Table 3).

women were exposed to while growing up, for two reasons. First, it seems likely that mobility is selective in the sense that French born women with a higher affinity for German culture move to the German-speaking region, and vice versa. In part these could be children of parents whose mother tongue does not coincide with the region they lived in at the time their child was born. Second, as discussed in Section 4, identity has two components that could loosely be interpreted as vertical and horizontal transmission. By comparing women within place of residence, we only measure what survives of a person's own values after reacting to peer effects, which likely leads German-born mothers to work more in French-speaking municipalities, and French-born mothers to work less in German-speaking municipalities.

To summarize, I find robust differences in maternal employment and childlessness for the cohort of Swiss women born 1951-1960. Women born on the German instead of the French-speaking side have a lower probability of working as mothers, and a higher probability of remaining childless. This border contrast is not driven by parental background, characteristics of the environment in the place of birth, or in the place of residence at the time I measure employment. The magnitude of the language border contrast ranges from about 5 to 10 percentage points in employment of mothers below kindergarten age, or 15-25% lower maternal employment of German-born women compared to their French-born peers. In terms of childlessness, the estimates range from about 3 to 4.4 percentage points corresponding to about 20-25% increase in the probability of remaining childless. Even at the lower bounds, these results provide novel empirical evidence that norms and values that shape identities of women and mothers play important roles in labor supply and fertility choices.

One characteristic that I have ignored so far is religious affiliation. One potential reason for the differences in attitudes we observe between German- and French-speaking Swiss is that Catholicism is more widespread in the French-speaking region (46.4% vs 38.4% as of the 2000 census) while the German-speaking Swiss are more likely Protestants (37.1% vs 25.2%). Basten and Betz (2013) show that Catholics have stronger preferences for leisure and are more in favor of redistribution than Protestants in a quasi-experimental setting in Western Switzerland. Differences in religious affiliation are substantially smaller at the language border as shown in Figure A.2. The main units of variation in religious affiliation are the cantons.[24] Since the language border comparison is mainly within cantons, I cannot credibly distinguish language and religion empirically. Descriptively, religion seems to play a much less important role than language, however. In Table A.5 I show regressions adding dummies for religious affiliation and splitting the sample into Protestants and Catholics. Neither adding dummies nor splitting the sample affects the border difference in maternal employment or childlessness to a great extent.

6.2 Additional Margins of Labor Supply and Fertility

The results discussed so far show significant differences in extensive margin employment when there is a young child and childlessness. These are the main margins where we would expect to see differences if there is a stronger belief in the German culture that children suffer if their mother works. In Table 5 I look at additional labor supply and fertility margins of the language border sample. In Panel A I show the language border contrast in employment and hours of work per week for mothers with and without children below age 5, and

[24] Historically, cantons had either Catholicism or Protestantism as state religion.

women who are not living in a household with a child. In terms of employment the differences between French-born and German-born women are considerably smaller when the youngest child is above kindergarten age or when there is no child in the household, and only marginally statistically significant. This is an important result regarding the interpretation of the language border contrast in employment. It suggests that the key mechanism responsible for differences in employment is only operating as long as the child has not reached kindergarten age. I have discussed one such mechanism—a difference in attitudes towards working mothers—in detail. If the language border contrast were driven by different tastes for work or discrimination of employers against women we would expect to see differences if there is no child or once the youngest child has reached school age as well.

In terms of weekly hours of work, there are is no statistically significant difference among mothers of children below age five. Both German- and French-born mothers work on average about 21-22 hours per week if they are employed. Among mothers of older children the French-born work on average about 1.7 hours more per week. The census data do not allow me to investigate whether this is due to factors such as a higher loss in human capital of German-born women, it is consistent with less labor market attachment by German-born mothers due to a higher propensity to stay at home with the child while it is below age five. Consistent with the extensive margin result, there are no significant differences in weekly hours among women who are not currently in a household with a child.

Turning to labor market outcomes in 2000 (panel B), after most of the children of the women in the language border sample are older than five[25] the language border differences in employment rates are small and not significant, whether we look at childless women or mothers. Weekly hours of work are lower among mothers born on the German-speaking side, with a difference of 1.5 hours per week on average. This finding could again be rationalized with higher labor force attachment and lower human capital depreciation among mothers born on the French-speaking side since they work to a higher extent when their children are young. Among childless women hours are similarly high among German- and French-born women and close to full-time employment (40-42 hours per week). The census only has a crude measure of career success asking respondents whether they hold a managerial position. In terms of points estimates, the share managers is lower among German-born mothers and higher among childless women, which is consistent with higher labor market attachment among French-born mothers and selective opting-out behavior of German-born women who choose to stay childless not because of biology but the identity cost of combining work and motherhood. However, the differences are small and I do not have enough power to statistically reject that the share managers is the same at the border.

Finally, in panel C, I look at additional fertility outcomes calculated from the 2000 census. On average, German-born women have 0.11 fewer children. Among mothers there is little difference in the average number of children. This shows that the main margin at which German-born women differ from French-born women in terms of having children is whether or not to have them at all. Average age at first birth is around age 27 on both sides of the border, and the difference at the border is small and statistically insignificant.

[25] In 2000 about 7% of non-childless women have children below age 5 in the household, compared to about 39% in 1990.

6.3 Human Capital and the Marriage Market

The results shown so far demonstrate that the different cultural environment experienced by French- and German-born women lead to significant differences in employment and fertility. Many other margins are potentially affected, such as how much a person invests in education, the types of careers women aspire to pursue, and how the marriage market works. These are outcomes in and of themselves, but also potential channels through which norms affect labor supply and fertility. I next explore the dimensions I can measure in the census to shed some light on how many other margins differ between German- and French-born women, and what we can say about potential channels.

Table 6 shows the language border contrast in a range of sociodemographic outcomes available in the 1990 and 2000 census. Panel A shows shares of highest completed education. There are small and insignificant differences in the share who completed secondary or tertiary education. In terms of point estimates it is not surprising to see that German-born women tend to have a lower propensity to have completed tertiary education. The difference at the border is almost identical to the difference among their mothers (Table 2), which argues against a major change in human capital investment due to the stronger norm in the German culture that mothers should stay with their children. This result is reassuring in another sense. Differential human capital investment, because of cultural differences in preferences for education, are a competing explanation of the border difference in employment, but not childlessness. Higher educational investment could be the mechanism responsible for higher employment among French-born mothers. From this table, it seems unlikely that this is the case.

In panel B I look at a selection of the most widely held professional qualifications. Alongside asking for the highest educational qualification, the census questionnaire asked respondents for the type of professional qualification that they had obtained. This outcome is available for both currently employed women and those who were not working at the time. French- and German-born women's choice of profession is relatively balanced at the language border. German-born women are more likely to hold a qualification in retail trade, which is mostly made up of salespersons who have completed a professional apprenticeship. These tend to be low-level jobs that offer few avenues for advancement but flexible working hours, which might make them attractive to women who are not committed to a career (Goldin, 2014). The most popular professional qualification is administration, which is obtained after a general purpose professional apprenticeship in banks, real estate and law firms, or similar office jobs. This apprenticeship offers promising candidates the potential for advancement. In terms of point estimates, French-born women are more likely to hold such a qualification, but we cannot statistically reject that the difference is zero. Overall, differences in professional qualifications between French- and German-born women are small. Together with highest educational achievement, the point estimates tend to point towards French-born women having higher career aspirations, but we cannot draw firm statistical conclusions.

Panel C shows marital status and whether there is a partner in the household in 1990. The share of women who were never married up until 1990 is higher among German-born women, although we cannot statistically

reject that the difference is zero. This difference breaks down into fewer married women in 1990, and a lower probability of being divorced or widowed. About 79% of the women of this cohort were living in a household with a partner in 1990, whether they were born on the German- or French-speaking side. Among mothers of children below age five the shares living with a partner increase to 95.2% for French-born women and 96.2% for German-born women, respectively. Differential presence of a partner does not change the border differences in employment and fertility, as I show in Table 6, where I limit the sample to women living with partners.

Turning to partner's characteristics in panel D, which limits the sample to women living with a partner in 1990, I do not find statistically significant differences in the partner's age or education. In both language regions the partner is on average three years older, mostly speaking the same language as the woman,[26] and has roughly obtained a similarly high degree of education. In terms of point estimates both the rate of secondary and tertiary education go in the direction of the differences we already saw in parental background. Professional apprenticeships, which are classified as secondary education, are more common among partners of German-born women, while the partners of French-born women are somewhat more likely to have obtained tertiary education. In both language regions, the women are significantly less likely to have completed a course at university than their partners.

Almost all partners were employed in 1990, which was a time of generally low unemployment in Switzerland. According to the full census, the share not employed and looking for work was 1.6% among men age 15-64. Among partners of the language border sample the unemployment rate is even lower with about 1% and 0.6% for French- and German-born women, respectively. The difference of 0.4 pctp at the border is statistically significantly different from zero at the 5% level. This result is in line with Eugster et al. (2017), who find generally higher unemployment durations among residents of Romance language municipalities around 2000. Although the difference is too small to fully explain the difference in employment rates of French-born mothers, one concern could be that French Swiss women work more to insure the household against future unemployment risk of their partners. Two observations point against this hypothesis. First, the difference in maternal employment holds *within* municipality of residence (Table 4), ensuring that the local labor market is the same. Second and as discussed above (Table 5), it is mainly while the child is below school age that German-born women are less likely to be employed. If French-born women had higher employment rates because of the perceived risk of unemployment of their partner, this should hold throughout the child's age distribution.

Overall I find small differences in sociodemographic outcomes compared to the robust and large difference in maternal employment. However, one might worry that the combination of small differences at several margins could combine to explain away the higher incidence of childlessness among German-born women. To mitigate this concern, I add the variables from Table 6, excluding partner's language, as (endogenous) control variables,

[26]There is a strong degree of homogamy in terms of language. Are the differences in employment and fertility the result of women's identity or due to the partner imposing his will? This question is difficult to answer with the data I have. Descriptively, about 28.7% of German-born mothers are employed if their partner is German speaking. This rises to 35% if the partner is French speaking. Similarly, 39.1% of French-born mothers are employed if their partner is French speaking, but only 31.1% are employed if the partner is German speaking. This pattern is consistent with a strong role played by the partner's attitudes towards working mothers, in line with the findings of Fernández et al. (2004). However, it could equally be the result of selective partner choice. German-born women who are relatively less convinced that their child would suffer if they worked could be more likely to look for French-speaking partners, and vice versa for French-born women. Lacking a good instrument for partner's language I cannot distinguish between these two channels.

shown in Table A.4. The border differences in maternal employment and childlessness do not change drastically by including individual and partner variables, and/or limiting the sample to women living with a partner in 1990 and 2000. This suggests that sociodemographic characteristics such as investment in education and partner choice do not play a major role in explaining why German- and French-born women have a different propensity to work as mothers, and differ in the likelihood of remaining childless.

6.4 Heterogeneity

The expectation of lower labor market attachment among German-born women and the higher propensity to stay childless does not coincide with significantly lower investment into education, as shown in Table 6 above. One potential reason for this result is that this cohort of women did not fully anticipate the expanding labor market opportunities for women and increasing female wages. An interesting follow-up question is then whether the language border contrast in employment and childlessness differs by potential wage.

Education is strongly linked to hourly wages. According to the 2000 labor force survey, women with tertiary education earn about 20% more per hour than women with secondary education, whose hourly wages are in turn about 24% higher than those of women with only primary education.[27] I do not observe wages or earnings in the census, but given the strong correlation between education and hourly wages from the labor force survey, highest educational achievement is a good proxy. One way to see how potential wages interact with labor supply and fertility choices is to interact the German-born variable and distance trends with education dummies. One has to be careful in interpreting the interaction terms since education is clearly not predetermined in such regressions. However, the comparison is informative for how potential wages interact with women's choices given that educational achievements are similar among women born on either side of the border, which makes it unlikely that this comparison is driven by selection into education.

The regressions with interaction terms are shown in Table 7. Among women with only primary education, we cannot statistically reject that those born on the German and French side are equally likely to be employed when they are mothers of young children. Similarly, the difference in childlessness among women in the lowest education category is only marginally statistically significant. This changes when we consider women with secondary education who completed an apprenticeship, teacher's degree, or similar professional qualification. Among these, the language border difference in maternal employment decreases by 12.9 pctp compared to women with primary education. Combining the two implies that German-born mothers with secondary education are 8.2 pctp less likely to be employed than their French-born peers with the same education (0.0473-0.1290=-0.0817 and a standard error of 0.0179). Among women with tertiary education, which includes college degrees and advanced professional qualifications, the border difference is 23 pctp lower compared to women with primary education. This implies German-born mothers with tertiary education are 18.3 pctp less likely to be employed compared to mothers born on the French-speaking side with the same qualification (0.0473-0.2302=-0.1829, std. err. 0.0430). Finally, the border difference between secondary and tertiary education, shown in the

[27] In the 2000 Labor Force Survey, median hourly wages of Swiss women age 25-55 were CHF 25.7 among women with primary education, 31.9 with secondary education, and 39.7 with tertiary education, respectively. In terms of US dollars, with an exchange rate of 0.6 USD for 1 CHF (March 1st 2000, oanda.com), these were equivalent to USD 15.4, 19.1, and 23.8, respectively.

second-to-last row is 10.1 pctp.

