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Distaste for Centralization: Evidence from a Quasi-Natural Experiment in Switzerland

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Abstract
Do people care about the degree of centralization? This paper examines the effects of local centralization reforms on individuals' well-being using a quasi-natural experiment in Switzerland. The results reveal that centralization has a causal negative impact on individuals' life satisfaction. Consistent with the concept of procedural utility, centralization reduces individuals' feeling of having political influence and interest in politics. In contrast, there are no impacts on individuals' satisfaction with local governments' performance. These findings shed new light on what people value in decentralized institutions.

Keywords: Decentralization, life satisfaction, public spending, procedural utility
JEL codes: H11; H40; I31

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Over the last three decades, many governments, officials, multilateral agencies, non-governmental organizations, and academics have promoted decentralization, that is, the transfer of authority and responsibility to local levels of government. For example, the World Bank has run programs in support of decentralization in 74 countries (e.g., countries in Central and Eastern Europe, Ethiopia, Nigeria, Sri Lanka, South Africa, Philippines, Argentina, Brazil, Indonesia, Mali, Senegal, Uganda, Mexico). The recent cases of Scotland and Catalonia seeking greater independence have further raised the importance of local autonomy in the public debate.

However, research to date has not reached a consensus on the tradeoff between centralized and decentralized systems. Decentralization may increase government officials' sensitivity to local conditions and needs (Tiebout 1956, Oates 1972). It may help to cut complex bureaucratic procedures (Brennan and Buchanan 1980). It may also provide better opportunities for participation by local residents in decision making (Besley and Coate 2003, Lockwood 2007). In addition, it may lead to more creative, innovative, and responsive programs by allowing local experimentation (Besley and Case 1995, Besley and Smart 2007). However, decentralization may also result in the loss of economies of scale and allow functions to be captured by local elites (Bardhan and Mookherjee 2000). This implies that the overall effects of decentralization on individuals' well-being are difficult to predict depending on the relative strengths of these and other channels.

Most of the empirical literature on decentralization has focused on evaluations based on the performance of decentralized governments. Studies show that decentralization leads to greater economic efficiency (Davoodi and Zou 1998, Iimi 2005, Rodriguez-Pose and Ezcurra 2011), lower poverty and inequality (Sepulveda and Martinez-Vazquez 2011), greater efficiency of education services (Barankay and Lockwood 2007) and social services (Faguet 2004), and lower corruption (Fisman and Gatti 2001). The focus on local government performance is because this is often the best available measure of decentralization outcomes. However, the research on self-determination and local participation indicates that decentralization may affect people's well-being through additional channels than local government performance. For example, decentralization may increase the feeling of having a say in daily politics and policy or the feeling of being part of a local community. Therefore the focus on local government performance may fail to capture the overall effects of decentralization. Accordingly, it is important that comprehensive evaluations of decentralization account for its effects on individuals' well-being *per se* and not only on the performance of local governments.

To examine this issue, this paper tests whether centralization reforms, that is, the transfer of authority and responsibility from local to more centralized levels of government, have a causal effect on individuals' well-being (measured by life satisfaction). It

also investigates what individuals value in centralization versus decentralization and what are the critical factors of decentralization for individuals' well-being. Finally, it tests whether centralization reforms have long-run effects on well-being and assesses the extent to which individuals' preferences adapt to different local systems. This paper presents the first analysis of causal effects of centralization reforms on individual well-being and is the first to investigate whether centralization effects on well-being persist over time, that is, whether they are long-run effects that may be undetected by local government performance alone.

Previous research on decentralization and subjective well-being has major drawbacks. All the studies are based on cross-sectional comparisons: Frey and Stutzer (2000) run cross-cantonal regressions using Swiss data, and Bjornskov et al. (2008) and Voigt and Blume (2012) rely on cross-country data. Diaz-Serrano and Rodriguez-Pose (2012) replicate a similar analysis using European data. Two studies explore the relationship between decentralization and life satisfaction in developing countries: Gao et al. (2014) and Sujarwoto and Tampubolon (2015). To the best of the author's knowledge, only one study, Sujarwoto and Tampubolon (2015), investigates the effects of decentralization reforms on citizen happiness in Indonesia by conducting a multilevel analysis. All of the studies find that fiscal and political decentralization are positively correlated with life satisfaction. The important difficulty with these cross-section analyses is that the effect of decentralization is likely to be contaminated by omitted variables, for example, culture, political preferences, and overall institutional settings, that are correlated with both the degree of decentralization and individuals' subjective well-being.

In this paper, I take advantage of a quasi-natural experiment that has transferred political, financial, and administrative responsibilities in Switzerland from municipalities to cantons between 2000 and 2012.[1] On average these cantonal reforms have reduced municipal autonomy and have increased centralization at the canton level. This framework is particularly attractive for three reasons. First, the decrease in local autonomy has followed efforts to improve the effectiveness and transparency of public action through national incentives (e.g., "New Public Management Reforms" and the "New Fiscal Equalization Reform"). The timing of the reforms across all cantons is geographically dispersed in a quasi-random fashion. Hence comparison of individuals' well-being before and after the reforms in cantons that implemented the reforms (treated group) and in cantons that did not or that did it later (control group) provides a simple method for evaluating the causal effect of centralization. Second, the cantonal reforms framework has transferred responsibilities in a broad range of domains such as health, education, social affairs,

[1]Canton is a type of administrative division. Cantons roughly correspond to "regions" or "semisovereign states" when compared with other administrative divisions. They are larger than municipalities in terms of area and population. There are 26 cantons in Switzerland.

transport, and public administration. Third, although Switzerland is one of the most decentralized countries in the world, it has some external validity because centralization reforms of this type have been carried out in other European countries.[2]

I match this institutional setting with individual panel data, the Swiss Household Panel (SHP), which provides information on a full range of socioeconomic outcomes and individual life satisfaction under the period of investigation. These data have several advantages. They report both the canton and the municipality of residence. In addition, because the same individuals are observed over several years, it enables testing for endogenous residential sorting, namely, the possibility that individuals would move to cantons where political decisions are in accordance with their preferences. It also provides a rich set of individual characteristics that can be controlled for to minimize this potential bias. Moreover, the SHP enables the dynamic effects of centralization reforms on individual life satisfaction to be tracked over time. In contrast, previous studies have looked only at average estimates. It is possible that the effect on individual well-being varies according to implementation costs or economies of scale when adopting the reforms. Accordingly, the overall effect could increase or decrease over time. Finally, these SHP data include information on different domains of satisfaction (e.g., satisfaction with public expenses, democracy, political influence, health, and financial situation). Decomposing the effects of centralization reforms among different domains and comparing different population subgroups allows us to identify the aspects of centralization that are critical factors of individual well-being and sheds new light on the tradeoff between centralized and decentralized governments.

To preview my findings, I find that the degree of centralization matters for individual well-being. That is, after controlling for a range of individual and local characteristics, individuals exposed to a centralization reform experience a small decrease in life satisfaction, equivalent to 3 percent of a standard deviation. Although the effect is small, it is statistically significant, robust to many specification checks, and consistent with the findings of previous studies.

A degree of caution must be exercised in estimating centralization effects on subjective well-being, because biases related to measurement and endogeneity may critically influence the results. Related to the latter issue, I show that the results are unlikely to be driven by endogenous residential sorting. In addition, and perhaps more importantly, I find no significant anticipation effects in the years prior to the implementation and no significant spillover effects in the cantons that did not implement the reforms or that did it later. Finally, respondents living in cantons affected and in cantons not affected by the

[2]For example, several regional reforms were adopted in 2014–2015 in France (*loi de modernisation de l'action publique territoriale, loi relative à la délimitation des régions, and loi portant sur la nouvelle organisation territoriale de la République*).

reforms evolved sufficiently similarly to make the experiment reliable.

Investigating various potential mechanisms, I find that the impact of the centralization reforms on life satisfaction appears to be driven by voters who may have fewer opportunities to participate in the political process and have the feeling of losing political influence. This is consistent with a procedural disutility effect, meaning decreased satisfaction derived from political participation. In contrast, I do not find evidence of a decrease in life satisfaction for people in bad health, people with children, or people who benefit from the social system, who are potentially affected by the reforms. Consistently, I do not observe decreases in financial satisfaction, satisfaction with health status, and satisfaction with public expenses. These findings highlight the lack of a negative relationship between the Swiss centralization reforms and satisfaction with the performance of local governments and the difficulty in evaluating local autonomy policy based solely on government performance and other standard economic variables. That is not to say such evaluations are not viable. Here, the economic effects of the reforms may be delayed or biased downward by preexisting cooperation at the canton level. By using more long-run data, it is possible to find a stronger effect on government performance. Nevertheless, there is clearly scope for using subjective well-being data, among other evaluation tools, to assess individuals' experience of centralization reforms and to identify well-being effects that may be undetected by government performance alone.

The remainder of this paper proceeds as follows. Section I. describes the Swiss context and the centralization reforms. Section II. presents the data and the empirical strategy. Sections III. and IV. discuss the central results of the paper, robustness checks, and tests for underlying mechanisms. Section V. concludes.

I. The Swiss Context and the Reforms

A. The Swiss System

There are three administrative levels in Switzerland: the Federation, cantons, and municipalities. The Federation is divided into 26 sovereign cantons, each of which has its own constitution and unicameral parliament. The cantons exercise broad authority, possessing all the powers that are not specifically given to the federal government. The third administrative level is the municipality, which also has autonomy within the limits of the federal and cantonal jurisdictions. In 2012 there were 2495 municipalities (Swiss Federal Statistics),[3] but the size and population of municipalities varies enormously, the smallest having fewer than 100 inhabitants and the largest almost 400000 inhabitants

[3] www.bfs.admin.ch

(Zurich). The Federation grants autonomy to each municipality and introduced a new article in the last Federation Constitution of 18 April 1999 (SR/CH 101, art. 50, para. 1) that stipulates: "The autonomy of the municipalities shall be guaranteed in accordance with cantonal law." The local government and its deciding and acting autonomy are well recognized within this constitutional article, which moreover justifies the right to maintain local responsibilities.

This autonomy of the municipalities is feasible for three reasons. First, local governments can access sufficient resources and can use these resources autonomously. In 2008, the share of total resources was close to 30 percent for the Federation, 40 percent for the cantons, and 30 percent for the municipalities, based on local taxes and revenues. Municipalities thus control almost the same amount of income as the Federation (Swiss Federal Statistics, 2008). Second, accountability and transparency at the local level are guaranteed by direct democratic instruments in addition to representative democratic parliaments and governments. The most important direct democratic instruments in cantons are the popular initiative to change the canton's constitution or laws, compulsory and optional referenda to prevent new laws, and the changing of existing laws and optional financial referenda to prevent new state expenditure. Therefore, all citizens participate and play an active role in political life at the local level. The third reason that the autonomy of municipalities is feasible is that there exists a strong legal framework clearly setting out the powers, rights, and duties of local governments.[4]

Traditionally, many responsibilities are shared between the Swiss cantons and the local municipalities, such as education, local police, policy relating to culture, sports, youth, and the elderly, building and surveillance of local roads, the local public transport system, health (home care, fighting addiction, health promotion), public welfare, and the environment (waste management and water treatment). The assessment of public expenditure (federal, cantonal, municipal), according to functions, reveals that municipalities have the highest share in the budget areas of environment (63 percent) and culture, sports, and recreation (62 percent). The cantons are more heavily represented in public order (47 percent), health (83 percent), education (58 percent), and administration (41 percent). The Federation has an exclusive position in foreign affairs (100 percent), a dominant position in defense (90 percent), and assumes half of the public expenditure related to the economy (44 percent) (Swiss Federal Statistics, 2011).