In terms of childlessness, the border difference among women with primary education are small and only marginally significant. Among women with secondary education the difference increases by an insignificant 2 pctp. However, the combination of the two implies that German-born women with secondary education are 4.5 pctp more likely to be childless and this difference is highly statistically significant (standard error of 0.0123). The border difference increases to almost 10 pctp among women with tertiary education (0.0253+0.0724=0.0977 with a standard error of 0.0200). The change from secondary to tertiary, 5.3 pctp, is shown in the second-to-last row. The general pattern that the difference at the border between French- and German-born women is increasing in education is visible both in maternal employment and childlessness. This raises the question whether the former is driven by the latter due to selection. This is unlikely to be the case, however. The difference in extensive margin fertility is too small to explain the difference in employment. The worst-case lower bounds in terms of maternal employment are -5 pctp and -13.4 pctp among women with secondary and tertiary education, respectively.[28]

Women with higher education are generally more likely to be employed as mothers and more likely to have remained childless, whether they were born on the French- or German-speaking side.[29] This is expected given the strong link between education and wages observed in the labor force survey. It is also consistent with the prediction from a household model where preferences exhibit sufficient substitutability between children and other consumption, as discussed in Appendix B. What is perhaps less expected is that the difference in maternal employment and extensive margin fertility between French- and German-born women at the border is also increasing in education. This result casts doubt on the notion that it is simply a difference in culturally-shaped preferences that is driving the language border contrast. Such a mechanism would rather predict the opposite pattern since higher potential wages should dampen the "taste" to stay at home with the child. As I discuss in Appendix B, one simple mechanism that can explain a bigger border difference among women with higher potential wages is a higher identity cost when combining work and motherhood among German-born women. Identity costs have different effects at lower and higher wages since the share of women who choose to be working mothers varies with the wage. If preferences exhibit sufficient substitutability between children and status-of-living consumption, then there will be more childless women and more working mothers at higher wages. Increasing identity costs (comparing German-born to French-born) will then lead, ceteris paribus, more of those high-wage working mothers to stay at home (those with only little labor supply), and more of them to stay childless (those with high labor supply), compared to lower-wage women.

The pattern that differences in childlessness and maternal employment are larger among more highly educated women can also be found when comparing France and Germany, where we see similar differences in

[28]These are calculated as above following Horowitz and Manski (1998) by assuming the difference in the share mothers observed with children below age five can be inflated by the difference in childlessness and under the assumption that all these additional German born mothers would work. Among women with secondary education the lower bound is (1-0.0253-0.0200)×(0.2650+0.1171+0.0473-0.1290)+(0.0253+0.0200)-(0.2650+0.1171)=-0.0500. The standard error of this bound is 0.0199 calculated by the delta method after estimating a stacked regression. Among those with tertiary education: (1-0.0253-0.0724)×(0.2650+0.4134+0.0473-0.2302)+(0.0253+0.0724)-(0.2650+0.4134)=-0.1336 and a standard error of 0.0438.

[29]Maternal employment levels on the French side are 0.27, 0.38, and 0.68 with primary, secondary, and tertiary education, respectively. On the German side these are 0.31, 0.30, and 0.50, respectively. Childlessness rates are 0.14, 0.17, and 0.26 on the French side and 0.16, 0.21, and 0.36 on the German side, respectively.

attitudes towards working mothers. I calculated the share of employed mothers of children below age 5 from the 1987 Census of West Germany and the 1990 French Census (IPUMS International Extracts). Among women with no degree or who had completed mandatory education only, employment rates were similar in the two countries (27.9% in Germany and 29.7% in France). This difference increases substantially among university graduates with 53.2% in Germany and 74.7% in France. A similar picture is obtained when looking at childless rates. Among women born 1961-1965 in France, childlessness rates vary from 12.2% among those without a degree to 15.3% among those with a university degree (Masson, 2013). Conversely, childlessness rates in (West) Germany for the cohort born 1959-1963 vary from 15.2% among women without a degree to 29.3% among women with a college degree (destatis, 2010). The fact that we observe the same pattern in a much more homogeneous comparison at the French-German language border in Switzerland suggests that differences in attitudes towards working mothers are one crucial component in making sense of the gender gaps in employment and fertility.

7 Conclusion

Empirical evidence from the French-German language border in Switzerland offers unique evidence that the strength of beliefs regarding the harm children suffer when their mothers work plays an important role in explaining gender gaps in labor market outcomes and trends and cross-sectional differences in fertility. Using data on one cohort of Swiss women that I observe at the important stages of their life-cycle—when they are mothers of young children and when they have completed their childbearing years—I find that women born on the German side of the language border are less likely to work as mothers and more likely to stay childless compared to their peers born on the French side. One straightforward explanation of this pattern is that the belief that children suffer with working mothers is much stronger in the German region than in the French region, mirroring the difference between Germany and France.

Although I cannot directly show that these differences are linked to *individual* attitudes using the census data, I have argued that the language border setting is uniquely suited to interpret the differences in outcomes between women born into either of the two language groups as the result of differences in norms regarding working mothers. Various robustness checks have shown that the language border difference is not driven by endogenous mobility, parental background, characteristics of the environment women face while growing up or at the time they decide on whether or not to work as mothers.

Furthermore, a simple and direct economic framework incorporating the difference in female identity between the two cultures is consistent with the language border results. In line with economic theory, the main margins that are affected by the norm are extensive margin employment when there is a child below school age and fertility. Stories based on differences in preferences for leisure or preferences for having children fail to make sense of the language border results. I do not find differences in employment if there is no child or once the youngest child has reached school age and that the border difference is mainly observed among women with higher education.

We can directly do a back-of-the-envelope calculation and compare the language border results to the dif-

ference between France and Germany. I calculated the employment rate among mothers of children below age five from the IPUMS extracts of the 1990 French census and the 1987 West German census. 54.25% and 33.77% of these mothers were employed in France and Western Germany, respectively, corresponding to a difference of about 20 percentage points. The language border contrast on the other hand revealed a robust difference of 8 percentage points, which would correspond to about 40% of the difference between France and Germany. At the lower bound if I include municipality of residence fixed effects, the difference of about 5 percentage points still corresponds to about a fourth. This highlights that the attitudinal component of the cross-country comparison is likely substantial. Institutional differences between the countries but also bigger cultural differences between the French and Germans compared to the French-Swiss and German-Swiss could make up the rest of the gap.

In light of the trend of decreasing fertility especially in countries with traditional values, the language border contrast reveals the important role played by norms surrounding motherhood. Among women with tertiary education, women born on the German side of the border are more than 10 percentage points more likely to be childless compared to the French side, mirroring the 15 percentage point gap among highly educated women in France and Germany discussed in the previous section. On the one hand, these historically high rates of childlessness are likely temporary phenomena related to the coincidence of expanding labor market opportunities and a traditional value set that has not caught up to the times yet. On the other hand, these results highlight that family policies that help families combine work and children likely counteract decreasing fertility and may have over-proportional effects if they make it socially acceptable for either partner to work or stay at home as they choose.

References

Adsera, A. (2005). Vanishing Children: From High Unemployment to Low Fertility in Developed Countries. *The American Economic Review*, 95(2):189–193.

Ahn, N. and Mira, P. (2002). A note on the changing relationship between fertility and female employment rates in developed countries. *Journal of Population Economics*, 15(4):667–682.

Akerlof, G. A. and Kranton, R. E. (2000). Economics and Identity*. *Quarterly Journal of Economics*, 115(3):715–753.

Alesina, A. and Giuliano, P. (2015). Culture and Institutions. *Journal of Economic Literature*, 53(4):898–944.

Algan, Y. and Cahuc, P. (2006). Job Protection: The Macho Hypothesis. *Oxford Review of Economic Policy*, 22(3):390–410.

Basten, C. and Betz, F. (2013). Beyond Work Ethic: Religion, Individual, and Political Preferences. *American Economic Journal: Economic Policy*, 5(3):67–91.

Becker, G. S. (1960). An Economic Analysis of Fertility. In *Demographic and Economic Change in Developed*

Countries, Conference of the Universities-National Bureau Committee for Economic Research, a Report of the National Bureau of Economic Research, pages 209–40. Princeton University Press, Princeton, NJ.

Bertrand, M. (2011). Chapter 17 - New Perspectives on Gender. In Ashenfelter, O. and Card, D., editors, *Handbooks in Economics Handbook of Labor Economics, Vol 4B*, volume 4, Part B of *Handbook of Labor Economics*, pages 1543 – 1590. Elsevier.

Bertrand, M., Cortés, P., Olivetti, C., and Pan, J. (2016). Social Norms, Labor Market Opportunities, and the Marriage Gap for Skilled Women. Working Paper 22015, National Bureau of Economic Research.

Borck, R. (2014). Adieu Rabenmutter—culture, fertility, female labour supply, the gender wage gap and childcare. *Journal of Population Economics*, 27(3):739–765.

Calonico, S., Cattaneo, M. D., Farrell, M. H., and Titiounik, R. (2018). Regression discontinuity designs using covariates. mimeo, University of Michigan.

Calonico, S., Cattaneo, M. D., Farrell, M. H., and Titiunik, R. (2017). rdrobust: Software for regression-discontinuity designs. *Stata Journal*, 17(2):372–404(33).

Campa, P. and Serafinelli, M. (2018). Politico-Economic Regimes and Attitudes: Female Workers under State-Socialism. *forthcoming Review of Economics and Statistics*.

Cattaneo, A. and Winkelmann, R. (2005). Earnings Differentials between German and French Speakers in Switzerland. *Schweizerische Zeitschrift für Volkswirtschaft und Statistik*, 141(2):191–212.

Chen, M. K. (2013). The Effect of Language on Economic Behavior: Evidence from Savings Rates, Health Behaviors, and Retirement Assets. *American Economic Review*, 103(2):690–731.

Clots-Figueras, I. and Masella, P. (2013). Education, Language and Identity. *The Economic Journal*, 123(570):F332–F357.

Cottier, L. (2018). Culture, Incentives to Work, and Retirement Decision. mimeo, University of Lausanne.

D'Addio, A. C. and d'Ercole, M. M. (2005). Trends and Determinants of Fertility Rates: The Role of Policies. Technical Report 27, OECD Publishing.

Del Boca, D. and Sauer, R. M. (2009). Life cycle employment and fertility across institutional environments. *European Economic Review*, 53(3):274–292.

Desmet, K., Ortuño-Ortín, I., and Wacziarg, R. (2017). Culture, Ethnicity, and Diversity. *American Economic Review*, 107(9):2479–2513.

destatis (2010). Mikrozensus 2008 — Neue Daten zur Kinderlosigkeit in Deutschland. Pressekonferenz am 29. Juli 2009, Statistisches Bundesamt, Berlin.

Egger, E. (1966). *Schulen in der Schweiz*. Number 51/52 in Archiv für das Schweizerische Unterrichtswesen. Verlag Huber, Frauenfeld.

Egger, P. H. and Lassmann, A. (2015). The Causal Impact of Common Native Language on International Trade: Evidence from a Spatial Regression Discontinuity Design. *The Economic Journal*, 125(584):699–745.

Eugster, B., Lalive, R., Steinhauer, A., and Zweimüller, J. (2011). The Demand for Social Insurance: Does Culture Matter?*. *The Economic Journal*, 121(556):F413–F448.

Eugster, B., Lalive, R., Steinhauer, A., and Zweimüller, J. (2017). Culture, Work Attitudes, and Job Search: Evidence from the Swiss Language Border. *Journal of the European Economic Association*, 15(5):1056–1100.

Eugster, B. and Parchet, R. (2018). Culture and Taxes. *forthcoming Journal of Political Economy*.

EVS (2015). European Values Study Longitudinal Data File 1981-2008 (EVS 1981-2008). GESIS Data Archive, Cologne. ZA4804 Data file Version 3.0.0, doi:10.4232/1.12253.

Falck, O., Heblich, S., Lameli, A., and Südekum, J. (2012). Dialects, cultural identity, and economic exchange. *Journal of Urban Economics*, 72(2):225–239.

Fernández, R. (2013). Cultural Change as Learning: The Evolution of Female Labor Force Participation over a Century. *American Economic Review*, 103(1):472–500.

Fernández, R. and Fogli, A. (2009). Culture: An Empirical Investigation of Beliefs, Work, and Fertility. *American Economic Journal: Macroeconomics*, 1(1):146–177.

Fernández, R., Fogli, A., and Olivetti, C. (2004). Mothers and Sons: Preference Formation and Female Labor Force Dynamics. *The Quarterly Journal of Economics*, 119(4):1249–1299.

Feyrer, J., Sacerdote, B., and Stern, A. D. (2008). Will the Stork Return to Europe and Japan? Understanding Fertility within Developed Nations. *Journal of Economic Perspectives*, 22(3):3–22.

Fogli, A. and Veldkamp, L. (2011). Nature or Nurture? Learning and the Geography of Female Labor Force Participation. *Econometrica*, 79(4):1103–1138.

Fortin, N. M. (2005). Gender Role Attitudes and the Labour-market Outcomes of Women across OECD Countries. *Oxford Review of Economic Policy*, 21(3):416–438.

Giavazzi, F., Schiantarelli, F., and Serafinelli, M. (2013). Attitudes, Policies, and Work. *Journal of the European Economic Association*, 11(6):1256–1289.

Goldin, C. (1990). *Understanding the Gender Gap: An Economic History of American Women*. New York: Oxford University Press.

Goldin, C. (2014). A Grand Gender Convergence: Its Last Chapter. *American Economic Review*, 104(4):1091–1119.

Hahn, J., Todd, P., and Van der Klaauw, W. (2001). Identification and Estimation of Treatment Effects with a Regression-Discontinuity Design. *Econometrica*, 69(1):201–209.

Horowitz, J. L. and Manski, C. F. (1998). Censoring of outcomes and regressors due to survey nonresponse: Identification and estimation using weights and imputations. *Journal of Econometrics*, 84(1):37–58.

Imbens, G. and Kalyanaraman, K. (2012). Optimal Bandwidth Choice for the Regression Discontinuity Estimator. *The Review of Economic Studies*, 79(3):933–959.

ISSP, R. G. (2013). *International Social Survey Programme: Family and Changing Gender Roles III - ISSP 2002*. GESIS Data Archive, Cologne., za3880 data file version 1.1.0, doi:10.4232/1.11564 edition.

Jones, L. E., Schoonbroodt, A., and Tertilt, M. (2010). Fertility Theories: Can They Explain the Negative Fertility-Income Relationship? In Shoven, J. B., editor, *Demography and the Economy*, pages 43–100. University of Chicago Press.

Kleven, H., Landais, C., and Søgaard, J. E. (2018). Children and Gender Inequality: Evidence from Denmark. Working Paper 24219, National Bureau of Economic Research.