However, because of the right of the cantons to organize themselves independently,

[4]Consequently, many Swiss people identify first and foremost with their local government and not with Switzerland. In the rural areas, the villages come first. At the municipal level, this identification with the local level finds its expression in the fact that many administrative tasks are not carried out by professional staff but by ordinary people who devote between a few hours per month and up to several days per week to specific tasks.

there is considerable variation in cantonal and municipal government structures with regard to the division of competences between cantons and municipalities ("the extent of municipal autonomy"). In Zurich, for example, municipalities are the bearer of complete residual power, meaning that "political communes are responsible for all those public affairs for which neither the Confederation nor the canton is responsible."[5] In Glarus, the residual power is confined to "local affairs,"[6] while municipalities in Fribourg have only those functions that are delegated to it by a legal act.[7]

B. The Centralization Reforms

Between 2000 and 2012, 19 out of the 26 Swiss cantons launched reforms to change the distribution of tasks and responsibilities between cantons and municipalities. With these cantonal reforms of task allocation, fewer policy-making and implementation responsibilities have been transferred to municipalities. A first analysis of the reforms clearly shows a centralization movement. This may be explained by the considerable decentralization in Switzerland that, as opposed to other centralized countries, requires centralization for service provision to be homogenized.

There are a number of reasons behind these reforms. First, the purpose of the reforms was to increase cantonal responsibilities and restrain public spending. Cantons face large variations across municipalities in terms of financial and administrative capacity. Specifically, municipalities in large cantons such as Vaud, Lucerne, Aargau, and Bern have difficulties in dealing with tasks delegated to them and need financial support. These reforms therefore aimed to help municipalities deal with economic pressures and improved the transparency of local public finance (Jacot-Descombes 2013). Second, these reforms followed the introduction of "New Public Management Reforms," which improved the efficiency of public action, and the introduction in 2008 of the "New Fiscal Equalization Reform," which changed the distribution of tasks and responsibilities between the Federation and cantons. Consequently, cantons were required to reform their own legislation to anticipate or adapt to these national reforms.

Each canton has reformed at least one significant area—in financial terms—regarding schools (usually in primary and secondary schools), health (particularly hospitals), and social affairs (usually either social assistance and/or social insurance). Appendix Tables A.1 -A.5 provide a detailed description of selected reforms. Transfers have occurred at the decision, financial, and implementation levels. In terms of implementation, social insurance is still shared between cantons and municipalities, because municipalities act

[5]Article 83 KV Zurich.

[6]Article 119 KV Glarus.

[7]Article 133 KV Fribourg.

as good local relays to deliver benefits.

Education is clearly the area where most of the tasks have been transferred. This was a policy domain that remained highly decentralized. These reforms have unified school organization between cantons. For example, in the cantons of Bern and Vaud, responsibilities of secondary schools have been entirely transferred to the canton level. In Vaud, this is also the case for primary schools. The areas that have also been the most often affected are health and social services. In health, a strategy of "cantonalization" clearly appears in hospital systems (cantons of Neuchâtel, Jura, and Bern). Aargau, Graubünden and Schwyz are the only cantons where the hospital system is not entirely centralized. Vaud also centralized its ambulance and emergency systems. Finally, the field of social and social insurance has been relatively centralized by the reforms, in particular with respect to standards governing social assistance and public support services, as well as tasks related to federal legislation regulating social security, including unemployment (Aargau, Bern), health insurance (Aargau, Bern), and additional services (Aargau and Neuchâtel). These three policies (schools, health, and social services) are areas where the cantons and municipalities allocate more financial resources, giving significant weights to all these transfers.

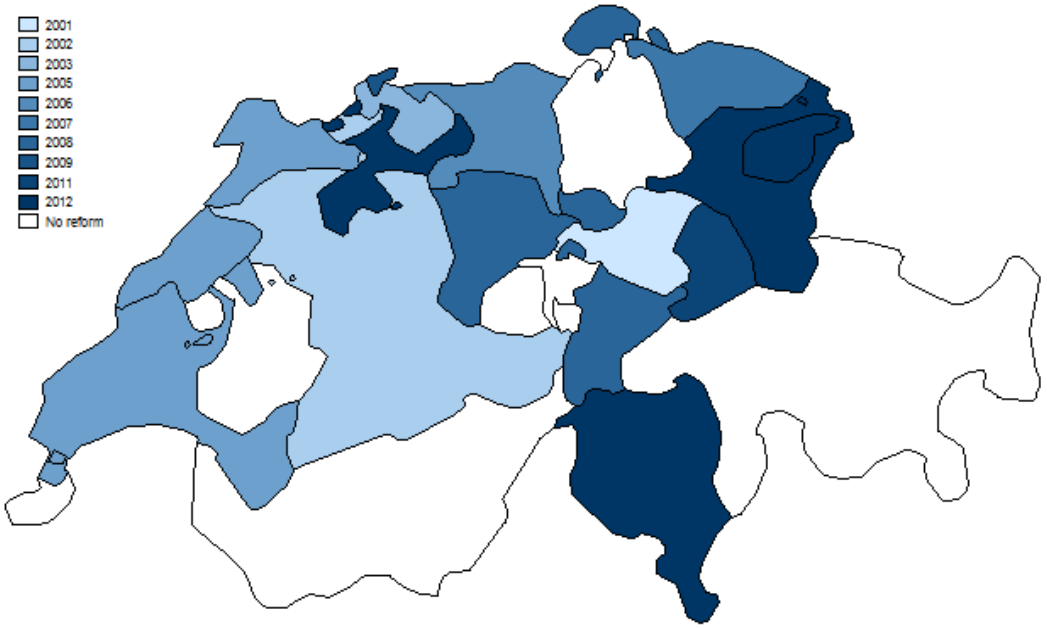
The reforms were not adopted at the same time across cantons. Cantons had large incentives to modify their own legislation and implement the reforms, but were given the liberty to decide the exact timing themselves. In particular, municipalities were heavily involved and consulted during the process of implementing the reforms. Thus the final timing of the reforms across cantons was partly determined by a legislative process. The majority of the reforms were implemented in 19 cantons between 2000 and 2012. There may have been some reforms in the 7 remaining cantons, but by 2012 they were limited or not yet implemented. Figure 1 shows the geographical distribution of the timing of the reforms. The spread of the reforms was not concentrated in certain parts of Switzerland, and early-, middle-, and late-reforming cantons are present in all parts of the country.

C. Were the Cantonal Differences in the Timing of the Centralization Reforms Random?

For the identification strategy, the timing of the reforms does not need to be independent of fixed cantonal characteristics, because I will control for canton fixed effects. However, it is informative to investigate what cantonal characteristics, if any, would predict the timing of the reforms across cantons.

I here look at the relationship between the timing of the reforms and cantonal characteristics such as income per capita, public spending, degree of decentralization, degree of

Figure 1: Timing of the Reforms across Swiss Cantons



Source: Ruhli (2012) "Autonomie communale entre illusion et réalité. Monitoring des cantons 4: Structures communales et politique structurelle communale des cantons"

direct democracy, language, religion, and sociodemographic characteristics. I use administrative data from the Federal Population Census[8] and the *Base de données des cantons et des villes suisses* (BADAC).[9] Every 10 years, the Federal Population Census is realized and shows the demographic, spatial, social, and economic developments of Switzerland. The BADAC collects hundreds of data items from a variety of sources such as the Swiss Official Statistics, the Department of Finance, and the IDHEAP survey[10] at the canton and municipality levels. Appendices C.1. and C.2. provide a definition of the canton-level variables used in the analysis from these sources. The index of direct democracy is from Stutzer (1999). It is an unweighted average of four indices that evaluate the power of the different direct democratic institutions. These include the constitutional initiative, the statutory initiative, the fiscal referendum, and the statutory referendum. The index takes values from 1 to 6, where 6 indicates the highest degree of direct democracy. The exact construction of the index is explained in Appendix C.3..

Table 1 reports the results of two canton-level regressions without and with region dummies. The dependent variable is the year of the reform in each canton, and the explanatory variables are those listed above in years 1970; 1980; and 1990–2000 (pre-reform period). I find no significant relationship between the timing of the reforms and cantonal

[8] www.bfs.admin.ch

[9] www.badac.ch/fr/index.php

[10] The Swiss Graduate School of Public Administration (French: *Institut des hautes études en administration publique*)

characteristics such as income per capita, public spending, and degree of decentralization. Apart from region dummies, none of the explanatory variables are statistically significant.[11]

Table 1: Exogeneity of the Centralization Reforms (Canton Level)

	Year of reform	
	without region dummies	with region dummies
Ln cantonal income per capita	-0.542 (3.170)	1.198 (2.877)
Ln cantonal population	-0.495 (3.846)	-3.113 (3.431)
Ln cantonal public spending	0.195 (3.183)	1.382 (2.910)
Degree of decentralization	-0.0308 (0.0834)	-0.009 (0.074)
Direct democracy	-0.112 (0.757)	0.146 (0.681)
Age 15-30	9.620 (58.78)	11.52 (52.75)
Age 30-45	23.51 (39.20)	21.22 (33.32)
Age 45-65	2.079 (34.60)	2.587 (31.18)
Age 65 +	15.08 (26.26)	8.720 (23.75)
% women	3.159 (54.32)	6.730 (49.80)
% married	-7.421 (34.54)	-2.254 (30.99)
% foreigner	4.398 (17.30)	-0.368 (15.26)
% Christian	6.074 (52.27)	3.040 (47.20)
% Muslim	11.22 (65.66)	5.077 (59.84)
% Jewish	-32.36 (305.8)	10.19 (282.9)
% no religion	3.156 (49.82)	3.939 (44.82)
% French	1.489 (13.10)	0.0870 (11.64)
% German	2.421 (13.16)	0.947 (11.64)
% Italian	3.880 (13.03)	0.958 (11.64)
% employed	4.656 (28.15)	5.889 (25.22)
% unemployed	-8.790 (160.8)	-19.45 (144.6)
% primary education	-11.56 (56.43)	-11.83 (51.66)
% secondary education	-13.94 (60.24)	-15.42 (54.99)
% tertiary education	4.427 (22.73)	7.529 (20.01)
Region dummies	No	Yes
Observations	247	247

Notes: All explanatory variables are from the Federal Population Census or *the Base des Donnees des Cantons et Villes Suisses* (BADAC). Years: 1970; 1980; 1990-2000. When values are missing, I use multiple imputation.

Table 2 shows the degree of local decentralization at the canton level before and after the reforms. The share of municipal expenditure in the total amount of cantonal expenditure shifts downward by 4 percentage points in cantons that implemented a centralization reform (with a maximum of 10 percentage points in Neuchâtel and Bern).