Lauer, C. and Weber, A. M. (2003). Employment of Mothers After Childbirth: A French-German Comparison. *ZEW discussion paper series*, (03-50).

Masson, L. (2013). Avez-vous eu des enfants ? Si oui, combien ? (Dossier). France, portrait social - édition 2013, Insee, Paris.

McRae, K. (1983). *Conflict and Compromise in Multilingual Societies*. Laurier (Wilfrid) University Press.

Olivetti, C. and Petrongolo, B. (2017). The Economic Consequences of Family Policies: Lessons from a Century of Legislation in High-Income Countries. *Journal of Economic Perspectives*, 31(1):205–230.

Rash, F. (2002). The German-Romance Language Borders in Switzerland. *Journal of Multilingual and Multicultural Development*, 23(1-2):112–136.

Rindfuss, R. R., Brewster, K. L., and Kavee, A. L. (1996). Women, Work, and Children: Behavioral and Attitudinal Change in the United States. *Population and Development Review*, 22(3):457–482.

Rindfuss, R. R., Guzzo, K. B., and Morgan, S. P. (2003). The Changing Institutional Context of Low Fertility. *Population Research and Policy Review*, 22(5-6):411–438.

Ruckdeschel, K. (2009). Rabenmutter contra Mère Poule: Kinderwunsch und Mutterbild im deutsch-französischen Vergleich. *Zeitschrift für Bevölkerungswissenschaft*, 34(1-2):105–134.

Vella, F. (1994). Gender Roles and Human Capital Investment: The Relationship between Traditional Attitudes and Female Labour Market Performance. *Economica*, 61(242):pp. 191–211.

Willis, R. J. (1973). A New Approach to the Economic Theory of Fertility Behavior. *Journal of Political Economy*, 81(2):S14–S64.

WVS (2015). WORLD VALUES SURVEY 1981-2014 LONGITUDINAL AGGREGATE v.20150418. World Values Survey Association (www.worldvaluessurvey.org), Aggregate File Producer: JDSystems, Madrid SPAIN.

Appendix

A Robustness checks and additional material

B Identity in a Fertility Model

I explore the implications of augmenting a simple static fertility model as studied by Becker (1960) by an identity cost following Akerlof and Kranton (2000). I focus on one version of the model borrowed from Jones et al. (2010) in which the production of children is intensive in the wife's time.[30]

Consider a household[31] consisting of husband and wife deriving utility from children n and other goods consumption (or status of living), c, according to the separable CES utility function

$$U(c,n) = \frac{c^{1-\sigma}}{1-\sigma} + \alpha_n \frac{n^{1-\sigma}}{1-\sigma},$$

where σ captures the elasticity of substitution between children and other consumption and α_n governs preferences for children.

The husband always works in the market and supplies the household with income $y > 0$. The wife splits her time between market work l earning wage w, and child care h. Her time constraint is $l + h = 1$. Children are intensive in the wife's time, which I capture in a simplified way by imposing $n \leq h = 1 - l$. The budget constraint $c \leq wl + y$ completes the set-up.[32]

The household's maximization problem is thus

$$\max_{c,n,l} U = \frac{c^{1-\sigma}}{1-\sigma} + \alpha_n \frac{n^{1-\sigma}}{1-\sigma}$$
$$\text{s.t. } l \leq 1 - n$$
$$c \leq wl + y$$

[30] This model is a simplified and parameterized version of the general model analyzed in Willis (1973).

[31] I do not distinguish between members of the households in terms of agency and focus on a unitary model. While it would be interesting to analyze the implications of household interactions in an identity context, I cannot empirically contribute any insights on this dynamic. Almost all mothers are living with a partner when I observe their labor market outcomes and I do not have an instrument that would allow me to study the role played by the partner's attitudes. This also implies I cannot distinguish between the role played by women's own concept of how a mother should behave, and her partner's influence.

[32] In the model discussed by Jones et al. (2010) (Section 3.2) there is also a parameter capturing preferences for consumption α_c, and a parameter capturing productivity of the wife's time at home b_1. I exclude those to simplify notation. The household's optimal choices only depend on the ratio α_c/α_n, and b_1 does not contribute any insights to the analysis in this simple version.

Solving for interior solutions reveals

$$l_W = \frac{z^{-1} - yw^{-1}}{1 + z^{-1}}$$
$$n_W = \frac{1 + yw^{-1}}{1 + z^{-1}}$$
$$c_W = \frac{w + y}{1 + z}$$

where l_W, n_W, and c_W denote optimal choices for time spent on market work, investment in children, and other goods consumption, respectively, and $z = \alpha_n^{\frac{1}{\sigma}} w^{\frac{\sigma-1}{\sigma}}$.

If households differ in the wife's wage w, e.g. due to different levels of human capital, the number of children a household decides to have depends on the wage as follows, ceteris paribus.

$$\frac{\partial n}{\partial w} = -w^{-1}\left(1 + z^{-1}\right)\left(yw^{-1} + \frac{1-\sigma}{\sigma} n z^{-1}\right)$$

$\sigma \in (0, 1)$ is a sufficient condition for this derivative to be negative if the other parameters are positive. Jones et al. (2010) document the robust negative income-fertility relationship and in the data and discuss conditions under which fertility models are consistent with that pattern. In this simple model generating the negative relationship requires relatively low curvature of the utility function or that preferences exhibit sufficient substitutability between children and other goods consumption. I focus on $\sigma \in (0, 1)$ in the following analysis for this reason.

I interpret the interior solution as a household deciding to have children and a working mother ignoring the timing aspect. The utility derived from this choice is thus subject to identity costs if there is a belief in society that "good" mothers should stay at home with their children. Let $u_W - I$ denote household utility in the interior solution with n_W children where the wife supplies l_W units of market work. In Akerlof and Kranton (2000) there are two components in I, an internal cost due to not living up to one's own ideal, and social punishment. I treat the deviation from the norm as a cost captured by a single parameter since I am not interested in equilibrium dynamics. A household may decide not to have children, $n = 0$ and $l = 1$. Denote utility in this childless solution by u_C. Lastly, the solution where the wife fully specializes in child-care and is a stay-at-home mother, $n = 1$ and $l = 0$, is denoted by u_H. Positive identity costs $I > 0$ imply $0 < n_W < 1$, i.e. in an interior optimum investment in children never coincides with the corner solutions.

In this set-up optimal household choices depend on w in a simple way. For relatively low ws u_H is optimal (at $w = 0$ this holds trivially). As w increases households want to have fewer children and supply more of the wife's time to the labor market since $\partial n/\partial w < 0$, as shown above, and $l = 1 - n$. This implies $u_W - I$ and u_C become relatively more attractive since $\partial u_H/\partial w = 0$. If children and other consumption are relatively substitutable, which is required to match the empirical pattern that higher wage women have fewer children, then the higher the wage the more attractive the corner solution with no children, since children are intensive in the wife's time. If the identity cost I is not prohibitively high, then u_W dominates u_H and u_C, ceteris paribus, for intermediate values of w where $0 < n_W < 1$. If I is low enough there are thus two indifference points

$u_H = u_W - I$ and $u_W - I = u_C$ that separate low, medium, and high wage women into the three household arrangements.

Consider now the thought experiment of imposing or increasing identity costs I. The only effect this has is to lower utility in the interior solution, so that lower wage women will tend to switch to $n = 1$ while higher wage women will tend to opt for childlessness $n = 0$ instead.

To see this result formally first consider the indifference point $u_H = u_W - I$, which implicitly defines a wage $\bar{w}_H$ at which households are indifferent between choosing to have n_W or $n = 1$ children. We are then interested in $\partial \bar{w}_H / \partial I$. The implicit function theorem allows us to express this locally as

$$\frac{\partial \bar{w}_H}{\partial I} = -\frac{1}{\partial u_H/\partial w - \partial u_W/\partial w}$$

which is positive since $\partial u_H/\partial w = 0$ and $\partial u_W/\partial w = \lambda (1 - n_W) > 0$, by the envelope theorem (higher wages lead to strictly higher utility in the interior solution close to $n = 0$). Ceteris paribus, higher identity costs shift up the wage at which $u_W = u_H$. Thus higher identity costs shift up the wage at which households are indifferent between $n = 1$ and n_W so that more of the lower wage women decide to be stay-at-home mothers.

Similarly, let $\bar{w}_C$ denote the wage at which women are indifferent between choosing to have n_W or $n = 0$ children so that $u_C = u_W - I$. Then

$$\frac{\partial \bar{w}_C}{\partial I} = -\frac{1}{\partial u_C/\partial w - \partial u_W/\partial w}$$

The derivatives in the denominator can be expressed locally in terms of parameters by plugging in the budget constraint and using the envelope theorem so that $\partial u_C/\partial w - \partial u_W/\partial w$ can be expressed as

$$\begin{aligned}
\partial u_C/\partial w - \partial u_W/\partial w &= (w+y)^{-\sigma} - \lambda (1 - n_W) \\
&= (w+y)^{-\sigma} - (w+y)^{-\sigma} (1+z)^{\sigma} \frac{z^{-1} - y w^{-1}}{1 + z^{-1}} \\
&= -(w+y)^{-\sigma} (1+z)^{\sigma-1} \left[1 - zyw^{-1} - (1+z)^{1-\sigma}\right]
\end{aligned}$$

Which is positive $\forall \sigma \in (0,1)$ since $1 - zy/w < 1$ and $(1+z)^{1-\sigma} > 1 \; \forall \; \sigma \in (0,1)$. So $\partial \bar{w}_C / \partial I < 0$. Thus higher identity costs shift down the wage at which households are indifferent between n_W and $n = 0$ so that more of the higher wage women opt for childlessness.

With wage heterogeneity and if household preferences exhibit sufficient substitutability between children and other consumption, identity costs decrease maternal labor supply at low wages and increase childlessness at higher wages. If we think of the German-speaking region of Switzerland as a society with a strong norm against working mothers and high value of I and the French-speaking region as a society with low I, the model would predict lower labor supply of mothers and higher childlessness in the German-speaking region. However, the former would be driven by low-wage women, while the latter would be driven by high-wage women. Empirically, we observe that both margins are driven by women with secondary and especially tertiary education, however. I

will next show that the model can replicate this pattern if we additionally allow for heterogeneity in preferences for children.

B.1 Comparative statics at different wage levels

To do comparative statics varying identity costs by wage in a tractable way I focus on two degrees of heterogeneity: wages (human capital) and preferences for children. The main motivation to simplify the analysis in this way is twofold. First, I ignore endogenous choice of human capital (education) since I find small and mostly statistically insignificant differences between German- and French-born women at the language border along this dimension. One potential reason for similar investment in education in both regions is that the cohort of women I consider did not fully anticipate the expanding opportunities for women in the labor market and how much female wages would increase. Second, I do not separately look at how differences in fertility preferences between French- and German-born women would change the analysis here since I do not find strong survey evidence that French- and German-speaking women have different tastes for children.[33]

Similar to the analysis above, for a given $w > 0$, households with lower α_n choose $n = 0$ (childlessness), households with higher α_n choose $n = 1$ (stay-at-home mother), and households with intermediate values of α_n will choose n_W if identity costs are not prohibitively high. If $I > 0$ but sufficiently small, there are two α_n at which households are indifferent between $n = 1$ and n_W, and $n = 0$ and n_W, respectively. Denote the former by $\bar{\alpha}_H$ and the latter by $\bar{\alpha}_C$, implicitly defined by

$$u_H(\bar{\alpha}_H) - u_W(\bar{\alpha}_H, w) - I = 0$$
$$u_C(w) - u_W(\bar{\alpha}_C, w) - I = 0$$

where ($z = \alpha_n^{\frac{1}{\sigma}} w^{\frac{\sigma-1}{\sigma}}$)

$$u_H(\bar{\alpha}_H) = \frac{y^{1-\sigma}}{1-\sigma} + \frac{\bar{\alpha}_H}{1-\sigma}$$
$$u_W(\bar{\alpha}_H, w) = \frac{c_W^{1-\sigma}}{1-\sigma} + \bar{\alpha}_H \frac{n_W^{1-\sigma}}{1-\sigma} = \frac{(w+y)^{1-\sigma}(1+z)^{\sigma}}{1-\sigma}$$
$$u_C(w) = \frac{(w+y)^{1-\sigma}}{1-\sigma}$$

By the implicit function and the envelope theorems, in a neighborhood of w and $\bar{\alpha}_H$, and w and $\bar{\alpha}_C$, respectively,

$$\frac{\partial \bar{\alpha}_H}{\partial I} = -\frac{1}{\frac{\partial u_H}{\partial \alpha} - \frac{\partial u_W}{\partial \alpha}} = -\frac{1-\sigma}{1-n_W^{1-\sigma}} < 0$$
$$\frac{\partial \bar{\alpha}_C}{\partial I} = \frac{1}{\frac{\partial u_W}{\partial \alpha}} = \frac{1-\sigma}{n_W^{1-\sigma}} > 0$$

[33] I ignore the exact distribution of preferences since it does not add anything to the analysis. If α_n and w are uniformly distributed on some interval then stronger preferences to have children among French-born women would change how many choose which arrangement, with more opting to be stay-at-home mothers. It would not interact meaningfully with the wage.

since $\sigma \in (0,1)$ and $0 < n_W < 1$ due to the time constraint and $I > 0$.

This mirrors the result with wage heterogeneity but from the perspective of fertility preferences. Higher identity costs will lead to more stay-at-home mothers ($\bar{\alpha}_H$ shifts down) among households with stronger fertility preferences ($\alpha_H > \alpha_C$) and more childlessness among households with weaker fertility preferences ($\bar{\alpha}_C$ shifts up).