Table 2: Impact of the Reforms on the Degree of Local Decentralization

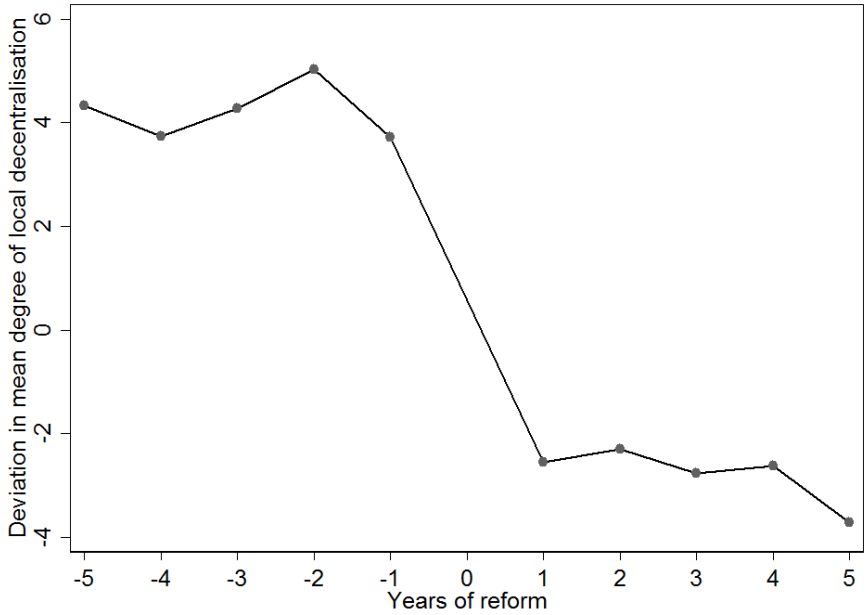
	Before Reform	After Reform	Change (S.E.)
Degree of local decentralisation	48.71 (1.09)	44.68 (1.47)	- 4.03*** (1.85)

Notes: Based on 19 cantons from 1997 to 2007. Data are from the *Base de Données des Cantons et Villes Suisses* (BADAC). In parentheses, standard deviations in columns 1 and 2 and standard errors in column 3. The degree of local decentralization is measured by the share of municipal expenditure in the total amount of cantonal expenditure.

[11]Running the same regressions but using a shorter time period (1990-2000) provides similar findings. I also test alternative specifications using hazards models. The same results are obtained.

The impact of the reforms on the degree of local decentralization can also be seen in Figure 2, which shows the deviation from mean degree of local decentralization before and after the reforms. The average degree of local decentralization after implementation of the reforms decreases by approximately 6 percentage points, when comparing only a year before the reforms and a year after adoption. This provides descriptive evidence of significant effects of the reforms on the degree of local decentralization at the time of implementation.

Figure 2: The Impact of the Reforms on the Degree of Local Decentralization



Notes: Based on 19 cantons and a model where the degree of local decentralization is predicted with canton effects as well as year dummies, which correspond to years from the implementation of the reforms. The effects of these dummies are plotted on the figure.

II. Data and Empirical Strategy

A. Data

To evaluate the effect of these centralization reforms on Swiss individual well-being, the empirical analysis appeals to the SHP. In 1999 the Swiss Foundation for Research in Social Sciences established the SHP, which is a yearly panel study following a random sample of households in Switzerland over time by interviewing all household members. Households are randomly selected from the telephone directory and are followed up by means of computer-assisted telephone interviews. The sample contains about $15,000$ respondents, 14–97 years of age, observed on average 6 times and for a total of $85,000$ observations. The period covered by the data is 1999–2012.

There are several advantages in using the SHP. First, it constitutes a unique database for Switzerland because it covers the 26 Swiss cantons. The samples are stratified by major region (Lake Geneva region, Mittelland, north-west Switzerland, Zurich, eastern Switzerland, central Switzerland, and Ticino), without any regional oversampling. Appendix Table A.6 shows some descriptive statistics for the 26 cantons. Second, these are panel data collected on a consistent basis over cantons, municipalities, individuals, and years. Therefore, this allows me to analyze within-person changes in well-being over time and to control for a broad range of individual characteristics (e.g., gender, age, marital status, employment status, health status, income, citizenship, and political preferences). The data also identify municipalities of residence. On average there are 279 observations per municipality and $5,290$ per canton (Appendix Table A.6).

In the SHP, subjective well-being is assessed through the following question: "In general, how satisfied are you with your life?" where respondents have 11 choices (0=not all satisfied, 10=very satisfied). The life satisfaction question is asked only over the period 2000–2012. Table 3 shows means and standard deviations of the variables from the SHP and the distribution of life satisfaction. The table shows that 15.66 percent of the respondents reported that they were very satisfied with their life [10]. Conversely, 1.86 percent answered that they were dissatisfied [0–4]. To investigate the possible mechanisms of centralization, I also use other measures of subjective well-being, such as "satisfaction with public expenses" (0–1), "feeling about political influence" (0–10), "satisfaction with health" (0–10), "satisfaction with financial situation" (0–10) and "satisfaction with democracy" (0–10). Appendix C.4. gives the exact wording and possible answers for each of these variables. Responses show that 36.5 percent of the respondents are satisfied with public expenses, 19.13 percent felt they have no political influence at all [0], whereas 15.91 percent felt they have a very strong political influence [7–10]. In addition, 20.08 percent of the respondents answered that they are completely satisfied with their health status, 16.62 percent are completely satisfied with the financial situation of their household, and 23.48 percent are very satisfied with the way in which democracy works in Switzerland [8–10].

The validity of such subjective data may be a concern. Many issues remain unresolved regarding self-reported measures of well-being (Benjamin et al. 2012, Deaton and Stone 2013, Benjamin, Heffetz, Kimball and Szembrot 2014, Benjamin, Heffetz, Kimball and Rees-Jones 2014). However, there is substantial evidence that these measures are capable of capturing accurate and meaningful information (see, among others, Easterlin (1974), Diener et al. (1985), Clark and Oswald (1994), Easterlin (1995), Clark and Oswald (1996), Diener et al. (1999), Di Tella et al. (2001), Easterlin (2001), Frey and Stutzer (2002), Di Tella et al. (2003), Blanchflower and Oswald (2004), Layard (2005),

Di Tella and MacCulloch (2006), Clark and Senik (2010)). A brief analysis also provides evidence that measures of subjective well-being from the SHP perform in the way the theory would suggest with respect to the construct being measured. For example, "life satisfaction," "satisfaction with health," and "satisfaction with financial situation" are shaped by sociodemographic factors such as age, income, health, and employment status. Conversely, "feeling about political influence" and "satisfaction with democracy" are associated with citizenship and political preferences (Appendix Table A.7). Moreover, there is evidence that respondents find these questions on subjective well-being easy to understand. They have very low nonresponse rates (less than 5 percent did not answer or selected "do not know"). Finally, consistent with previous analysis, I find clear regional patterns of life satisfaction (Dorn et al. 2007). For example, life satisfaction is higher in the German-speaking cantons than in the French- or Italian-speaking cantons. Although it is not an issue in this paper, given that I analyze within-canton within-person changes in subjective well-being, one possible explanation is that cantonal language is related to cultural patterns, which in turn influence self-reported life satisfaction.

Table 3: Descriptive Statistics. 2000-2012. Swiss Household Panel

.	Obs	Mean	SD	Min	Max
Outcomes					
Life satisfaction	84,218	8.023	1.436	0	10
$[0-4]$		1.86 %			
$[5-6]$		8.93 %			
[7]		16.02 %			
[8]		38.83 %			
[9]		18.71 %			
[10]		15.66 %			
Satisfaction with public expenses	65,079	0.365	0.481	0	1
Feeling about political influence	68,094	3.756	2.609	0	10
Satisfaction with health	84,169	7.953	1.748	0	10
Satisfaction with financial situation	84,003	7.382	1.960	0	10
Satisfaction with democracy	67,676	6.093	1.912	0	10
Individual characteristics					
Female	84,218	0.550	0.498	0	1
Age	84,218	45.186	18.037	14	97
Married	84,218	0.551	0.497	0	1
Divorced	84,218	0.079	0.270	0	1
Single	84,218	0.309	0.462	0	1
Widowed	84,218	0.046	0.210	0	1
Separated	84,218	0.014	0.119	0	1
Foreigner	84,200	0.081	0.273	0	1
Bad health	84,218	0.147	0.354	0	1
Employed	84,218	0.584	0.493	0	1
Unemployed	84,218	0.011	0.104	0	1
Retired	84,218	0.167	0.373	0	1
Student	84,218	0.143	0.350	0	1
Housewife	84,218	0.082	0.275	0	1
French	84,218	0.266	0.442	0	1
German	84,218	0.691	0.462	0	1
Italian	84,218	0.043	0.202	0	1
Left voter	73,068	0.392	0.488	0	1
Yearly total personal income	84,218	10.914	0.677	4	16

Note: Columns 1-5 provide descriptive statistics from the SHP regression sample (2000-2012).

B. Empirical Strategy

The effect of the centralization reforms can be obtained by comparing the life satisfaction of individuals in cantons that implemented a reform (treated group) with the life satisfaction of individuals in the remaining cantons (control group) before and after the policy change. The life satisfaction of individual i, living in municipality m, belonging to canton c, at year t can be defined as:

$$LS_{imct} = \alpha + \beta R_{ct} + X_{imct}\lambda + Z_{mct}\eta + \rho_c + \mu_t + \theta_i + \epsilon_{imct} \quad (1)$$

where R_{ct} is a dummy equal to 1 if the centralization reform has been implemented in canton c at date t, and X_{imct} is a vector containing additional regressors known to be predictors of life satisfaction, such as yearly total personal income, age, age squared, marital status, employment status, and health status. Year and canton fixed effects are included in the model. These fixed effects completely control for yearly influences and any fixed differences between cantons, for example, official language, degree of urbanization, culture, and political institutions. Therefore the identification strategy relies on intertemporal variations between cantons when adopting the reforms. In addition, the panel data enable the inclusion of individual fixed effects that allow me to control for individual unobservable heterogeneity, including reporting style in answering the life satisfaction question. Standard errors are clustered at the canton level.[12]

Note that satisfaction responses are observed on an ordinal scale. A natural estimator in this case would be an ordered response model, for example, ordered probit. However, ordered probit are not suitable for panel data analysis. One alternative approach is to use a linear regression model with fixed effects: Both Ferrer-i-Carbonell and Frijters (2004) and Stevenson and Wolfers (2008) point out that the choice of ordered probit or least squares makes little difference when applied to life satisfaction data. I therefore estimate ordinary least-squares (OLS) regressions in the analysis. For robustness, I also check the results using probit adjusted OLS (Van Praag and Ferrer-i-Carbonell 2006).

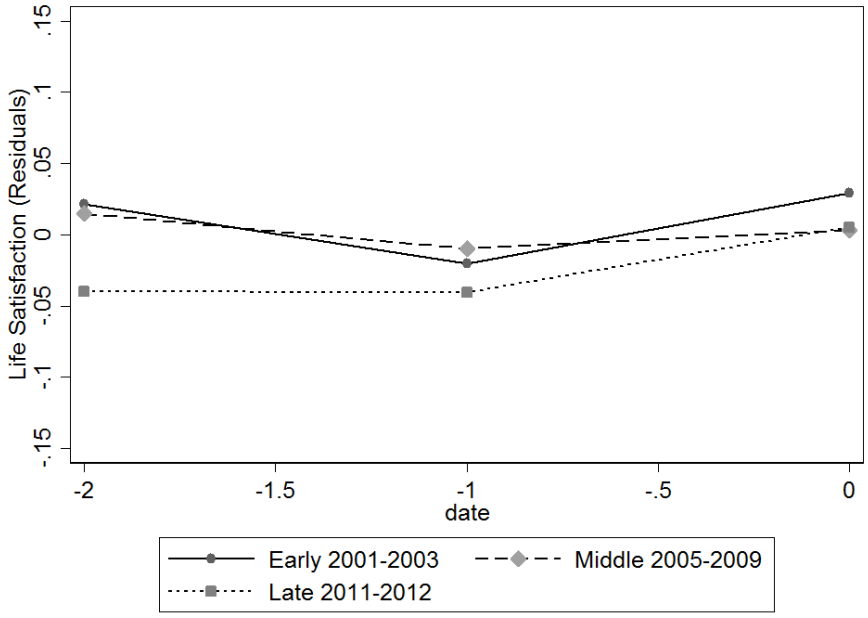
In applying the difference-in-differences strategy, it is important to consider carefully the "experiment" created by these centralization reforms. Ideally, these reforms would be independent random events that varied in timing and had no spillover effects to cantons that did not implement the reforms. In addition, the strategy requires the assumption that trends of cantonal characteristics over time are not correlated with the timing of the reform. Otherwise, I possibly capture only different trends between the control and treated groups, so that cantons that have implemented the reforms faced specific shocks different to those in other cantons. To limit this possible bias, I use time-varying municipal

[12] Clustering at the canton-year level yields similar findings (available upon request).

and cantonal controls, Z_{mct}, such as cantonal income per capita, cantonal unemployment rate, and municipality size.[13] Because a part of the effect of centralization reforms may go through local public spending, I do not control for local public spending. In most specifications, I also include canton-specific time trends in case other time-varying factors correlated with the implementation of the reforms would explain my results.

Another crucial assumption to hold for the difference-in-differences strategy is that of a common trend: that life satisfaction evolved similarly in control and treated groups up to the implementation of the reforms. To test this, I plot the trend in mean life satisfaction (Figure 3), after controlling for the same set of individual and local characteristics (yearly total personal income, age, marital status, health, employment status, cantonal income per capita, cantonal unemployment rate, municipality size, canton dummies, and year dummies). I consider three trends according to exposure to the reforms (early-, middle-, late- reforming cantons). The lines track each other well from two years prior and up to the implementation of the reforms. The means are not statistically different from each other.[14]

Figure 3: Life satisfaction Residuals. Common Trend Assumption



Notes: The values plotted are the average residuals by year up to the implementation of the reforms and treated groups (early, middle, late) from a regression of life satisfaction on yearly total personal income, age, marital status, health, employment status, cantonal income per capita, cantonal unemployment rate, municipality size, canton dummies and year dummies.

Finally, I need to verify that the control and treated groups evolved similarly over time. Appendix Table A.8 shows means of the demographic and socioeconomic variables before

[13]These variables are from the BADAC data (see Appendix C.2.).

[14]The p values for F tests of statistical differences are all above 0.10. This is 0.754, 0.825 and 0.905, respectively.

and after the reforms, in 2000 and 2012 respectively, and by whether the respondent is in the treated group (cantons that implemented the reform) or the control group (cantons that did not implement the reform). The pre–post difference for each group is computed, and the null hypothesis of no difference in the pre–post differences between the treated group and control group is tested. The p-values are reported in the final column of Appendix Table A.8. Of the 22 differences tested, only 1 is significant at a 10 percent level: municipality size. Municipality size has increased in cantons affected by the reforms, whereas municipality size has decreased in cantons not affected by the reforms. Overall, the two groups evolved sufficiently similarly for the difference-in-differences strategy to perform reasonably well.

III. Empirical Results

A. Effects on Life Satisfaction

Table 4 shows estimates of equation (1) using OLS. The effect of the centralization reforms on life satisfaction is first estimated in cross-section (column 1), without cantonal and municipal controls. I progressively add cantonal and municipal controls (column 2). I then use the panel nature of the data to explore how centralization reforms affect within-person change in life satisfaction (columns 3 and 4).

Coefficients, in columns 1 and 2, show that the relationship between "centralization reforms" and life satisfaction is significant at the 5 percent level and negative. This indicates that people report lower levels of satisfaction after introduction of the reforms. Adding municipal and cantonal controls such as income per capita, unemployment rate, and municipality size does affect the coefficient on "centralization reforms," which remains statistically significant. All the coefficients on individual and local controls attract signs that are consistent with those in the literature (for detailed results see Appendix Table A9). Moving on to include individual fixed effects, the negative relationship between "centralization reforms" and life satisfaction holds and remains significant at the 5 percent level.

The size of the estimates (column 4) indicates that people exposed to centralization saw a decrease in life satisfaction of approximately 3 percent of a standard deviation.[15] This is consistent with the findings of Frey and Stutzer (2000) and Bjornskov et al. (2008).[16] At first glance, this estimated effect may seem modest. However, the variation

[15] $0.0257 = 0.0383/1.436$.

[16] The cross-section estimates of Frey and Stutzer (2000) and Bjornskov et al. (2008) indicate that an increase in local autonomy is associated with an increase in life satisfaction of approximately 3 percent of a standard deviation (marginal effect: 0.033 in Frey and Stutzer (2000); coefficient from weighted ordered probit: 0.032 in Bjornskov et al. (2008)).

in the degree of decentralization before and after the reforms is relatively small (see Table 2). In addition, the size of the effect can be evaluated for comparison with other predictors of life satisfaction. For example, a 1-point increase in ln yearly total personal income is associated with an increase in life satisfaction of approximately 4 percent of a standard deviation. In contrast, the estimated effect of centralization reforms is 13 times lower than the coefficient of being unemployed (compared with being employed), which is associated with a decrease in life satisfaction of approximately 39 percent of a standard deviation (see Appendix Table A.9, column 4).

Table 4: The Causal Effect of Centralization Reforms on Individual Life satisfaction

	Life satisfaction			
	(1) Cross section baseline	(2) Cross section with controls	(3) Panel analysis baseline	(4) Panel analysis with controls
Centralization reforms	-0.0458**	-0.0458**	-0.0411**	-0.0383**
	(0.0204)	(0.0194)	(0.0170)	(0.0169)
Observations	54,761	54,761	84,218	84,218
R-squared	0.139	0.139	0.034	0.034
Nb of individuals	10,842	10,842	14,695	14,695
Individual controls	Yes	Yes	Yes	Yes
Municipal and cantonal controls	No	Yes	No	Yes
Individual fixed effects	No	No	Yes	Yes
Canton fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Canton specific time trends	Yes	Yes	Yes	Yes

Notes: Standard errors are in parentheses, clustered by cantons. Individual controls in columns 1 and 2 include ln income, age, age squared, gender, marital status, employment status, health status, educational level, religion, first language, citizenship and political preference. In columns 3 and 4, individual controls include ln income, age, age squared, marital status, employment status and health status. Municipal controls include municipality size and cantonal controls include cantonal GDP per capita and the cantonal unemployment rate. *,**, *** significant at the 10%, 5% and 1% respectively.

B. Robustness Checks

The baseline results (Table 4) show a small but significant negative causal impact of centralization on life satisfaction. It is important to explore further the identification assumptions beneath these first results. As robustness checks, I run two falsification tests and estimate two alternative specifications.

First, I consider a placebo experiment by assuming that the centralization reforms were implemented three years earlier. Column 1 of Table 5 shows the results. Reassuringly, the coefficient on "centralization reforms" shows that there is no effect on life satisfaction, indicating that unobservable trends within cantons are not driving the results. I check as a second falsification test whether the centralization reforms affected the life satisfaction of respondents in cantons that did not implement the reforms (control group). I do not find significant spillover effect (column 2 of Table 5).

As the first alternative specification, the equation presented in column 4 of Table 4

is re-estimated, but each respondent is assigned to the canton in which they lived before implementation of the reforms (in 2000).[17] As such, I can make sure that the results are not driven by endogenous residential sorting. Column 3 of Table 5 shows the results of the estimation. The coefficient on "centralization reforms" remains negative and statistically significant, but is numerically lower than in the baseline (Table 4). Thus, restricting the sample to people for whom the canton of residence in 2000 is available may result in an upward bias because some of the people who were most affected by the centralization reforms are excluded from the sample. Second, I re-estimate the centralization effect using probit adjusted OLS. The coefficient remains negative and statistically significant (column 4 of Table 5).

Table 5: Robustness Checks: The Causal Effect of Centralization Reforms on Individual Life satisfaction

	Life satisfaction			
	(1) Three years prior	(2) Spillover effect	(3) Endogeneous sorting	(4) Probit adjusted OLS
Centralization reforms	0.00555	-11.61	-0.0375*	-0.0364*
	(0.0258)	(7.029)	(0.0214)	(0.0201)
Observations	84,218	84,218	52,470	84,218
R-squared	0.034	0.034	0.037	0.028
Nb of individuals	14,695	14,695	7,594	14,695
Individual controls	Yes	Yes	Yes	Yes
Municipal and cantonal controls	Yes	Yes	Yes	Yes
Individual fixed effects	Yes	Yes	Yes	Yes
Canton fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Canton specific time trends	Yes	Yes	Yes	Yes

Notes: Standard errors are in parentheses, clustered by cantons. Individual controls include ln income, age, age squared, marital status, employment status and health status. Municipal controls include municipality size and cantonal controls include cantonal GDP per capita and the cantonal unemployment rate. *,**, *** significant at the 10%, 5% and 1% respectively.

C. Dynamic Analysis

Next, I investigate the effect of the centralization reforms on individuals' life satisfaction at yearly intervals before and after the reforms come into effect (Table 6). The econometric model is now as follows:

$$LS_{imct} = \alpha + \beta_1 R_{-1,ct} + +\beta_2 R_{0,ct} + +\beta_3 R_{1,2,ct} + X_{imct}\lambda + Z_{mct}\eta + \rho_c + \mu_t + \theta_i + \epsilon_{imct} \quad (2)$$

where $R_{-1,ct}$ is an indicator for centralization reforms and set to 1 from one year prior to

[17]Key results were also estimated when the sample is restricted to cantons that have at least 200 observations for statistical reliability (Appenzell Innerrhoden, Jura, and Uri are dropped). This has little effect on the estimates.

coming to effect. $R_{1,2,ct}$ is an indicator for the period one through two years following the reforms. All estimates include canton and year dummies and the usual set of covariates.

This design allows the short-term impacts to be disentangled from the medium-term impacts of centralization reforms. It is possible that, because of implementation costs or economies of scales, the effect of centralization reforms on individuals' life satisfaction varies over time. In addition, this specification allows additional placebo tests to be performed to determine whether "fake" dates of reforms predict the change in life satisfaction as well as the true ones.

Consistent with the common trend assumption (see Section II.), centralization should not have any effect prior to implementation. Columns 1 and 2 of Table 6 show the estimates of equation (2) without and with local controls, respectively. As expected, people are not significantly affected by the centralization reforms in the year prior to implementation. This implies that people did not fully anticipate the effects of the reforms. It also confirms that the timing of the centralization reforms agree with the timing predicted by the data and further support the credibility of the identification strategy. In addition, people are negatively affected afterward, consistent with the baseline findings (Table 4). The estimates are statistically significant for the year of implementation and for the period one through two years after, indicating that people are less satisfied with their life when the reforms are adopted.

I next experiment with longer lags, up to three years after implementation of the reforms (column 3 of Table 6). Interestingly, the estimate for the period after three years following the reforms is smaller and not significant. To ensure that these results are not driven by individuals who are in the panel for only a brief time, I redo the calculations (column 4 of Table 6) on a smaller balanced panel. This produces similar results. Such estimates indicate that the negative impacts of the centralization reforms on life satisfaction are not persistent over time.