The interesting feature is now what happens to the derivative of the indifference frontiers with respect to identity costs as wages change, i.e. we are interested in $\partial\bar{\alpha}_H/\partial I\partial w$ and $\partial\bar{\alpha}_H/\partial I\partial w$. To be able to say this we need to know how α_H and α_C change in w. Note that

$$c_W^{-\sigma}(1-n_W) = (w+y)^{-\sigma}(1+z)^{\sigma}(1-n_W) = (1-n_W)\, z^{\sigma} w^{-\sigma} n_W^{-\sigma}$$

Then, with $z = \bar{\alpha}_H^{\frac{1}{\sigma}} w^{\frac{\sigma-1}{\sigma}}$,

$$\begin{aligned}
\frac{\partial\bar{\alpha}_H}{\partial w} &= -\frac{\frac{\partial u_H}{\partial w} - \frac{\partial u_W}{\partial w}}{\frac{\partial u_H}{\partial \alpha_n} - \frac{\partial u_W}{\partial \alpha_n}} \\
&= (1-\sigma)\frac{c_W^{-\sigma}(1-n_W)}{1-n_W^{1-\sigma}} \\
&= (1-\sigma)\frac{1-n_W}{1-n_W^{1-\sigma}} z^{\sigma} w^{-\sigma} n_W^{-\sigma} \qquad (3)
\end{aligned}$$

It holds that $\partial\bar{\alpha}_H/\partial w > 0$ since $\sigma \in (0,1)$ and $0 < n_W < 1$. Also, with $z = \bar{\alpha}_C^{\frac{1}{\sigma}} w^{\frac{\sigma-1}{\sigma}}$,

$$\begin{aligned}
\frac{\partial\bar{\alpha}_C}{\partial w} &= -\frac{\frac{\partial u_C}{\partial w} - \frac{\partial u_W}{\partial w}}{-\frac{\partial u_W}{\partial \alpha_n}} \\
&= (1-\sigma)\frac{(w+y)^{-\sigma} - c_W^{-\sigma}(1-n_W)}{n_W^{1-\sigma}} \\
&= (1-\sigma)(1+z)^{-\sigma} w^{-\sigma} z^{\sigma} n_W^{-1}\left[1-(1+z)^{\sigma}(1-n_W)\right] \qquad (4)
\end{aligned}$$

For $\partial\bar{\alpha}_C/\partial w > 0$ we need

$$1-(1+z)^{\sigma}(1-n_W) = (1+z)^{\sigma-1}\left(1-zyw^{-1}\right) < 1$$

and both factors are smaller than one for $\sigma \in (0,1)$ and $\alpha_C, w > 0$.

Both α_H and α_C are increasing in w: Higher wage women will increasingly choose childlessness over motherhood, and to work as mothers instead of staying at home. The remaining question is whether higher identity costs affect lower and higher wage women differently. The cross-partials are given by

$$\begin{aligned}
\frac{\partial\bar{\alpha}_H}{\partial I\partial w} &= -(1-\sigma)^2\left(1-n_W^{1-\sigma}\right)^{-2} n_W^{-\sigma}\left.\frac{\partial n_W}{\partial w}\right|_{\alpha_n=\bar{\alpha}_H} \\
\frac{\partial\bar{\alpha}_C}{\partial I\partial w} &= -(1-\sigma)^2 n_W^{\sigma-2}\left.\frac{\partial n_W}{\partial w}\right|_{\alpha_n=\bar{\alpha}_C}
\end{aligned}$$

To sign these we need to know how n_W and w interact along the $\bar{\alpha}_H$ and $\bar{\alpha}_C$ frontiers.

First consider the stay-at-home and working mother frontier $\bar{\alpha}_H$. If $\partial n_W/\partial w > 0$ along this frontier then α_H will shift down more at higher I, implying that there is a greater range of households in terms of fertility preferences that will switch to the stay-at-home mother arrangement the higher the wage due to I increasing.

This is given by

$$\begin{aligned}
\left.\frac{\partial n_W}{\partial w}\right|_{\alpha_n=\bar{\alpha}_H} &= -yw^{-2}\left(1+z^{-1}\right)^{-1} + \frac{1-\sigma}{\sigma} n_W \left(1+z^{-1}\right)^{-1} z^{-1}\left[\bar{\alpha}_H^{-1}(1-\sigma)^{-1}\frac{\partial \bar{\alpha}_H}{\partial w} - w^{-1}\right] \\
&= -yw^{-2}\left(1+z^{-1}\right)^{-1} + \frac{1-\sigma}{\sigma} n_W \left(1+z^{-1}\right)^{-1} z^{-1}\left[\frac{1-n_W}{1-n_W^{1-\sigma}} w^{-1} n_W^{-\sigma} - w^{-1}\right] \\
&= w^{-1}\left(1+z^{-1}\right)^{-1} n_W \left[\left(n_W^{-1}-1\right) + z^{-1}\frac{1-\sigma-n_W^{\sigma}+\sigma n_W}{\sigma n_W^{\sigma}\left(1-n_W^{1-\sigma}\right)}\right]
\end{aligned}$$

which is positive since $n_W^{-1} - 1 > 0 \, \forall n_W \in (0,1)$ and $1 - \sigma - n_W^{\sigma} + \sigma n_W > 0 \, \forall \sigma, n_W \in (0,1)$.[34] This implies $\partial \bar{\alpha}_H / \partial I \partial w < 0$. In other words, as the wage increases, the indifference point between staying at home and working while having children shifts down more the higher is the identity cost. If households differ in the wife's wage and fertility preferences more higher wage households will thus switch from n_W to $n = 1$ if I increases, ceteris paribus.

Intuitively, this result is clear because relatively low curvature in the utility function implies that the number of children is increasing and labor supply decreasing along the indifference frontier. At higher wages, a broader range of women (in terms of fertility preferences) work only little and still choose to work over staying at home. If identity costs increase more high wage women thus give up work and switch to being stay-at-home mothers.

Second, consider the working mother-childlessness frontier $\bar{\alpha}_C$. We could solve explicitly for $\bar{\alpha}_C$ but it's straightforward to just use the implicit function and envelope theorems again. Along the frontier,

$$\left.\frac{\partial n_W}{\partial w}\right|_{\alpha_n=\bar{\alpha}_C} = -yw^{-2}\left(1+z^{-1}\right)^{-1} + \left(1+yw^{-1}\right)\left(1+z^{-1}\right)^{-2} z^{-1}\frac{1-\sigma}{\sigma}\left[(1-\sigma)^{-1}\alpha_C^{-1}\frac{\partial \bar{\alpha}_c}{\partial w} - w^{-1}\right]$$

For $\sigma \in (0,1)$ this is negative if the term in brackets is negative. We have, plugging in from equation (4) above,

$$\begin{aligned}
(1-\sigma)^{-1}\bar{\alpha}_C^{-1}\frac{\partial \bar{\alpha}_C}{\partial w} - w^{-1} &= \bar{\alpha}_C^{-1}(1+z)^{-\sigma} w^{-\sigma} z^{\sigma} n_W^{-1}\left[1-(1+z)^{\sigma}(1-n_W)\right] - w^{-1} \\
&= w^{-1}\left[(1+z)^{-\sigma} n_W^{-1} - n_W^{-1}(1-n_W) - 1\right] \\
&= w^{-1} n_W^{-1}\left[(1+z)^{-\sigma} - 1\right] < 0
\end{aligned}$$

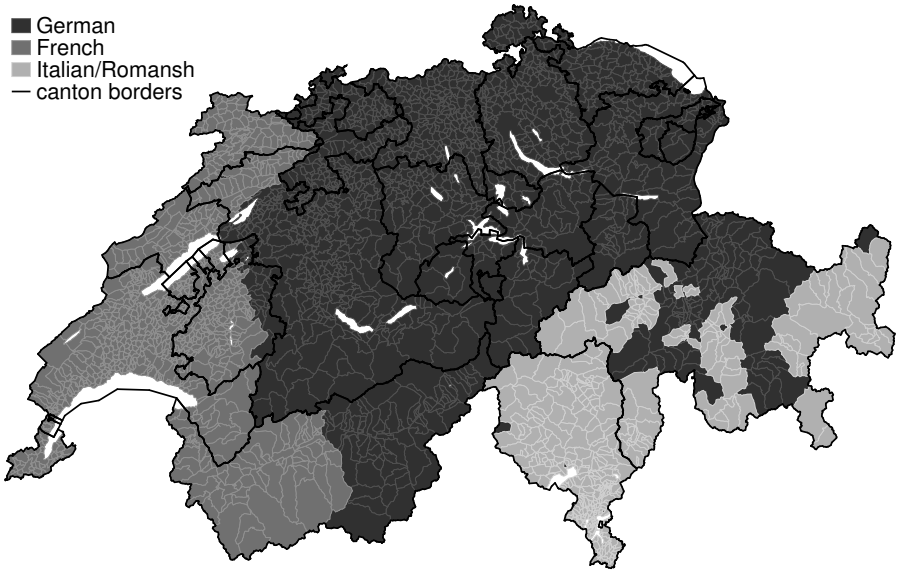
for $\sigma \in (0,1)$, $z = \bar{\alpha}_C^{\frac{1}{\sigma}} w^{\frac{\sigma-1}{\sigma}}$, and $w, \bar{\alpha}_C > 0$. Along the frontier where households are indifferent between n_W and $n = 0$ investment in children is decreasing. So $\partial \bar{\alpha}_C / \partial I \partial w$ is positive. The substitution effect dominates and therefore the difference in utility between $u_W - I$ and u_C is decreasing. This implies that higher identity costs lead more women to switch to childlessness at higher wages. Intuitively, a broader range of women (in

[34] To see the latter note that this inequality holds at $n_W = 0$ and weakly at $n_W = 1$ which will never be optimal if $I > 0$. Furthermore, the slope, $\sigma\left(n_W^{\sigma-1} - 1\right) > 0$.

terms of fertility preferences) choose to invest only little time in children, and still opt to combine work and motherhood instead of staying childless. If identity costs increase, more high wage women will thus switch to childlessness compared to lower wage women.

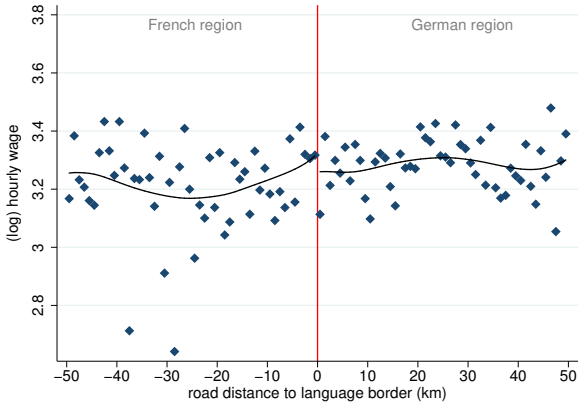
In conclusion, a simple household model where combining work and motherhood is subject to identity costs can replicate the empirical patterns found at the language border. A stronger sense that a good mother stays with her children and peer pressure to conform to the social norm, summarized by an identity parameter, make it more costly for German-born women to be working mothers compared to their French-born peers. This cost leads to lower maternal labor supply and higher childlessness in the German-speaking region. Allowing for heterogeneity in the preferences for children reveals that this difference is driven by women with higher human capital along both margins if children are intensive in the woman's time and preferences exhibit sufficient substitutability between children and other consumption, assumptions that are also necessary to replicate the robust negative income-fertility relationship.

Figure 1: Language regions in Switzerland



Notes: Map plots municipalities of Switzerland (administrative boundaries) by majority language among residents as surveyed in the 1970 Swiss population census. Heavy black lines delineate cantonal (state) borders. The census asked respondents to indicate their "mother tongue" and defined this term as "the language in which one thinks and which one masters best" on the questionnaire. White areas are lakes.
Source: data from 1970 Swiss Population Census and GEOSTAT (GIS shape files), Federal Statistical Office, Neuchâtel.

Figure 2: Log hourly wages of women, by distance to the language border

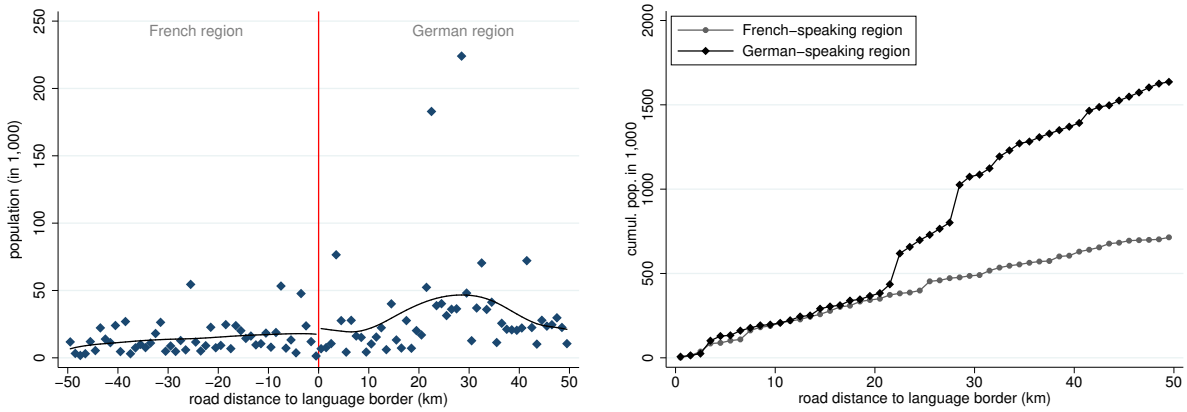


Notes: Figure plots log real hourly wage of women age 20-55 surveyed by the Swiss Labor Force Survey between 1991-2000 standardized by CPI (base year 2000) and winsorized (at 1% and 99%). Each dot represents the average wage for women residing in municipalities that are in the same 1km distance bin from the language border. See Section 3 on how the distance measure is constructed. I use the cross-sectional survey weights to calculate these averages. The number of observations is 4,864 and 9,649 on the French and German side, respectively. Lines are locally weighted regression estimates (lowess).
Source: data from Swiss Labor Force Survey (SAKE) 1991-2000 and Landesindex der Konsumentenpreise, Federal Statistical Office, Neuchâtel.