This does not mean that there is no effect of centralization reforms in the long run. In particular, it must be borne in mind that there is a tradeoff in using life satisfaction. This is an evaluative measure based on how people experience life, and therefore it may suffer from biases related to this evaluation process. In particular, many writings in the psychology literature highlight the ability of people to return quickly to a baseline level of well-being despite the fact that some factor continues to operate. Thus, it may be that the centralization reforms are unpopular in the short term, but because of a quick adjustment ("the hedonic treadmill concept") or a change in aspirations ("the aspiration

treadmill concept")[18] centralization reforms appear to have only small effects on life satisfaction in the long run. Some scholars such as Stutzer (2004), Layard (2005), Di Tella and MacCulloch (2005), and Clark et al. (2008) have considered the economic implications of this phenomenon of adaptation. In particular, Kahneman and Sugden (2005) argue that it is important to take into account this bias in introducing subjective well-being to policy making. Hence, the results may indicate that people are negatively affected by centralization reforms but that adaptation exists: The negative consequences of centralization reforms on life satisfaction eventually wear off after three years.[19]

Table 6: The Dynamic Effects of Centralization Reforms on Individual Life satisfaction

	Life satisfaction			
	(1) Baseline	(2) With controls	(3) More lags	(4) Balanced panel
Reform: 1 year prior	-0.0113	-0.0113	-0.0118	-0.0146
	(0.0125)	(0.0125)	(0.0134)	(0.0161)
Reform: year of implementation	-0.0347**	-0.0347**	-0.0353**	-0.0352**
	(0.0152)	(0.0156)	(0.0155)	(0.0164)
Reform: 1-2 years after	-0.0369**	-0.0372**	-0.0379**	-0.0285*
	(0.0134)	(0.0138)	(0.0158)	(0.0164)
Reform: 3 years after			-0.00492	-0.0127
			(0.0179)	(0.0189)
Observations	84,218	84,218	84,218	76,534
R-squared	0.033	0.033	0.033	0.033
Nb of individuals	14,695	14,695	14,695	10,556
Individual controls	Yes	Yes	Yes	Yes
Municipal and cantonal controls	No	Yes	Yes	Yes
Individual fixed effects	Yes	Yes	Yes	Yes
Canton fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes

Notes: Standard errors are in parentheses, clustered by cantons. Individual controls include ln income, age, age squared, marital status, employment status, and health status. Municipal controls include municipality size and cantonal controls include cantonal GDP per capita and the cantonal unemployment rate. *,**, *** significant at the 10%, 5% and 1% respectively.

Overall, these results from the dynamic analysis indicate two clear effects: centralization reforms decrease life satisfaction of approximately 3 percent of a standard deviation for this sample. However, the negative impact decreases over time and is not significant after three years.

[18]The hedonic treadmill, also known as hedonic adaptation, is the observed tendency of people to return quickly to a relatively stable level of happiness despite major positive or negative events or life changes (e.g., Brickman and Campbell (1971), Brickman et al. (1978), Diener and Fujita (2005), Diener et al. (2006), Clark et al. (2008)). The aspiration treadmill implies that happy people are accustomed to a pleasant life. Hence, happy people have higher aspirations (e.g., Kahneman and Krueger (2006)).

[19]This is commong findings in the happiness literature. Among others, Brickman et al. (1978) show evidence of adaptation to income looking at lottery winners. Clark et al. (2008) suggest broadly complete adaptation to marriage and divorce. Some work has also considered adaptation to disability. Oswald and Powdthavee (2008)'s results reveal that about one-third to one-half of th negative impact of disability on well-being dissipates over time.

D. How Does Centralization Affect Individual Well-being? Some Possible Channels

These findings raise questions about the channels via which centralization reforms affect life satisfaction. One potential transmission channel is based on the fact that individuals are less satisfied with public spending because of implementation costs or because public spending is less in accordance with their needs (Tiebout 1956, Oates 1972). The magnitude of the effect of centralization reforms would depend on whether individuals benefit from local public spending: The magnitude is likely to be higher for people with bad health status, people with children attending school, and people receiving unemployment benefits and social welfare payments. Because of this, satisfaction with public spending, health satisfaction, and financial satisfaction may be expected to decrease.

However, there may be further explanations. For example, in addition to the government performance explanation, centralization reforms may make individuals less satisfied because they diminish their influence over the formulation of local policies. "People not only care about outcomes; they also value the procedures that lead to the outcomes" (Frey et al. 2004). The feeling of being involved and having political influence as well as identity and self-determination can bring its share of satisfaction, particularly when combined with direct democratic instruments. With centralization reforms, individuals may feel restricted and tend to be less interested in political life. The link between political participation and happiness has been the subject of many empirical studies (Frey and Stutzer 2000, 2002, 2005, Stutzer and Frey 2006, Dolan et al. 2008, Frey et al. 2008, Inglehart 2009). It is possible to test for this hypothesis by using alternative subjective outcomes such as "feeling about political influence," "interest in politics," and "satisfaction with democracy." Moreover, the effect of centralization reforms would depend on the electoral status. Individuals who have the right to vote and to participate in political decision making should derive more satisfaction from political participation and thus should be more affected by the centralization reforms. Note that this "procedural" channel may be related to a "political match" explanation. It may be that municipal governments are controlled by parties close to people's preferred political standing but that centralization reforms have transferred political, financial, and administrative powers to cantonal governments that are controlled by parties further away.

D.1. Effects on Other Subjective Outcomes

To test for these underlying mechanisms, I examine the effects of centralization reforms by using alternative measures of satisfaction. Life satisfaction can be considered as being composed of people's satisfaction with various life domains such as health, fi-

nancial situation, and political life. The SHP provides a range of satisfaction measures with such domains on a 0–10 scale (see Appendix C.4.). I use these satisfaction measures as outcome variables (Table 7) to understand which components of well-being drive the relationship between life satisfaction and centralization reforms, though of course there may be drivers of well-being not covered by these satisfaction questions.

Column 1 of Table 7 shows the effect of the reforms on health satisfaction. The estimate is not statistically significant. The second specification tests the effect of the reforms on financial situation in the household. There is no clear relationship between this variable and the centralization reforms.[20] In the third specification, I test for the effect on satisfaction with public expenses. Interestingly, the effect is positive and significant at the 11 percent level. Therefore, these results indicate that the centralization reforms have not affected negatively people's satisfaction with local policies.

Table 7: The Causal Effect of Centralization Reforms on Other Subjective Outcomes

	(1) Health Satisfaction	(2) Financial Satisfaction	(3) Satisfaction with public expenses	(4) Feeling about political influence	(5) Interest in politics	(6) Satisfaction with democracy
Centralization reforms	-0.0171	-0.0225	0.0110	-0.215***	-0.137**	0.0225
	(0.0159)	(0.0336)	(0.00673)	(0.0794)	(0.0534)	(0.0499)
Observations	84,215	84,052	65,114	82,499	83,176	67,711
R-squared	0.155	0.024	0.005	0.018	0.018	0.008
Nb of individuals	14,701	14,681	13,720	13,989	14,407	13,899
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes
Municipal and cantonal controls	Yes	Yes	Yes	Yes	Yes	Yes
Individual fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Canton fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Canton specific time trends	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors are in parentheses, clustered by cantons. Individual controls include log income, age, age squared, marital status, employment status and health status. Municipal controls include municipality size and cantonal controls include cantonal GDP per capita and the cantonal unemployment rate. Specifications (4), (5), and (6) are OLS regressions in which "centralization reforms" is interacted with electoral status. The regressions also include as controls the uninteracted variables: "centralization reforms" and a variable equal to 1 if respondent is "on the electoral register". Hence, I only report the effect of centralization reforms for people who are on the electoral register.

This leaves the "procedural" explanation as the strongest candidate for the main results: Centralization reforms have decreased people's life satisfaction because they diminish people's influence over the formulation of local policies but not their satisfaction with local policies *per se*. In specification (4), I look at the effect on people's feeling about political influence. This time, I do find that centralization reforms have a substantial negative effect on feeling about political influence.[21] People suffer from a lower ability to influence political decisions after introduction of the reforms. I verify this intuition

[20]Note that the reforms needed to be financially neutral. However, the reforms may have benefited certain municipalities and disadvantaged others. Here I focus on the average effect.

[21]I consider only the effect for people who are on the electoral register.

in specifications (5) and (6) by using two alternative indicators: interest in politics and satisfaction with democracy. The effect of centralization reforms on interest in politics is negative and statistically significant at the 5 percent level. However, note that the effect on satisfaction with democracy is not significant. It may be that people are not significantly dissatisfied with direct democracy but are less satisfied with the degree of decentralization.

If centralization affects life satisfaction, it may be expected that one main transmission channel would be via satisfaction with local policies. This does not seem to be the case—at least in the short term. However, this does not mean that there is no economic effect at all. Here, the effect of the reforms on satisfaction with public spending is slightly positive. Moreover, the remainder of the effect might be delayed or biased downward by preexisting cooperation at the canton level. However, it seems that the observed negative effect of centralization reforms on life satisfaction is driven by a procedural effect, that is, lower satisfaction with the political decision-making process itself.

D.2. Interaction Effects

Does the effect of centralization reforms on life satisfaction work through a range of sociodemographic subgroups? Table 8 shows estimates where the variable "centralization reforms" is interacted with a set of sociodemographic and political dummies. Remarkably, there is no significant difference between gender, employment status, and income. In all cases, the coefficients on centralization reforms are negative for each sociodemographic subgroup, and the hypothesis that the effect is not the same across groups can be rejected at the 10 percent level (except for students). This is consistent with previous findings that show no detrimental effect on satisfaction with financial situation or satisfaction with public expenses. However, note that the coefficient on students is significant at the 10 percent level. It may be that satisfaction at school has been affected, or it may be that young people are plausibly more sensitive to such reforms that affect interest in politics and propensity to be politically active (see Appendix Table A7).[22]

On a related issue, the question arises: Are people who are targeted by the reforms more affected? I explore this for subgroups defined by health status, presence of children in the household, and electoral status. Interestingly, the results show that there is no significant difference for people in bad health and for people with children under 18 years of age. These findings confirm that the effect of centralization reforms does not originate from lower satisfaction with health or local public expenses. In addition, this is consistent with what would be expected if satisfaction with public expenses was partly determined

[22] According to Appendix Table A.7, students are more interested in politics and have a higher sense of being involved in political life.

by the people who benefit from them. In contrast, if centralization reforms reduce people's feeling of having political influence, a stronger effect would be expected for those who are on the electoral register. Fortunately, the SHP asks respondents about their electoral status. Thus, specification (9) (Table 8) compares the effect of centralization reforms for those who have political rights with those who do not.[23] The regression shows that the effect of centralization reforms is significantly stronger for those who are on the electoral register. This is consistent with the previous findings that report a significant effect on feeling about political influence and interest in politics.

I also test whether the effect of centralization reforms on life satisfaction varies by cultural background, degree of direct democracy, municipality size, and political preferences. A general assumption may be that people who are more prone to centralization would be less affected by the reforms. However, the findings indicate that the effect is almost identical for people with left-orientation and for those with right-orientation. Similarly, the estimates show that the perception of the centralization reforms does not vary with individual cultural background. Because there are three language regions in Switzerland, here I consider three dichotomous variables: French-, Italian-, and German-speaking individuals. Specification (14) also shows that the effects of centralization reforms does not differ with the degree of direct democracy. Interestingly, however, the effect of centralization reforms is significantly more negative for individuals living in small municipalities (bottom 20 percent). Again this is consistent with the idea that the centralization reforms have affected people's feeling of having political influence and in particular for individuals that have relatively high political influence with regard to their municipality size.

Another test involves comparing the effect of the reforms on well-being according to how much the reforms have been debated. It may be suspected that the reforms adopted with a low margin were less likely to have been expected and approved, even if they were highly debated, and therefore should show a drop in well-being after their approval—whereas the reforms approved with a high margin were adopted by "consensus," and therefore the approval should have generated a lower negative impact on the well-being level. Specifications (16) and (17) show the estimates. Interestingly, I find that centralization reforms approved with a low margin significantly decrease people's life satisfaction, whereas the total effect of reforms approved with a high margin is close to zero.

Arguably, the results of neither Table 7 nor Table 8 rule out the possibility of a "political match" effect. It may be that people are less satisfied after introduction of the reforms because the municipal authority is not the same politically as the cantonal majority to which they belong. Specification (18) adds an interaction term between

[23]On average, 84 percent of the respondents are on the electoral register in my sample.

centralization reforms and a dummy variable equal to 1 if the municipality and the canton of residence have the same political majority. The estimate for this interaction term is not significant. Therefore, this finding provides evidence that the results are not driven by changes in political majority. In addition, specifications (19) and (20) test whether the effect of centralization depends on whether the cantonal and municipal governments are controlled by parties closer to and further away from people's preferred political standing. I add an interaction term between centralization reforms and a dummy variable that is equal to 1 if the canton (19) or the municipality (20) has a political majority close to respondents' political preferences. Similarly, the estimates show that the perception of the centralization reforms does not vary with closely matched political preferences.

Finally, I test whether early-, middle-, and late-reforming cantons were differently affected by the centralization reforms. It may be that respondents living in early-reforming cantons were more sensitive to the reforms because they were the first to trial these institutional changes. Specifications (21), (22), and (23) report the coefficients. I find no significant difference between the three groups.

Table 8: Centralization Reforms, Interaction effects, SHP

Dependent variable: Life Satisfaction	Centralization Reforms				
	Coeff.	S.E.	R-squared	N. Obs	N. id
(1) Women	-0.0378	(0.0303)	0.034	84,218	14,695
(2) Bottom (25%) income	-0.0367	(0.0330)	0.034	84,218	14,695
(3) Top (25%) income	0.0334	(0.0374)	0.034	84,218	14,695
(4) Retired	-0.0879	(0.0515)	0.034	84,218	14,695
(5) Unemployed	0.156	(0.152)	0.034	84,218	14,695
(6) Student	-0.0754*	(0.0429)	0.034	84,218	14,695
(7) People in bad health	-0.0500	(0.0404)	0.034	84,218	14,695
(8) People with children (under 18)	0.0306	(0.0261)	0.034	84,218	14,695
(9) On electoral register	-0.0558*	(0.0320)	0.035	84,218	14,695
(10) Political preference: left	0.0104	(0.0312)	0.034	73,068	13,548
(11) French	-0.0599	(0.0476)	0.034	84,218	14,695
(12) German	0.0284	(0.0450)	0.034	84,218	14,695
(13) Italian	0.0698	(0.0801)	0.034	84,218	14,695
(14) Degree of direct democracy	0.0174	(0.0170)	0.034	84,218	14,695
(15) Bottom (20%) municipality size	-0.0397**	(0.0176)	0.034	84,218	14,695
(16) Reform approved with a low margin	-0.0641*	(0.0337)	0.034	84,218	14,695
(17) Reform approved with a high margin	0.0673*	(0.0307)	0.034	84,218	14,695
(18) Same political majority between canton and municipality	-0.0221	(0.0238)	0.033	70,571	11,817
(19) Canton political power close to people's preferences	-0.0123	(0.0529)	0.030	65,434	13,736
(20) Municipal political power close to people's preferences	-0.0923	(0.0939)	0.026	41,329	9,949
(21) Early reforming cantons	0.0487	(0.0301)	0.034	84,218	14,695
(22) Middle reforming cantons	-0.0201	(0.0326)	0.034	84,218	14,695
(23) Late reforming cantons	-0.0298	(0.0351)	0.034	84,218	14,695

Notes: Standard errors are in parentheses, clustered by cantons. Each specification is a single OLS regression in which centralisation reforms is interacted with a set of dummies. All regressions include as controls the uninteracted set of dummy variables as well as the same controls as the baseline regression. Individual controls include ln income, age, age squared, marital status, employment status and health. Municipal controls include municipality size and cantonal controls include cantonal income per capita and cantonal unemployment rate. In specification (16) and (17), cantons where the reforms have been approved with a low margin are Neuchatel, Vaud and Zug and cantons where the reforms have been approved with a high margin are Schwytz, Bern, Basel-Landschaft, Jura, Aargau, Thurgau, Appenzell Ausser Rhoden, Lucerne, Schaffhausen, Uri, Basel-Stadt, Appenzell Inner Rhoden and Glarus.

IV. Discussions

There has been a growing literature in subjective well-being that has attempted to evaluate how changes in life circumstances may affect changes in well-being. Here, I explore the importance of a change in municipal autonomy. The influence of local institutions on life satisfaction has until now been analyzed in cross-section. Here, I examine how centralization reforms affect within-person change in life satisfaction over time. I demonstrate using SHP data that the degree of decentralization does matter and that a decrease in municipal autonomy is associated with a decrease in life satisfaction of approximately 3 percent of a standard deviation. I show that this negative effect on life satisfaction is not persistent over time and disappears after three years—indicating the capacity of people to adjust to such institutional changes. Moreover, I find that this negative effect is driven by voters who report a feeling of losing political influence and being less interested in politics. In contrast, satisfaction with public spending remains the same or even slightly increases during the period of investigation.

This research has a number of implications. First, there are broad theoretical and empirical implications for economic and well-being research. Economic variables such as federal or local governments' performance, level of public spending, and GDP per capita are often viewed as proxies for well-being. Under the assumption that these economic variables are main predictors of individual well-being, it is possible to use them to assess the effect of centralization on well-being. However, empirical evidence has shown that economic factors are statistically significantly but weakly correlated with life satisfaction. Other factors such as trust, social relationship, and civic participation matter. This paper suggests that, to assess the overall effects of centralization, more than government performance must be looked at. Local identity and a sense of self-determination may act in part as an additional component that explains why centralization reforms negatively affect individual life satisfaction.

Second, this paper adds to the literature that uses life satisfaction to evaluate the effects of policy changes. Measures of subjective well-being are often used to identify different determinants of quality of life (e.g., financial situation, health, work, family, social relationship, and civic engagement). However, for policy makers, the goal is to understand how these different determinants can be modulated such that they are more conducive for the cultivation of people's well-being. This paper suggests a way to use life satisfaction data to evaluate how policy reforms can change people's well-being. Nonetheless, some issues remain unresolved. For example, it must be borne in mind that life satisfaction is an evaluative measure and therefore has some drawbacks.

This study has several limitations. One concern is that the results discussed so far

may depend on an event effect and not on the centralization reforms themselves. People tend to have a preference for the current state of affairs. Thus, when reporting life satisfaction, the current baseline of centralization (or status quo) is taken as a reference point, and any change from that baseline is perceived as a loss. Experimental evidence for the detection of status quo bias and resistance to change has often used reversal tests. Let us consider a change in the degree of centralization in the opposite direction (increase in local autonomy). If this also has negative effects on life satisfaction, then there is reason to suspect that individuals suffer from status quo bias. Although it is not possible to test for this hypothesis using the same quasi-natural experiment, it can be estimated whether more risk-averse people (who tend to be more reluctant to changes) are more affected by centralization reforms. The SHP provides information on risk attitude on a 0–10 scale, from "avoid taking risks" to "fully prepared to take risks." I define risk-averse people as people answering from 0 to 5. Appendix Table A.10 reports the results: I find that being risk averse does not lead to a statistically significant higher drop in life satisfaction after implementation of the reforms.

A second limitation of the study is that the use of subjective well-being as a measure of individual well-being may be open to objection. One concern may be the possibility that the results would be driven by respondents' changes in how they define their satisfaction, rather than true changes in their underlying satisfaction. They may use different standards of evaluation about what counts as being satisfied over time. One possible objection is that in this data there is a two years lasting negative effect from implementation of the centralization reforms; this seems inconsistent with the idea that respondents rescale their definition of life satisfaction at least in the short term. Alternatively, redoing the main results by using a measure of optimism and a measure of anxiety taken from the SHP also shows negative effects of the centralization reforms on individuals' optimism and positive effects on individuals' anxiety. The effect on individuals' optimism is significant at the 12 percent level (see Appendix Table A.10).

On a related issue, it is possible to test whether individuals change their behavior according to the change in life satisfaction. I look at whether voter turnout has increased after implementation of the reforms. I use administrative data from the Swiss Federal Statistics that provide information on voter participation at federal and cantonal elections between 1999 and 2011 (Appendix Tables A.11 and A.12). The figures show that voter participation in the federal elections at the canton level before and after the reforms shifted downward by 3 percentage points in cantons that implemented a centralization reform. Although it would be an overstatement to say that the centralization reforms are in part responsible for the decrease in voter participation at the federal level in the last decade in Switzerland, they have certainly played a role in diminishing people's interest

in politics. Moreover, it is worth noting that voter participation in cantonal elections has not significantly increased since implementation of the reforms.

V. Conclusion

This paper analyzes whether people care about the degree of decentralization. I take advantage of a wave of reforms taking place in Switzerland, where 19 out of the 26 cantons have changed the distribution of tasks between cantons and municipalities during the last decade. I find that people experience a significant fall in life satisfaction immediately after introduction of the reforms, although the effect vanishes over time. By looking at alternative outcome measures and decomposing by subgroups, I find that the negative effect can be attributed to a feeling of losing political influence. This indicates that participation and self-determination play a key role in determining the perception of centralization reforms. These findings have implications that are valid for the subjective well-being literature and the political economy literature.

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VI. Appendix

A. Detailed Description of Selected Reforms

Table A.1: Reform, Neuchatel (*Réforme de répartition des taches et des charges entre l'Etat et les communes*- 2005).

Centralization/ Decentralization	Modified Law	Law (RS)	Public Policy	Domain	Who pays after the reform?	Who implements?	Who decides?
Centralization	Water and environment	731.101/731.11	Environemnt	Water	Canton	Canton	Canton
Centralization	Public Welfare (AVS-AI)	820.30	Social	AVS-AI	Canton	Canton/ Communes	Canton
Centralization	Public welfare	813.10	Social	Labor market	Canton/Communes	Canton/Communes	Canton/Communes
Centralization	Public Welfare (AVS-AI)	820.10	Social	AVS-AI	Canton	Canton	Canton
Centralization	School organization	410.10	Education	Manuals and education spending	Canton	Canton	Canton
Centralization	Training	414.4	Education	Profesional training	Canton	Canton	Canton
Centralization	School organization	410.10	Education	School computers	Canton	Canton	Canton
Centralization	Secondary schools	410.131	Education	Secondary Teaching	Canton	Canton	Canton
Centralization	School building	419.12	Education	School building	Canton	Canton	Canton
Decentralization	School organization	410.10	Education	School furniture	Communes	Communes	Communes
Centralization	Scholarships	418.1	Education	Scholarships	Canton	Canton	Canton
Centralization	Hospitals and home care	802.10 / 832.30	Health	Hospital	Canton	Canton	Canton
Centralization	Foods	806	Health	Food control	Canton	Canton (communes)	Canton
Centralization	Home care	802.10	Social	Home care	Canton	Canton	Canton
Centralization	Elderly homes	832.30	Social	Elderly homes	Canton	Canton	Canton
Decentralization	Social action	831.0	Social	Social Action	Canton/ Communes	Canton/Communes	Canton/Communes
Centralization	Disability	820.22	Social	Disability AI	Canton	Canton	Canton
Centralization	Young homes	832.10	Social	Young Homes	Canton	Canton	Canton
Centralization	Public transports	765.1	Transports	Urban transports	Canton/Communes	Canton/Communes	Canton/Communes
Decentralization	Public transports	765.1	Transports	Regional transports	Canton/Communes	Canton/Communes	Canton/Communes

Source:Jacot-Descombes (2013)

Table A.2: Reform, Aargau (Aufgabenteilung Kanton Gemeinde - 2006).