Figure 3: Population distribution in 1970, by distance to French-German language border

(a) Population

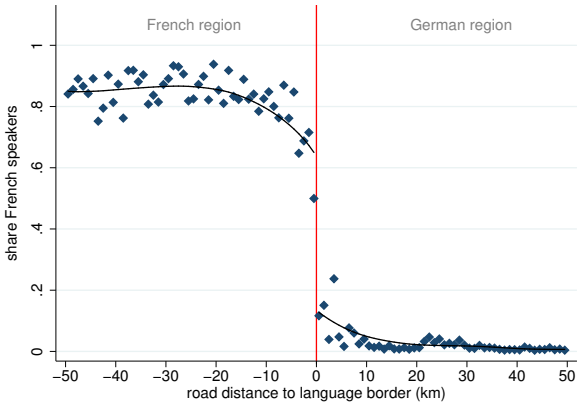
(b) Cumulative population



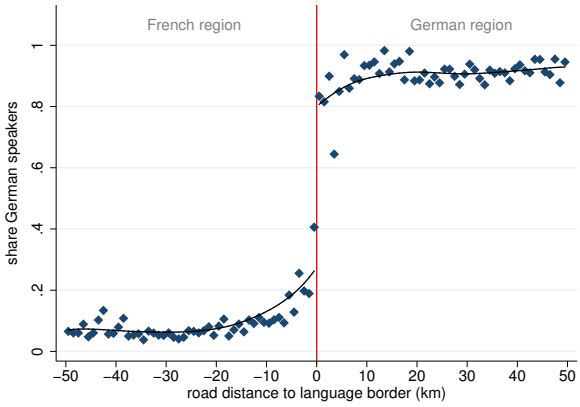
Notes: Panel (a) plots number of residents from the 1970 census in municipalities within 1km distance bins from the language border. See Section 3 on how the distance measure is constructed. Lines are locally weighted regression estimates (lowess). Panel (b) plots the cumulative number of residents from the 1970 census, i.e. panel (b) is the sum of the values plotted in panel (a) when starting at the language border letting distance increase in both directions separately.
Source: data from 1970 Swiss Population Census, Federal Statistical Office, Neuchâtel.

Figure 4: Language shares, by distance to French-German language border

(a) Share French speakers



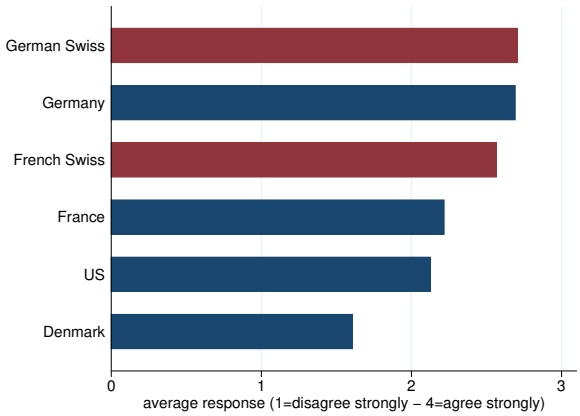
(b) Share German speakers



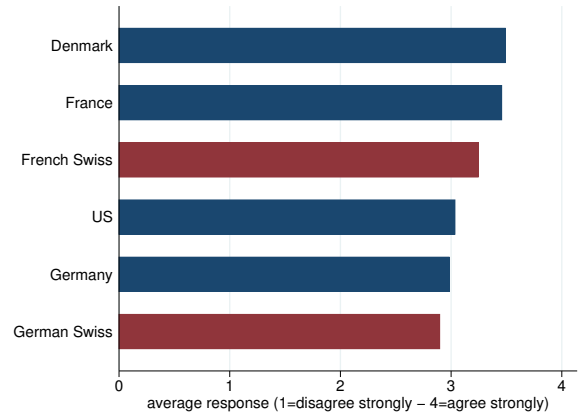
Notes: Figure plots the share French and German speakers, averaged within 1km distance bins by municipality of residence, among speakers of the four official languages (German, French, Italian, Romansh), as surveyed in the 1970 census. The census asked respondents to indicate their "mother tongue" and defined this term as "the language in which one thinks and which one masters best" on the questionnaire. See Section 3 on how I construct the distance measure. Lines are locally weighted regression estimates (lowess).
Source: data from 1970 Swiss population census, Federal Statistical Office, Neuchatel.

Figure 5: Cross-country comparison of attitudes towards working mothers

(a) Pre-school child suffers with working mother

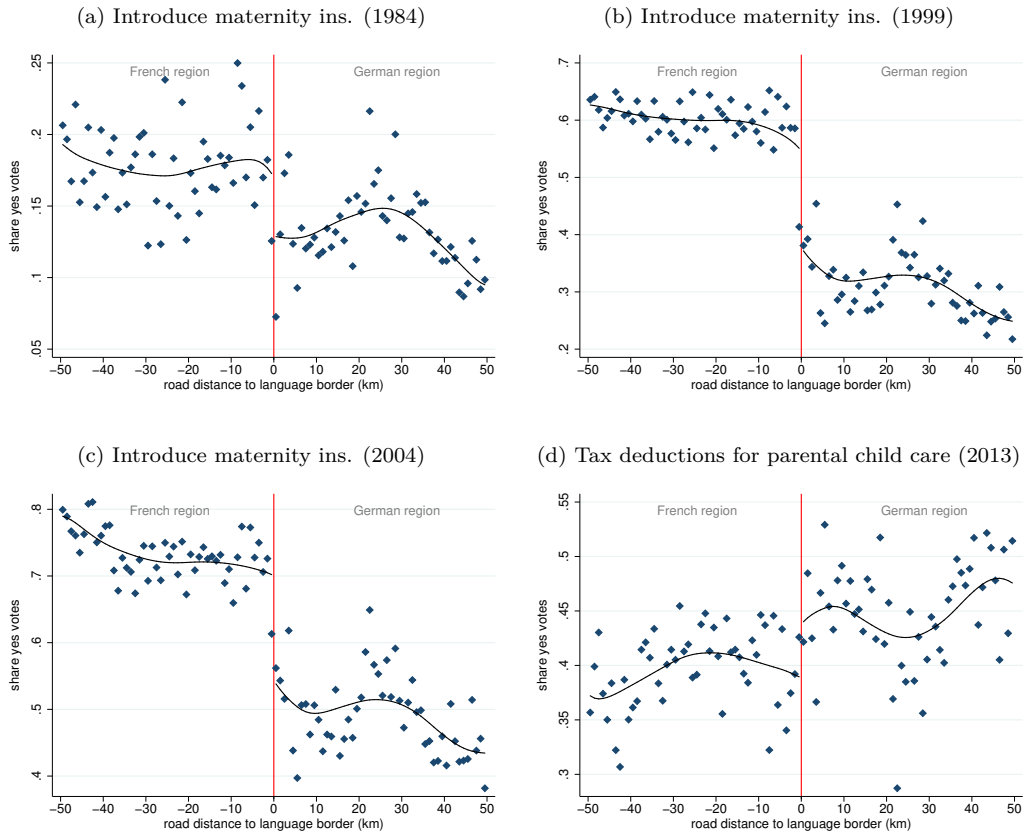


(b) Working mother can have warm relationship with child



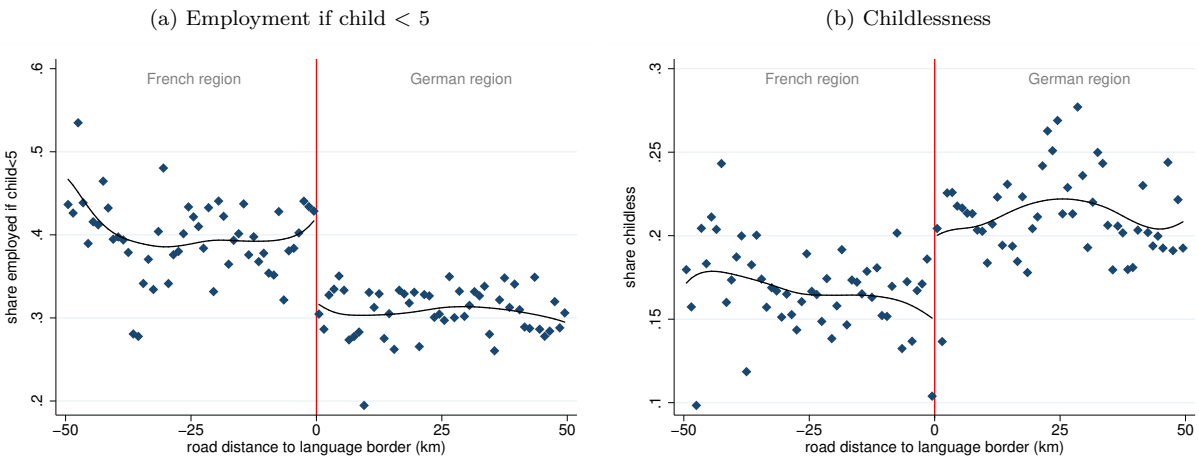
Notes: Panel (a) shows average response to WVS/EVS question "A pre-school child is likely to suffer if his or her mother works". Possible answers were (re-coded so that higher values indicate more support of statement) 1 "disagree strongly" 2 "disagree" 3 "agree" 4 "agree strongly". Panel (b) shows average response to WVS/EVS question "A working mother can establish just as warm and secure a relationship with her children as a mother who does not work" with same answer possibilities as in panel (a). All countries except US: EVS wave 2008-2010. For US the first question is from the 2010-2014 WVS wave and the second question from the 1999-2004 wave. Those are the closest waves in which these questions were asked in the US. Within Switzerland respondents are split into language groups by language of the interview. Survey weights used.
Source: data from EVS (2015) and WVS (2015).

Figure 6: Referenda on the introduction of maternity insurance and tax deductions for parental child care



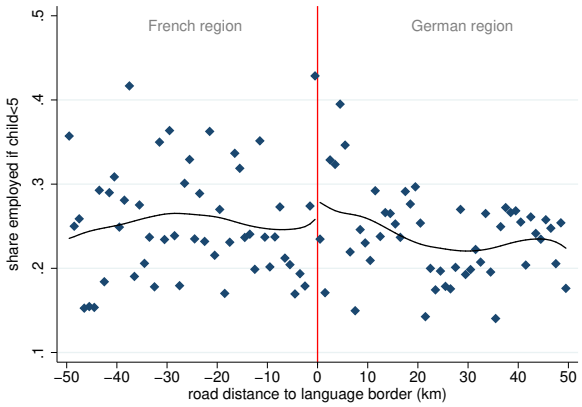
Notes: Figures plot the share yes-votes among valid votes cast, averaged within 1km distance bins by municipality of residence. Panel (a) shows the results of the 1984 vote "Volksinitiative für einen wirksamen Schutz der Mutterschaft": Initiative for effective protection of motherhood, which failed to pass with 15.8% yes. Panel (b) shows the results of the 1999 vote "Bundesgesetz über die Mutterschaftsversicherung": Federal law regarding maternity insurance, which failed to pass with 39.0% yes. Panel (c) shows the results of the 2004 vote "Bundesgesetz über die Erwerbsersatzordnung für Dienstleistende in Armee, Zivildienst und Zivilschutz (Erwerbsersatzgesetz, EOG)": Federal law regarding income compensation allowance in the event of service, which passed with 55.5% yes. Panel (d) shows the results of the 2013 vote "Familieninitiative: Steuerabzüge auch für Eltern, die ihre Kinder selber betreuen": Family initiative, tax deductions for parental child care, which failed to pass with 41.5% yes. See Section 3 on how I construct the distance measure. Lines are locally weighted regression estimates (lowess). Turnout was balanced in (a)-(c) and higher in the French-speaking region in (d), see Figure A.6.
Source: data from Statistik der Wahlen und Abstimmungen, Federal Statistical Office, Neuchâtel.

Figure 7: Employment of mothers and childlessness at the Language Border



Notes: Panel (a) plots share employed among mothers of children below age 5 as of the 1990 census, averaged within 1km distance bins from municipality of birth to the language border. Panel (b) shows the share childless according to the 2000 census, averaged within 1km distance bins from municipality of birth to the language border. The sample in both panels are women born 1951-1960 within 50km of the border. See Section 3 on how I construct the distance measure. Lines are locally weighted regression estimates (lowess).

Figure 8: Employment of mothers of young children in 1970



Notes: Figure plots share employed among mothers of children below age 5 as of the 1970 census, averaged within 1km distance bins from municipality of residence to the language border. See Section 3 on how I construct the distance measure. Lines are locally weighted regression estimates (lowess).

Table 1: Survey evidence on working mothers, gender roles, and fertility

	Swiss French	Swiss German	Difference	
Panel A. Working mothers (ISSP)				
With a child under school age...				
...do you think that women should work full-time?	0.046	0.012	−0.033	(0.017)**
...do you think that women should work part-time?	0.672	0.447	−0.226	(0.041)***
...do you think that women should stay at home?	0.282	0.541	0.259	(0.040)***
With youngest kid at school...				
...do you think that women should work full-time?	0.116	0.044	−0.072	(0.027)***
...do you think that women should work part-time?	0.737	0.762	0.025	(0.038)
...do you think that women should stay at home?	0.147	0.194	0.047	(0.031)
Panel B. Working mothers (WVS)				
Working mother can have warm relationship with child	3.244	2.896	−0.348	(0.063)***
Pre-school child suffers with working mother	2.565	2.706	0.141	(0.064)**
Panel C. Gender roles (WVS)				
If jobs are scarce: give men priority	1.366	1.454	0.089	(0.054)
Women really want home and children	2.549	2.509	−0.040	(0.064)
Being housewife is as fulfilling as paid job	2.732	2.738	0.006	(0.065)
Panel D. Fertility (WVS)				
Important in marriage: children	2.477	2.394	−0.083	(0.049)*
Women need children in order to be fulfilled	0.436	0.334	−0.101	(0.036)***
It is a duty towards society to have children	2.240	2.534	0.294	(0.092)***
People should decide themselves to have children	4.653	4.621	−0.033	(0.046)

Notes: Panel A reports the share of respondents who chose the indicated response in the 2002 ISSP survey. Panels B-D report the average response to selected WVS 2008 questions recoded so that higher values indicate higher support for the statement. Possible answers for questions in panel B and panel C (except first question) were 1 "strongly disagree" 2 "disagree" 3 "agree" 4 "strongly agree". Possible answers for question on job scarcity (panel C) were 1 "disagree" 2 "neither" 3 "agree". Possible answers for first question in panel D were 1 "not very important" 2 "rather important" 3 "very important". Possible answers for second question in panel D were 0 "not necessary" 1 "needs children". Possible answers for the last two questions in panel D were 1 "disagree strongly" 2 "disagree" 3 "neither" 4 "agree" 5 "agree strongly". Separation into language region by language the interview was conducted in (WVS) and majority language in the respondent's canton of residence (ISSP). Survey weights used. Standard errors of the difference in the last column in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.
Source: data from ISSP (2013) and EVS (2015).