Centralization/ Decentralization	Modified Law	Law (RS)	Public Policy	Domain	Who pays after the reform?	Who implements?	Who decides?
Centralization	Administration	210.121.art 1	Administration	Adoption	Canton	Canton	Canton
Centralization	Administration	253.111 art 56	Administration	Preventive detention	Canton	Canton	Canton
Centralization	Administration	123.121	Administration	Passeports	Canton	Canton	Canton
Centralization	Administration	210.100	Administration	Monitoring of Mun Foundations	Canton	Canton	Canton
Centralization	Administration	171.100	Administration	Mun. benchmarking	Canton/Communes	Communes	Communes
Decentralization	Administration	171.100	Administration	NPM	Communes	Communes	Communes
Centralization	Administration	251.100	Administration	Criminal measures	Canton	Canton	Canton
Decentralization	Administration	171.100	Administration	Oath of elected officials	Communes	Communes	Communes
Centralization	Agriculture	931.1	Agriculture	ranger	Canton	Tiers	Canton
Centralization	Agriculture	931.1	Agriculture	Forests	Canton	Tiers	Canton
Centralization	Planning	723.11	Planning	Public work	Canton	Canton	Canton
Centralization	Social	811.400 / 832.30	Social	ORP	Canton	Canton/Communes	Canton
Decentralization	Economy	950.2	Economy	Open hours shops	Communes	Communes	Communes
Decentralization	Finances	651.1	Finances	Succession rights	.	.	.
Decentralization	Finances	251.2	Finances	Fines	Canton/Communes	Communes	Communes
Centralization	School	411.210	School	Insurance	Canton	Canton	Canton
Centralization	School	411.210	School	Teachers' income	Canton	Communes	Canton
Centralization	School	411.521	School	Musical schools	Canton/Communes	Communes	Canton
Centralization	School	411.250	School	Direction	Canton/Communes	Communes	Canton
Centralization	School	401.100	School	School orientation	Canton	Canton	Canton
Centralization	School	401.100	School	Psy. services	Canton	Canton	Canton
Centralization	School	401.100	School	10th year	Canton	Canton	Canton
Centralization	School	401.100	School	Kindergarten	Cantons/Communes	Communes	Canton
Decentralization	School	401.100	School	School material	Communes	Communes	Canton/Communes
Decentralization	School	401.100	School	School building	Canton/Communes	Communes	Canton/Communes
Decentralization	School	401.100	School	School medecine	Communes	Tiers	Canton/Communes
Decentralization	School	401.100	School	School building	Communes	Communes	Canton/Communes
Decentralization	School	401.100	School	School transports	Communes	Communes	Communes
Centralization	Health	301.100	Health	Prevention	Canton	Canton	Canton
Centralization	Health	301.100	Health	Prevention	Canton	Canton	Canton
Decentralization	Health	393.300	Health	Dog taxes	Canton/Communes	Communes	Canton
Decentralization	Health	301.100	Health	Family	Communes	Communes	Communes
Centralization	Health	360.310	Health	Food	Canton	Canton	Canton
Decentralization	Safety	531.210	Safety	Road circulation	Communes	Communes	Canton/Communes
Decentralization	Safety	531.2	Safety	local police	Communes	Canton/Communes	Canton/Communes
Decentralization	Social	693.100	Social	Homes for elderly	Communes	Canton	Communes
Decentralization	Social	693.100	Social	Homes for elderly	Communes	Communes	Communes
Centralization	Social	831.100	Social	AVS	Canton	Canton/Communes	Canton
Decentralization	Social	831.100	Social	AVS/AI	Canton	Canton/Communes	Canton
Centralization	Social	851.200	Social	Health insurance	Canton/Communes	Canton/Communes	Canton/Communes
Decentralization	Social	851.200	Social	Social aid	Canton/Communes	Canton/Communes	Canton/Communes
Centralization	Social	831.200	Social	AVS/AI	Canton	Canton/Communes	Canton
Decentralization	Social	991.100	Transports	Road signalisation	Communes	Canton	Communes

Source:Jacot-Descombes (2013)

Table A.3: Reform, Jura (*Répartition des taches entre l'Etat et les communes* - 2005).

Centralization/ Decentralization	Modified Law	Law (RS)	Public Policy	Domain	Who pays after the reform?	Who implements?	Who decides?
Centralization	Administration	312.5	Administration	Help victims	Canton	Canton	Canton
Centralization	Planning	701.1	Planning	Building police	Canton/Communes	Canton/Communes	Canton/Communes
Centralization	Planning	701.1	Planning	Building permission	Canton/Communes	Canton/Communes	Canton/Communes
Decentralization	Culture	445.1	Culture	Building	Canton	Canton	Canton/Communes
Centralization	Finances	641.711	Finances	Tax foreigners	Canton/Communes	Canton/Communes	Canton/Communes
Centralization	Health	651	Health	Health system	Canton	Canton	Canton
Centralization	Health	822.31	Health	Home-working	Canton/Communes	Canton/Communes	Canton/Communes
Centralization	Safety	811.111	Safety	Fire police	Canton/Communes	Communes	Canton
Centralization	Safety	557.1	Safety	weapons	Canton	Canton	Canton
Centralization	Safety	875.1	Safety	Fire men	Canton / Communes	Canton/Communes	Canton/Communes

Source:Jacot-Descombes (2013)

Table A.4: Reform, Luzern (*Finanzreform* - 2008).

Centralization/ Decentralization	Modified Law	Law (RS)	Public Policy	Domain	Who pays after the reform?	Who implements?	Who decides?
Centralization	School	400a	School	Obligatory schools	Canton/Communes	Canton/Communes	Canton
Centralization	School	400	School	Professional schools	Canton	Canton	Canton
Decentralization	Social	892	Social	Social Assistance	Communes	Communes	Communes
Centralization	Transports	775	Transports	Public transports	Canton/Communes	Tiers	Canton/Communes

Source:Jacot-Descombes (2013)

Table A.5: Reform, Schwyz (*Finanzausgleich* - 2001).

Centralization/ Decentralization	Modified Law	Law (RS)	Public Policy	Domain	Who pays after the reform?	Who implements?	Who decides?
Centralization	Agrilculture	154.1	Agriculture	Prevention	Canton	Canton	Canton
Centralization	Agriculture	154.1	Agriculture	Milk	Canton	Canton	Canton
Centralization	Social	154.1	Social	Finance	Canton	Canton	Canton
Decentralization	Culture	154.1	Culture	Library	Communes	Communes	Communes
Centralization	School	154.1	School	Professional training	Canton	Canton	Canton
Centralization	School	154.1	School	Scholarships	Canton	Canton	Canton
Centralization	Social	154.1	Social	Family allowance in agriculture	Canton	Canton	Canton

Source:Jacot-Descombes (2013)

B. Appendix Tables

Table A.6: Descriptive Statistics: Cantons, SHP

Cantons	No. of Municipalities 2012	No. of Municipalities (Sample - 2012)	No. of Obs. Per Canton (Sample)	Avg. Obs. Per Municipality (Sample)
Zurich	171	135	14,464	743
Bern	382	167	10,556	165
Luzern	87	58	4,546	211
Uri	20	7	230	49
Schwyz	30	23	1,423	75
Obwalden	7	6	448	78
Nidwalden	11	9	414	46
Glarus	3	4	439	28
Zug	11	9	984	129
Fribourg	165	65	3,222	188
Solothurn	120	52	2,959	84
Basel-Stadt	3	3	1,689	795
Basel-Landschaft	76	51	3,006	117
Schaffhausen	27	12	768	159
Appenzell Ausserhoden	20	11	681	84
Appenzell Innerrhoden	6	3	95	37
St. Gallen	85	71	4,644	184
Graubunden	176	48	1,715	49
Aargau	219	129	7,436	67
Thurgau	80	50	1,919	59
Ticino	157	70	3,101	57
Vaud	326	136	8,311	225
Valais	141	51	2,849	104
Neuchatel	53	38	4,465	367
Geneva	45	30	3,670	413
Jura	64	12	184	12
Total	2,485	1,250	84,218	279

Notes: Columns 1 and 2 show respectively the number of municipalities per canton in 2012 and the number of municipalities for which data is available (sample: 2012). Columns 3 and 4 present the average number of observations per canton and per municipalities in my sample.

Table A.7: Predictors of Satisfaction by Domains. SHP

	(1) Health satisfaction	(2) Satisfaction with financial situation	(3) Satisfaction with public expenses	(4) Feeling about political influence	(5) Interest in politics	Satisfaction with democracy
Ln yearly total personal income	0.0448***	0.671***	0.0176***	0.118***	0.233***	0.149***
	(0.0123)	(0.0222)	(0.00465)	(0.0271)	(0.0319)	(0.0210)
Female	0.0126	0.135***	-0.0375***	-0.0190	-0.813***	-0.138***
	(0.0206)	(0.0223)	(0.00803)	(0.0381)	(0.0457)	(0.0250)
Age	-0.0382***	-0.0244***	0.00450**	0.0514***	0.0934***	-0.0135**
	(0.00630)	(0.00707)	(0.00177)	(0.00926)	(0.00721)	(0.00577)
$Age^2/1000$	0.329***	0.470***	-0.0165	-0.607***	-0.519***	0.166**
	(0.0606)	(0.0648)	(0.0172)	(0.104)	(0.0746)	(0.0630)
Single	-0.0945***	-0.111**	-0.00588	0.0698	0.0618	-0.0590
	(0.0302)	(0.0411)	(0.0103)	(0.0537)	(0.0609)	(0.0517)
Bad health	-2.558***	-0.554***	-0.0357***	-0.222***	-0.138***	-0.355***
	(0.0602)	(0.0359)	(0.00560)	(0.0486)	(0.0277)	(0.0333)
Widowed	0.0357	-0.314***	-0.00413	-0.210*	-0.184	-0.190
	(0.0455)	(0.0947)	(0.0200)	(0.112)	(0.141)	(0.119)
Separated	-0.00669	-1.096***	-0.0146	0.0879	-0.245*	-0.154*
	(0.0810)	(0.124)	(0.0231)	(0.138)	(0.138)	(0.0864)
Divorced	-0.138***	-0.661***	-0.0463***	-0.315***	-0.431***	-0.355***
	(0.0383)	(0.0527)	(0.0115)	(0.0716)	(0.0706)	(0.0523)
Unemployed	-0.268***	-1.224***	-0.0587**	-0.0304	0.0420	-0.390***
	(0.0748)	(0.104)	(0.0241)	(0.0967)	(0.110)	(0.0978)
Housewife	0.0171	0.248***	0.0200*	0.126**	0.0591	0.118**
	(0.0355)	(0.0445)	(0.0116)	(0.0566)	(0.0578)	(0.0518)
Student	-0.0257	0.530***	0.0394**	0.293***	1.092***	0.534***
	(0.0416)	(0.0800)	(0.0178)	(0.0534)	(0.0671)	(0.0559)
Retired	-0.159***	0.0769	0.00862	-0.00636	0.0591	0.0257
	(0.0462)	(0.0672)	(0.0113)	(0.114)	(0.0857)	(0.0625)
Left	-0.0847***	-0.0487	-0.0849***	0.186***	0.629***	0.124**
	(0.0184)	(0.0358)	(0.00999)	(0.0175)	(0.0287)	(0.0556)
Middle education	0.101***	0.192***	0.0178**	0.365***	0.578***	0.254***
	(0.0265)	(0.0491)	(0.00863)	(0.0454)	(0.0497)	(0.0545)
High education	0.123***	0.490***	0.0728***	0.582***	1.265***	0.571***
	(0.0344)	(0.0653)	(0.0124)	(0.0445)	(0.0535)	(0.0499)
Foreigner	-0.142***	-0.457***	-0.0526***	-1.534***	-0.642***	0.275***
	(0.0501)	(0.0556)	(0.0145)	(0.114)	(0.0682)	(0.0517)
Catholic	0.0400	0.0312	0.0117	0.130***	-0.158**	0.262***
	(0.0353)	(0.0390)	(0.00980)	(0.0439)	(0.0739)	(0.0708)
Protestant	0.0198	0.0785	0.0374***	0.151***	-0.0161	0.292***
	(0.0331)	(0.0545)	(0.0113)	(0.0535)	(0.102)	(0.0663)
Other religion	-0.00911	-0.136	0.0168	0.329***	-0.140	0.463***
	(0.0644)	(0.107)	(0.0143)	(0.0906)	(0.143)	(0.0785)
French	-0.0751	-0.316***	-0.222***	-0.597***	-0.496***	-0.365***
	(0.0689)	(0.0817)	(0.0142)	(0.112)	(0.0967)	(0.0900)
Italian	-0.0627	-0.302	-0.143***	-0.625***	-1.336***	-0.484***
	(0.142)	(0.282)	(0.0238)	(0.107)	(0.316)	(0.0911)
Constant	10.81***	-2.890	-0.813	2.104	2.143	6.963**
	(3.019)	(2.696)	(0.602)	(4.474)	(3.251)	(3.324)
Observations	59,649	59,526	52,016	59,340	59,647	53,800
R-squared	0.304	0.144	0.078	0.067	0.170	0.060