Table 2: Parental background and characteristics of the municipality of birth (1970 census)

	Means (20km sample)		Language border contrast			
	French born	German born	French side intercept	German side intercept	border diff.	
Panel A. Household in 1970						
Share lives with a least one parent	0.9153	0.8959	0.9051	0.9062	0.0010	(0.0149)
Share lives with mother	0.9047	0.8869	0.8946	0.8958	0.0012	(0.0159)
Share lives with father	0.8563	0.8464	0.8381	0.8488	0.0107	(0.0139)
Share still resident in municipality of birth	0.6357	0.6370	0.6044	0.6392	0.0348	(0.0309)
Share still resident in canton of birth	0.8337	0.8377	0.7999	0.8214	0.0215	(0.0282)
Panel B. Mother's characteristics in 1970						
Age	42.6506	42.6273	42.6242	42.2978	−0.3264	(0.2839)
Main language is German	0.1791	0.8936	0.2772	0.7719	0.4947	(0.0850)***
Primary education	0.6824	0.6631	0.6602	0.6184	−0.0418	(0.0735)
Secondary education	0.1805	0.2117	0.1966	0.2450	0.0484	(0.0667)
Tertiary education	0.0650	0.0647	0.0760	0.0624	−0.0136	(0.0158)
Other/no education	0.0721	0.0606	0.0672	0.0742	0.0070	(0.0113)
Employed	0.3161	0.3436	0.2905	0.3733	0.0827	(0.0396)**
No prof. qualification	0.7910	0.7309	0.7731	0.7153	−0.0579	(0.0691)
Qualification in agriculture	0.0110	0.0238	0.0107	0.0109	0.0002	(0.0043)
Qualification in manufacturing	0.0604	0.0713	0.0602	0.0740	0.0138	(0.0194)
Qualification in services	0.1376	0.1741	0.1559	0.1998	0.0439	(0.0536)
Panel C. Father's characteristics in 1970						
Age	45.9335	45.8245	45.8638	45.5187	−0.3451	(0.4750)
Main language is German	0.1566	0.9124	0.2553	0.7997	0.5444	(0.0921)***
Primary education	0.4356	0.3469	0.3969	0.3322	−0.0647	(0.0766)
Secondary education	0.3864	0.4823	0.4146	0.4939	0.0793	(0.0543)
Tertiary education	0.1368	0.1425	0.1546	0.1413	−0.0133	(0.0310)
Other/no education	0.0412	0.0284	0.0339	0.0326	−0.0012	(0.0088)
Employed	0.9827	0.9866	0.9822	0.9864	0.0041	(0.0039)
Employed in agriculture	0.1456	0.1607	0.1137	0.1390	0.0253	(0.0793)
Employed in manufacturing	0.5118	0.5624	0.5189	0.5375	0.0186	(0.0438)
Employed in services	0.3422	0.2768	0.3676	0.3235	−0.0441	(0.0924)
Observations	22,398	26,597				
Panel D. Municipality of birth, 1970 Census						
Log population	7.6361	7.6304	8.4705	8.5769	0.1063	(1.3392)
Population density (100 pop./km2)	5.4343	5.5289	11.8259	9.3792	−2.4467	(7.5274)
Share male	0.5084	0.5109	0.5084	0.5067	−0.0016	(0.0138)
Employment-population ratio	0.6097	0.6384	0.5964	0.6532	0.0568	(0.0172)***
Unemployment rate	0.0015	0.0009	0.0013	0.0009	−0.0004	(0.0006)
Share primary education	0.5363	0.4986	0.4831	0.4811	−0.0020	(0.0514)
Share secondary education	0.2587	0.3134	0.2701	0.3191	0.0490	(0.0366)
Share tertiary education	0.0870	0.0891	0.1041	0.0847	−0.0193	(0.0138)
Share other/no education	0.1180	0.0990	0.1427	0.1150	−0.0277	(0.0146)*
Share working in agriculture	0.1150	0.1327	0.0718	0.1127	0.0409	(0.0661)
Share working in manufacturing	0.5427	0.5829	0.5591	0.5861	0.0271	(0.0488)
Share working in services	0.3424	0.2844	0.3691	0.3011	−0.0680	(0.0637)
Share classified as 'rural'	0.4435	0.4869	0.1955	0.3016	0.1062	(0.2356)
Municipalities	272	239				

Notes: The first two columns show means of parental background and municipality of birth characteristics of women born 1951-1960 on the French and German side of the border, respectively. The third and fourth columns show estimated levels at the language border, i.e. estimates of π_0 and $\pi_0 + \pi_1$ (equation 2), respectively. The fifth and sixth columns show the estimated difference at the border ($\hat{pi}_1$) and its standard error in parentheses.

To get parents' characteristics I select from the 1970 census all women born within 20km of the language border between 1951-1960 (the language border sample). 92% of those born on the French side and 90% of those born on the German side are living in a household where their own household status is "child" and there is a least one adult in the household with status "household head". Those are defined as "living with their parents", shown in the first row. I then select the parents, i.e. adults with status "household head" or "partner/spouse of head" in households of those who are living with either a mother (91% and 89%) or father (86% and 85%) in 1970. Panels B and C show characteristics of these parents, by distance from the child's municipality of birth to the language border.

To get municipality of birth characteristics (panel D) I calculate municipality characteristics based on residents as of the 1970 census, except the "rural area" indicator variable, which is from the "Raumgliederung", a collection of municipality characteristics compiled by the Federal Statistical Office. I then match these characteristics to the municipality of birth of my sample (women born within 20km of the language border between 1951-1960, sampled in the 1990 census).

Standard errors clustered by municipality of birth. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 3: Language border contrast in employment and fertility, place of birth controls

	(1)	(2)	(3)	(4)	(5)
Panel A. Dependent variable: employed if child< 5 in the household (1990)					
German born (border diff.)	−0.0834	−0.0859	−0.0837	−0.0970	−0.0980
	(0.0197)***	(0.0212)***	(0.0214)***	(0.0188)***	(0.0195)***
Distance (100 km)	−0.0248	−0.0079	0.0750	0.0991	0.0639
	(0.1407)	(0.1638)	(0.1730)	(0.1310)	(0.1360)
German × distance	−0.0419	−0.0965	−0.2550	−0.1611	−0.0744
	(0.1797)	(0.1903)	(0.2052)	(0.1665)	(0.1743)
Intercept (French born level)	0.4031	0.3902	0.3367	0.3673	0.3763
	(0.0150)***	(0.0186)***	(0.0402)***	(0.0386)***	(0.0373)***
Observations	15,177	15,177	15,177	15,177	15,176
Municipalities of birth	508	508	508	508	508
Panel B. Dependent variable: childless (2000)					
German born (border diff.)	0.0441	0.0392	0.0375	0.0387	0.0343
	(0.0121)***	(0.0097)***	(0.0099)***	(0.0089)***	(0.0087)***
Distance (100 km)	0.0136	0.0033	0.0329	0.1024	0.0740
	(0.0724)	(0.0742)	(0.0761)	(0.0466)**	(0.0465)
German × distance	−0.0408	−0.1532	−0.1605	−0.1800	−0.1630
	(0.1044)	(0.0964)	(0.1097)	(0.0862)**	(0.0852)*
Intercept (French born level)	0.1713	0.1574	0.1496	0.1540	0.1526
	(0.0088)***	(0.0077)***	(0.0167)***	(0.0147)***	(0.0146)***
Observations	46,683	46,683	46,683	46,683	46,680
Municipalities of birth	511	511	511	511	511
Canton fixed effects		✓	✓	✓	✓
Labor market region fixed effects			✓	✓	✓
Municipality controls†				✓	✓
Parental background controls‡					✓

Notes: The sample in Panel A are women born 1951-1960 in a municipality within 20km of the language border, living in a household with a child below age 5 as of the 1990 census. The sample in Panel B are the same women (minus out-migration, death, and mistakes in reported place of birth) but as sampled in the 2000 census and irrespective of whether they live with children in the household. See Section 3 for details on how I select the sample and construct the distance measure. Entries in the table correspond to estimates of the parameters in equation (2). "German born" is the estimate of π_1, the difference at the language border, "distance" and "german × distance" are trend lines separately estimated on either side (π_2 and π_3, respectively). "Constant" is the level on the French-speaking side (at zero distance), i.e. the estimate of π_0.
†: Municipality of birth characteristics are the variables in Panel D in Table 2, i.e. controls for population and population density, gender ratio, emp-pop and unemployment ratios, and educational and sectoral structure from the 1970 census, and a dummy for whether the municipality is classified as rural.
‡: Parental background controls are the variables from panels A-C of Table 2, i.e. controls for the presence of parents, and mothers/fathers' age, education, and professional status (language is excluded).
Standard errors clustered by municipality of birth. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 4: Language border contrast and place of residence in 1990

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Dependent variable: employed if child<5 in the household (1990)						
German born (border diff.)	−0.0980	−0.0886	−0.0841	−0.0837	−0.0834	−0.0513
	(0.0195)***	(0.0194)***	(0.0191)***	(0.0189)***	(0.0188)***	(0.0225)**
Observations	15,176	15,176	15,176	15,176	15,174	14,601
Municipalities of birth	508	508	508	508	508	507
Municipalities of residence	1,895	1,895	1,895	1,895	1,895	1,319
Panel B. Dependent variable: childless (2000)						
German born (border diff.)	0.0336	0.0335	0.0331	0.0329	0.0330	0.0313
	(0.0084)***	(0.0084)***	(0.0084)***	(0.0084)***	(0.0084)***	(0.0081)***
Observations	48,686	48,686	48,686	48,686	48,683	48,269
Municipalities of birth	511	511	511	511	511	510
Municipalities of residence	2,327	2,327	2,327	2,327	2,327	1,910
Place of birth controls†	✓	✓	✓	✓	✓	✓
Residence: Canton and LMR‡		✓	✓	✓	✓	
Residence: Sociodemographics‡			✓	✓	✓	
Residence: Local labor market‡				✓	✓	
Residence: Day -care‡					✓	
Mun. of residence fixed effects						✓

Notes: Table entries are estimates of π_1, the difference at the language border. All specifications include linear trends separately estimated on both sides (estimates not shown) as in equation (2). The sample in panel A is the same as in Table 3. Panel B is slightly different from that table. To be able to control for municipality of residence in 1990 I have to use the 1990 sample. I calculate the share childless by municipality of birth in 2000 (imposing the same restriction, i.e. women born 1951-1960) and match this share to the municipality of birth in the 1990 sample. The border difference is almost identical to Panel B in Table 3, which is only based on the 2000 census.

†: Place of birth controls are the same as in column (5) of Table 3: Canton and labor market region of birth dummies, municipality of birth characteristics, and parental background.

‡: Place of residence controls are based on the municipality of residence in 1990. Canton and LMR: canton and labor market region of residence dummies. The rest are the same as in Table A.1, except the share German speakers. Sociodemographics: population and population density, share male, employment-population ratio, share unemployed, shares for the three levels of education and sectors, and a rural dummy. Local labor market: jobs p.c. and log no. firms in 1985 and 1991, and growth in jobs and firms between 1985-1991. Day-care: number of day-care institutions and full-time equivalents working in day-care per 100 children. The last column includes municipality of residence (in 1990) fixed effects excluding singleton observations. Standard errors clustered by municipality of birth. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 5: Other labor market and fertility outcomes

	French side intercept	German side intercept	German born (border diff.)	
Panel A. Employment and hours of work in 1990				
Employed				
Child < 5	0.4031	0.3196	−0.0834	(0.0197)***
Child ≥ 5	0.5501	0.5145	−0.0356	(0.0188)*
No child	0.8589	0.8801	0.0212	(0.0121)*
Weekly hours of work				
Child < 5	22.2303	21.3377	−0.8927	(1.1007)
Child ≥ 5	25.3118	23.6345	−1.6773	(0.6522)**
No child	37.3716	37.1289	−0.2428	(0.3423)
Panel B. Employment and hours of work in 2000				
Employed				
Mothers	0.7447	0.7434	−0.0012	(0.0117)
Childless	0.8763	0.8874	0.0110	(0.0115)
Weekly hours of work				
Mothers	27.2992	25.7982	−1.5011	(0.4223)***
Childless	37.4419	37.3180	−0.1239	(0.5500)
Share managers				
Mothers	0.0195	0.0110	−0.0085	(0.0053)
Childless	0.0374	0.0394	0.0019	(0.0079)
Panel C. Fertility in 2000				
Number of children				
All	1.7939	1.6840	−0.1099	(0.0531)**
Mothers	2.1647	2.1463	−0.0184	(0.0425)
Age at first birth				
Mothers	27.0115	27.4146	0.4031	(0.3457)

Notes: Column (1) shows the estimate of π_0, i.e. the level on the French side of the border (at zero distance), column (2) shows the level on the German side ($\pi_0 + \pi_1$), and columns (3) and (4) show the estimate of π_1, the difference at the language border. Column (5) shows the standard error of the estimate of π_1, clustered by municipality of birth. All specifications include linear trends (estimates not shown) as in equation (2). See Section 3 and notes to Table 3 for details on sample selection and language border measure.
In panel A I distinguish between women living in a household with a child below age five, above age five but below age 15, and no child below age 15 (as reported in the 1990 census). In panels B-C I distinguish between mothers and childless women based on the number of children they reported to ever have had in the 2000 census (1.33% missings in the 20km sample). "weekly hours of work" and "share managers" only includes women who were working at the time of the census.
* significant at 10%; ** significant at 5%; *** significant at 1%.

Table 6: Sociodemographic Outcomes (1990)

	French side intercept	German side intercept	German born (border diff.)	
Panel A. Education				
Primary education	0.2537	0.2481	−0.0056	(0.0475)
Secondary education	0.6104	0.6253	0.0149	(0.0286)
Tertiary education	0.1012	0.0844	−0.0168	(0.0225)
Other/none	0.0348	0.0423	0.0075	(0.0052)
Panel B. Professional qualification				
Retail	0.0680	0.0902	0.0222	(0.0079)***
Personal care	0.0354	0.0347	−0.0008	(0.0030)
Administration	0.2236	0.1997	−0.0240	(0.0149)
Teaching	0.0830	0.0791	−0.0039	(0.0090)
Health care	0.1188	0.1182	−0.0006	(0.0091)
Communication	0.0232	0.0279	0.0047	(0.0030)
Hospitality	0.0164	0.0292	0.0128	(0.0062)**
Other job	0.1007	0.1085	0.0078	(0.0159)
No job qualification	0.3309	0.3125	−0.0184	(0.0341)
Panel C. Marital status and presence of partner				
Never married	0.1722	0.1970	0.0248	(0.0167)
Married	0.7386	0.7276	−0.0109	(0.0246)
Widowed/divorced	0.0892	0.0753	−0.0139	(0.0094)
Partner in household	0.7858	0.7919	0.0061	(0.0206)
Panel D. Partner's characteristics				
Age difference	−3.0821	−3.0082	0.0738	(0.1426)
Main language German	0.2270	0.7396	0.5125	(0.0671)***
Primary education	0.1342	0.1155	−0.0187	(0.0135)
Secondary education	0.5394	0.5871	0.0478	(0.0269)*
Tertiary education	0.3035	0.2716	−0.0319	(0.0348)
Other/no education	0.0229	0.0257	0.0029	(0.0041)
Employed	0.9824	0.9854	0.0030	(0.0029)
Unemployed	0.0101	0.0060	−0.0041	(0.0020)**
Not in labor force	0.0075	0.0086	0.0011	(0.0016)

Notes: Partner's characteristics only include women who are living in a household with a partner as of the 1990 census. All specifications include linear trends (estimates not shown) as in equation (2). See Section 3 and notes to Table 5 for details. Standard errors clustered by municipality of birth. * significant at 10%; ** significant at 5%; *** significant at 1%.

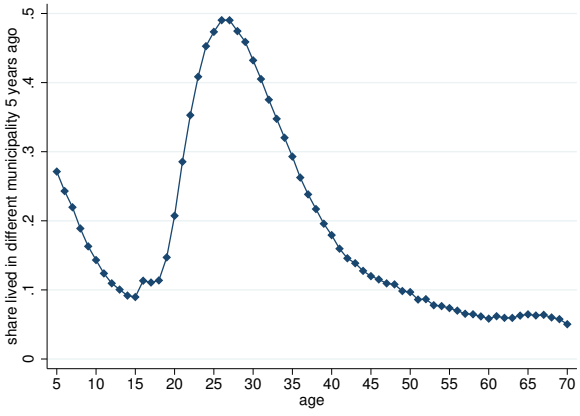
Table 7: Contrasts by education

	Dep. var: Employed, mothers w/ child < 5		Dep. var: Childless	
	coef. (1)	std.err. (2)	coef. (3)	std.err. (4)
German born	0.0473	(0.0359)	0.0253	(0.0143)*
× secondary	−0.1290	(0.0392)***	0.0200	(0.0162)
× tertiary	−0.2302	(0.0497)***	0.0724	(0.0252)***
Distance (100 km)	−0.0122	(0.2048)	0.0005	(0.0009)
× secondary	0.0913	(0.2395)	−0.0006	(0.0010)
× tertiary	0.0088	(0.3634)	0.0008	(0.0016)
German × distance	−0.6590	(0.3021)**	−0.0009	(0.0013)
× secondary	0.6495	(0.3295)**	0.0005	(0.0014)
× tertiary	0.8669	(0.5068)*	0.0021	(0.0025)
Intercept (primary)	0.2650	(0.0220)***	0.1367	(0.0103)***
secondary	0.1171	(0.0280)***	0.0307	(0.0115)***
tertiary	0.4134	(0.0358)***	0.1262	(0.0152)***
German born tertiary − secondary †	−0.1012	(0.0504)**	0.0525	(0.0252)**
Observations	14,872		44,869	

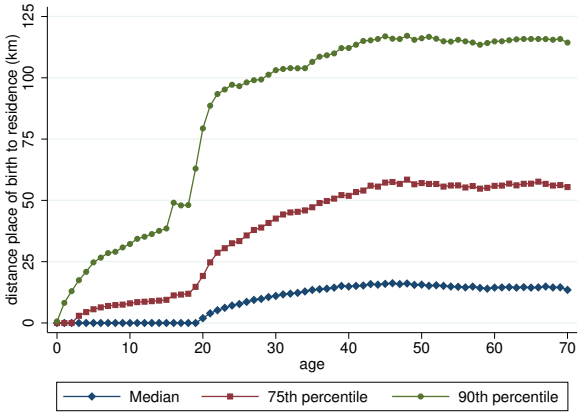
Notes: Columns (1) and (2) show coefficients and standard errors from regressing employment of mothers of children below age five on a fully interacted version of equation 2. All terms are allowed to vary with highest educational achievement: primary education (typically 9 years of schooling), secondary education (mostly apprenticeships leading to professional qualifications and teacher's degrees), and tertiary education (college degrees and advanced professional qualifications). Primary education interaction terms are excluded. Only women whose education could be classified into one of these three categories are included (96.5%). Columns (3) and (4) show the same with childlessness from the 2000 census as a dependent variable. Standard errors clustered by municipality of birth. * significant at 10%; ** significant at 5%; *** significant at 1%.
†: estimates of the differences between the "German × secondary" and "German × tertiary" coefficients and their standard errors.

Figure A.1: Mobility: 1990 census

(a) Share moved since 5y ago

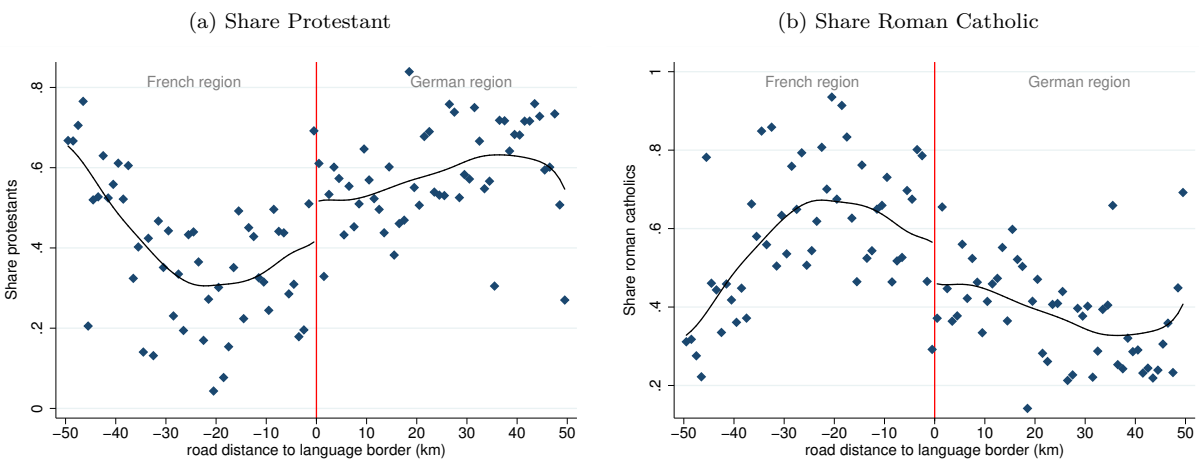


(b) Distance from place of birth to residence



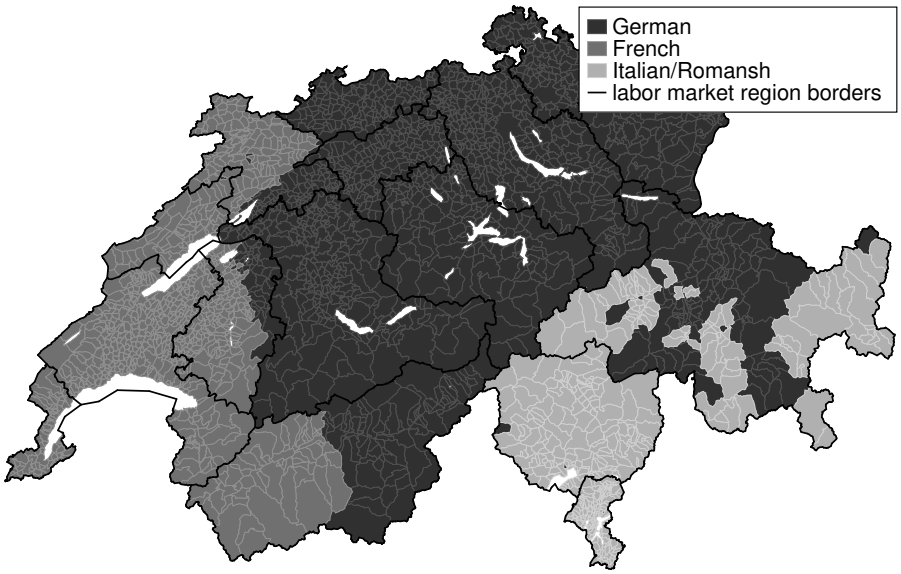
Notes: Panel (a) plots the share living in a different municipality in 1990 than in 1985 by age of the respondent, according to the 1990 census question on place of residence 5 years ago. Panel (b) plots the median, 75th and 90th percentiles of distance in km between place of birth and place of residence in 1990.

Figure A.2: Religious affiliation, by distance to language border



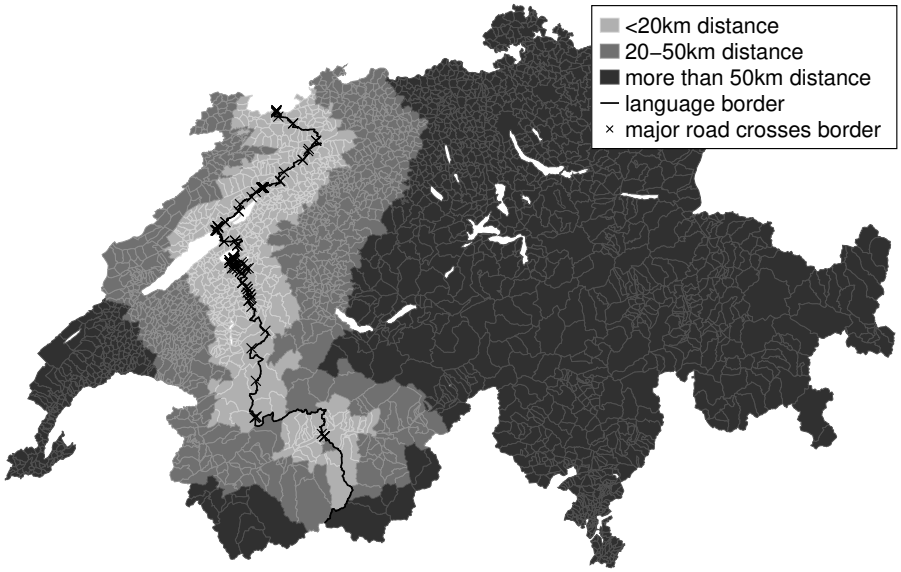
Notes: Figures plot the share of 1970 census respondents who indicated to be affiliated with the protestant / roman catholic church among all repondents (the most common alternative answer was "none"), by distance from the municipality of residence in 1970 to the language border. Lines are locally weighted regression estimates (lowess).

Figure A.3: Labor market regions and languages in Switzerland



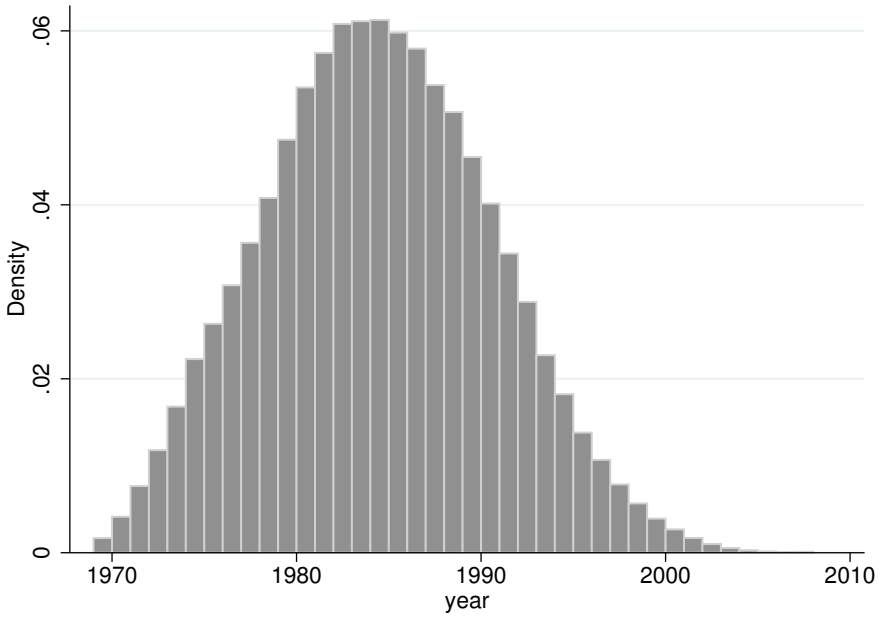
Notes: Map plots municipalities of Switzerland (administrative boundaries) by majority language among residents as surveyed in the 1970 Swiss population census. Heavy black lines delineate labor market region borders. The 16 regional labor markets (as of the 2000 census) are defined by the Federal Statistical Office based on commuting patterns. White areas are lakes.
Source: data from 1970 Swiss Population Census, GEOSTAT (GIS shape files) and Raumgliederung 2000, Federal Statistical Office, Neuchâtel.

Figure A.4: Distance to language border



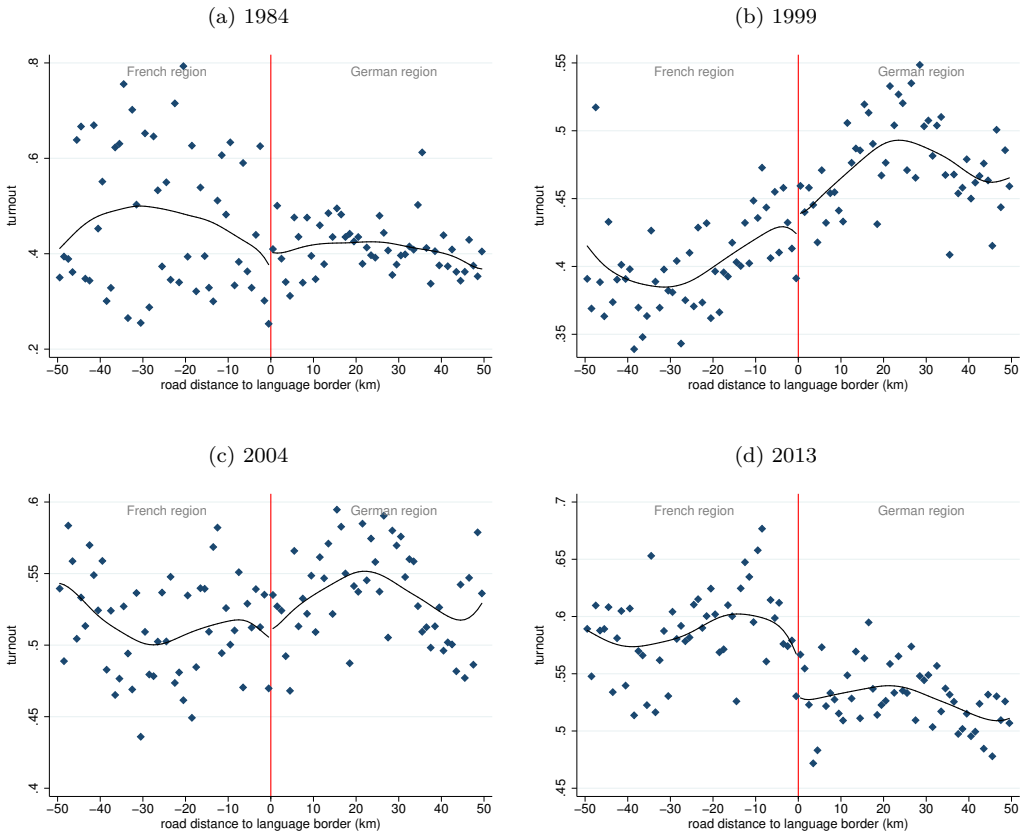
Notes: Map plots municipalities of Switzerland (administrative boundaries) shaded by distance from the municipality center (which is the political/economic center as defined by the FSO) to the nearest crossing point (the X's). See Section 3 on how the measures are constructed.
Source: data from 1970 Swiss Population Census and GEOSTAT (GIS shape files), Federal Statistical Office, Neuchâtel. Road data from openstreetmap.

Figure A.5: Histogram of births of 1951-1960 cohort



Notes: Figure plots histogram of births by year of birth of the child for the 1951-1960 cohort of women. Data are from the birth register (BEVNAT) and includes all births in Switzerland between 1969 and 2008.
Source: data from birth register (BEVNAT) 1969-2008, Federal Statistical Office, Neuchâtel.

Figure A.6: Voter turnout in selected national votes



Notes: Figures plot the share of eligible voters who cast their vote in a municipality, averaged within 1km distance bins. Panel (a) shows the results of the 1984 vote "Volksinitiative für einen wirksamen Schutz der Mutterschaft": Initiative for effective protection of motherhood, which failed to pass with 15.8% yes. Panel (b) shows the results of the 1999 vote "Bundesgesetz über die Mutterschaftsversicherung": Federal law on maternity insurance, which failed to pass with 39.0% yes. Panel (c) shows the results of the 2004 vote "Bundesgesetz über die Erwerbsersatzordnung für Dienstleistende in Armee, Zivildienst und Zivilschutz (Erwerbsersatzgesetz, EOG)": Federal law regarding income compensation allowance in the event of service, which passed with 55.5% yes. Panel (d) shows the results of the 2013 vote "Familieninitiative: Steuerabzüge auch für Eltern, die ihre Kinder selber betreuen": Family initiative, tax deductions for parental child care, which failed to pass with 41.5% yes. See Section 3 on how I construct the distance measure. Lines are locally weighted regression estimates (lowess).
Source: data from Statistik der Wahlen und Abstimmungen, Federal Statistical Office, Neuchatel.

Table A.1: Characteristics of the municipality of residence in 1990

	Means (20km sample)		Language border contrast			
	French born	German born	French side intercept	German side intercept	border diff.	
Panel A. Sociodemographics (1990 Census)						
Log population	8.4083	8.4916	8.5363	8.7070	0.1707	(0.3361)
Population density (pop./km2)	11.7499	10.1742	13.7789	11.9926	−1.7863	(3.3606)
Share male	0.4941	0.4968	0.4959	0.4954	−0.0005	(0.0032)
Employment-population ratio	0.5113	0.5238	0.5142	0.5268	0.0126	(0.0037)***
Unemployment rate	0.0238	0.0162	0.0237	0.0185	−0.0053	(0.0018)***
Share primary education	0.2767	0.2237	0.2596	0.2343	−0.0253	(0.0093)***
Share secondary education	0.3470	0.4033	0.3524	0.3920	0.0396	(0.0070)***
Share tertiary education	0.0942	0.0897	0.1009	0.0916	−0.0093	(0.0063)
Share working in agriculture	0.0464	0.0523	0.0437	0.0504	0.0067	(0.0110)
Share working in manufacturing	0.3170	0.3404	0.3143	0.3266	0.0123	(0.0163)
Share working in services	0.6097	0.5711	0.6169	0.5827	−0.0342	(0.0212)
Classified as rural	0.3479	0.3596	0.2635	0.3098	0.0463	(0.0870)
Panel B. Local labor market (1985-95 enterprise census)						
Jobs p.c. in 1985	0.7709	0.7229	0.7914	0.7604	−0.0310	(0.0543)
Jobs p.c. in 1991	0.8284	0.7842	0.8305	0.8109	−0.0196	(0.0552)
Growth in jobs p.c. 1985-91	0.1161	0.1187	0.1043	0.1165	0.0122	(0.0151)
Log no. firms in 1985	5.3762	5.3410	5.4680	5.5895	0.1215	(0.3371)
Log no. firms in 1991	5.5427	5.4869	5.6478	5.7400	0.0922	(0.3373)
Growth in firms 1985-91	0.1791	0.1634	0.1875	0.1664	−0.0211	(0.0104)**
Panel C. Day care (1995 enterprise census)						
Day-care institutions per 100 children (1995)	0.2166	0.1433	0.2287	0.1731	−0.0556	(0.0342)
Day-care FTE per 100 children (1995)	1.2159	0.8779	1.3950	1.2443	−0.1507	(0.2782)
Municipalities Birth	272	239				
Municipalities Residence	1,562	1,938				
Observations	22,072	26,617				

Notes: I calculate municipality characteristics among all residents in the 1990 census and calculate the number of day-care institutions and full-time equivalents per 100 children under age 5 (as of the 1990 census), the number and growth of jobs and firms from the enterprise census 1985, 1991, and 1995. I then match these characteristics to the municipality of residence (in 1990) of my sample (women born 1951-1960) and contrast outcomes by municipality of birth. Standard errors clustered by municipality of birth. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table A.2: Robustness to bandwidth variation

Bandwidth method	border municipalities	fix	fix	fix	fix	IK	MSEO
Trends	None	Linear	Linear	Linear	Quadratic	Linear	Linear
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
bandwidth		10.0000	20.0000	40.0000	20.0000	22.4247	27.6659
Employed	−0.0851	−0.0715	−0.0834	−0.1001	−0.0939	−0.0821	−0.0904
	(0.0113)***	(0.0257)***	(0.0197)***	(0.0140)***	(0.0285)***	(0.0185)***	(0.0186)***
Municipalities	68	216	508	1,092	508	577	740
Observations	4,094	8,022	15,177	39,005	15,177	17,319	25,096
bandwidth		10.0000	20.0000	40.0000	20.0000	13.0694	16.5431
Childless	0.0474	0.0472	0.0441	0.0506	0.0387	0.0422	0.0456
	(0.0084)***	(0.0161)***	(0.0121)***	(0.0096)***	(0.0175)**	(0.0124)***	(0.0140)***
Municipalities	69	219	511	1,110	511	311	422
Observations	12,095	24,121	46,683	121,184	46,683	30,147	39,444

Notes: First column includes only women born in municipalities that have a direct road connection (are adjacent) to a municipality from the other language region. In this column I simply compare means and do not include distance trends. Columns (2)-(5) vary the bandwidth and functional form of the trends. Column (6) uses the optimal bandwidth as calculated by the procedure proposed in Imbens and Kalyanaraman (2012). Column (7) uses the program described in Calonico et al. (2017) to calculate the (bias-corrected, MSE-optimal) bandwidth, coefficient, and standard error. Standard errors in parentheses, clustered (in all columns) by municipality of birth. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table A.3: Varying the cohort window

	N	French side intercept	German side intercept	border diff.	
Panel A. Employment of mothers of children < 5 in 1990					
Born 1951-1960 (LBS; age 29-39)	15,177	0.4031	0.3196	−0.0834	(0.0197)***
Born 1953-1962 (age 27-37)	18,517	0.3919	0.3144	−0.0775	(0.0203)***
Born 1949-1958 (age 31-41)	11,102	0.4080	0.3263	−0.0817	(0.0211)***
Panel B. Childlessness in 2000					
Born 1951-1960 (LBS; age 39-49)	46,683	0.1713	0.2154	0.0441	(0.0121)***
Born 1953-1962 (age 37-47)	47,786	0.1795	0.2233	0.0438	(0.0119)***
Born 1949-1958 (age 41-51)	45,900	0.1675	0.2078	0.0403	(0.0138)***

Notes: The only difference from the main results (Table 3), repeated here in the first row (for the "language border sample"), is that I vary the sample restriction in terms of year of birth. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table A.4: Including sociodemographic variables as controls

	(1)	(2)	(3)	(4)
Panel A. Employment, mothers of children < 5 (1990)				
German born	−0.0834	−0.0693	−0.0711	−0.0815
	(0.0197)***	(0.0142)***	(0.0151)***	(0.0202)***
Observations	15,177	15,177	14,549	14,549
Municipalities of birth	508	508	508	508
Panel B. Childlessness (2000)				
German born	0.0441	0.0378	0.0394	0.0323
	(0.0121)***	(0.0065)***	(0.0072)***	(0.0075)***
Observations	46,683	46,683	35,907	35,906
Municipalities of birth	511	511	511	511
Individual sociodemog. variables		✓	✓	✓
Partner variables			✓	✓
Municipality of birth and parental controls				✓

Notes: Column (2) includes individual sociodemographic variables: dummies for age, age of the youngest child (only in Panel A), education, learned profession, marital status and whether there is a partner in the household (see Table 6). Column (3) limits the sample to women living with a partner in 1990/2000 and includes partner controls: age difference, dummies for partner's education and partner's employment status (employed/unemployed/other). Standard errors clustered by municipality of birth. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table A.5: Religion

Sample	all	all	Protestants	Catholics	none/other
	(1)	(2)	(3)	(4)	(5)
Panel A. Employment, mothers of children < 5 (1990)					
German born	−0.0834	−0.0912	−0.0968	−0.0991	−0.0368
	(0.0197)***	(0.0194)***	(0.0273)***	(0.0292)***	(0.0700)
Observations	15,177	15,177	6,149	7,680	1,348
Municipalities of birth	508	508	357	408	255
Panel B. Childlessness (2000)					
German born	0.0441	0.0410	0.0331	0.0328	0.0397
	(0.0121)***	(0.0092)***	(0.0130)**	(0.0130)**	(0.0222)*
Observations	46,683	46,683	17,961	22,175	6,547
Municipalities of birth	511	511	425	454	443
Religious affiliation dummies		✓			

Notes: Column (2) includes dummies for religious affiliation (Protestant, Roman Catholic, or none/other) as indicated by census respondents in 1990/2000. Columns (3)-(5) split the sample by religious affiliation. Standard errors in parentheses, clustered by municipality of birth. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table A.6: Child care questions in the 1991-1995 SLFS

	French region	German region	difference	
Employed mothers of children < 5: Who takes care of child?				
Other person in household	0.3196	0.5326	0.2129	$(0.0303)^{***}$
Mother herself	0.1148	0.0964	−0.0183	(0.0191)
Grandparents	0.1455	0.1562	0.0107	(0.0196)
Other relatives	0.0920	0.0820	−0.0100	(0.0163)
Day nanny	0.1570	0.0515	−0.1055	$(0.0211)^{***}$
Day nursery	0.0869	0.0267	−0.0602	$(0.0137)^{***}$
Other / none	0.0842	0.0547	−0.0296	$(0.0171)^{*}$
Observations	964	1,199		
Not employed mothers of children < 5: Would you like to work if the child-care problem were sorted?				
Yes	0.4064	0.3084	−0.0980	$(0.0222)^{***}$
Yes, depending on circumstances	0.2357	0.2214	−0.0142	(0.0194)
No	0.3579	0.4702	0.1123	$(0.0217)^{***}$
Observations	1,346	2,353		

Notes: Sample in this table includes all female respondents to the Swiss Labor Force Survey 1991-1995 age 20-45 with a child below age 5 in the household (the questions were only selectively asked in later waves). Sampling weights are used. I assign respondents to language regions by municipality of residence since the labor force survey did not ask for the place of birth. Standard errors of the difference in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.
Source: data from Swiss Labor Force Survey (SAKE) 1991-1995, Federal Statistical Office, Neuchatel.

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(ANR-11-LABX-0091, ANR-11-IDEX-0005-02)

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