Notes: Standard errors are in parentheses, clustered by cantons. All regressions include individual controls, municipal and cantonal controls, canton fixed effects, canton time trends and year fixed effects. These regressions are estimated in cross-section, without individual fixed effects. Municipal and cantonal controls include municipality size, cantonal income per capita and cantonal unemployment rate. ***,**,** significant at 1%, 5% and 10% respectively.

Table A.8: Descriptive Statistics by Treatment Groups

	Cantons affected by the reform			Cantons not affected by the reform			(1)-(2) Pro>chi2
	2000	2012	Difference Pre-Post (1)	2000	2012	Difference Pre-Post (2)	
Female	0.501	0.518	-0.018 (0.01)	0.517	0.517	-0.000 (0.02)	0.27
Married	0.538	0.532	0.007 (0.04)	0.549	0.558	-0.008 (0.04)	0.80
Divorced	0.071	0.077	-0.006 (0.02)	0.053	0.073	-0.020 (0.02)	0.67
Single	0.327	0.327	-0.000 (0.02)	0.345	0.324	0.020 (0.03)	0.49
Widowed	0.054	0.052	0.002 (0.01)	0.038	0.036	0.002 (0.01)	0.97
Separated	0.009	0.010	-0.002 (0.00)	0.015	0.008	0.007 (0.01)	0.21
Age	42.08	47.32	-5.238 (0.78)	41.891	47.214	-5.324 (1.22)	0.94
Foreigner	0.100	0.071	0.029 (0.02)	0.100	0.065	0.035 (0.03)	0.76
Bad health	0.132	0.155	-0.023 (0.02)	0.128	0.148	-0.019 (0.03)	0.91
Employed	0.613	0.575	0.039 (0.03)	0.598	0.563	0.034 (0.02)	0.92
Unemployed	0.006	0.009	-0.003 (0.00)	0.007	0.009	-0.001 (0.00)	0.67
Retired	0.136	0.200	-0.064 (0.02)	0.128	0.206	-0.078 (0.02)	0.54
Student	0.134	0.146	-0.012 (0.02)	0.163	0.162	0.001 (0.02)	0.68
Housewife	0.089	0.060	0.029 (0.01)	0.094	0.046	0.048 (0.01)	0.41
French	0.167	0.165	0.002 (0.12)	0.353	0.349	0.004 (0.24)	0.60
German	0.769	0.773	-0.004 (0.13)	0.637	0.642	-0.004 (0.23)	0.93
Italian	0.063	0.062	0.002 (0.07)	0.009	0.009	0.000 (0.01)	0.81
Left voter	0.329	0.341	-0.012 (0.04)	0.333	0.361	-0.028 (0.06)	0.75
Total income	10.733	10.982	-0.249 (0.05)	10.716	10.965	-0.249 (0.06)	1.00
Cant.income per c.	10.794	10.860	-0.066 (0.08)	10.773	10.850	-0.077 (0.15)	0.80
Municipality size	8.630	8.737	-0.107 (0.32)	8.869	8.783	0.086 (0.51)	0.08
Cant.unempl. rate	1.458	2.468	-1.011 (0.30)	1.771	2.429	-0.657 (0.79)	0.16

Table A.9: The Causal Effect of Centralization Reforms on Life satisfaction. Detailed Results.

	(1) Cross-section without controls	(2) Cross-section with controls	(3) Panel analysis without controls	(4) Panel analysis with controls
Centralization reforms	-0.0458**	-0.0458**	-0.0411**	-0.0383**
	(0.0204)	(0.0194)	(0.0170)	(0.0169)
Individual controls				
Ln yearly total personal income	0.244***	0.245***	0.0629***	0.0630***
	(0.0237)	(0.0241)	(0.00921)	(0.00922)
Female	0.133***	0.134***	–	–
	(0.0275)	(0.0276)		
Age	-0.0426***	-0.0427***	-0.0634***	-0.0660***
	(0.00644)	(0.00643)	(0.00780)	(0.00707)
$Age^2/1000$	0.493***	0.495***	0.417***	0.416***
	(0.0551)	(0.0551)	(0.0687)	(0.0685)
Single	-0.338***	-0.334***	-0.227***	-0.228***
	(0.0472)	(0.0474)	(0.0382)	(0.0392)
Bad health	-0.993***	-0.992***	-0.400***	-0.400***
	(0.0505)	(0.0504)	(0.0160)	(0.0160)
Widowed	-0.437***	-0.434***	-0.589***	-0.589***
	(0.0585)	(0.0586)	(0.0805)	(0.0805)
Separated	-0.818***	-0.817***	-0.549***	-0.548***
	(0.112)	(0.111)	(0.0573)	(0.0566)
Divorced	-0.483***	-0.480***	-0.0851*	-0.0849**
	(0.0677)	(0.0671)	(0.0420)	(0.0410)
Unemployed	-1.060***	-1.058***	-0.560***	-0.560***
	(0.184)	(0.184)	(0.0636)	(0.0632)
Housewife	0.144***	0.143***	-0.0276	-0.0273
	(0.0501)	(0.0502)	(0.0300)	(0.0302)
Student	0.222***	0.221***	0.0588*	0.0597**
	(0.0656)	(0.0652)	(0.0299)	(0.0289)
Retired	0.166***	0.166***	0.0458*	0.0460*
	(0.0516)	(0.0517)	(0.0267)	(0.0267)
Left	-0.0952***	-0.0920***	–	–
	(0.0307)	(0.0291)		
Middle education	0.0853	0.0863	–	–
	(0.0528)	(0.0523)		
High education	0.103*	0.106*	–	–
	(0.0603)	(0.0592)		
Foreigner	-0.162**	-0.159**	–	–
	(0.0680)	(0.0693)		
Catholic	0.0174	0.0176	–	–
	(0.0257)	(0.0259)		
Protestant	0.0788**	0.0771**	–	–
	(0.0284)	(0.0289)		
Other religion	0.0250	0.0260	–	–
	(0.0843)	(0.0835)		
French	-0.182***	-0.181***	–	–
	(0.0565)	(0.0561)		
Italian	-0.341*	-0.337*	–	–
	(0.195)	(0.196)		
Municipal and cantonal controls				
Ln cantonal income per capita		0.214		0.233
		(0.153)		(0.154)
Cantonal unemployment rate		-0.0285		0.0226
		(0.0382)		(0.0153)
Ln municipal population		-0.0108		0.00217
		(0.00943)		(0.0154)
Observations	54,761	54,761	84,218	84,218
R-squared	0.139	0.139	0.034	0.034
Nb of Individuals	10,842	10,842	14,695	14,695

Notes: Standard errors are in parentheses, clustered by cantons. All regressions include individual controls, municipal and cantonal controls, individual fixed effects, canton fixed effects, year fixed effects and canton time trends. *,**,*** significant at the 10%, 5% and 1% respectively.

Table A.10: Additional Tests

	(1) Risk averse	(2) Optimism	(3) Anxiety
Centralization reforms	-0.0194	-0.0534	0.0215
	(0.0169)	(0.0334)	(0.0306)
Observations	73,068	84,122	84,200
R-squared	0.033	0.025	0.028
Nb of individuals	13,548	14,693	14,697
Individual controls	Yes	Yes	Yes
Municipal and cantonal controls	Yes	Yes	Yes
Individual fixed effects	Yes	Yes	Yes
Canton fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Canton specific time trends	Yes	Yes	Yes

Notes: Standard errors are in parentheses, clustered by cantons. Individual controls include ln income, age, age squared, marital status, employment status and health status. Municipal controls include municipality size and cantonal controls include cantonal GDP per capita and the cantonal unemployment rate. In column (1), I only report the interaction term between "risk averse" and "Centralization reforms". *,**, *** significant at the 10%, 5% and 1% respectively

Table A.11: Impact of the Reforms on Voter Participation at the Federal Votations

	Before Reform	After Reform	Change (S.E.)
Voter participation	48.57 (0.94)	45.57 (0.84)	- 3.00*** (1.28)

Notes: Based on 19 cantons from 2001 to 2009. Data are from the Swiss Federal Statistics. In parentheses, standard deviations in columns 1 and 2 and standard errors in column 3.

Table A.12: Impact of the Reforms on Voter Participation at the Cantonal Elections

	Before Reform	After Reform	Change (S.E.)
Voter participation	46.35 (1.65)	48.02 (0.85)	1.673 (1.99)

Notes: Based on 19 cantons from 1999 to 2011. Data are from the Swiss Federal Statistics. In parentheses, standard deviations in columns 1 and 2 and standard errors in column 3.

C. Appendix: Variables Definitions

C.1. The Federal Population Census

The Federal Population Census is realised every 10 years and provides data on the demographic, spatial, social and economic developments of Switzerland: `http://www.bfs.admin.ch/bfs/portal/en/index/infothek/erhebungen__quellen/blank/blank/vz/uebersicht.html`

I rely on the following variables from the Federal Population Census:

- Age composition
- % women

- % married
- % foreigner
- % Christian; % Muslim; % Jewish; %no religion
- % French; % German; %Italian
- % employed; % unemployed
- % primary education; % secondary education; % tertiary education

C.2. The BADAC

The BADAC website provides unique data from administrative sources on the Swiss Federation, its political-administrative organisation, its cantonal and municipal public services: http://www.badac.ch/fr/index.php.

I rely on the following variables from the BADAC data:

- Cantonal GDP per capita: http://www.badac.ch/db/db.php?abs=canton_x&code=Csi9.11a2MATIC&annee=max&arg=&lang=Fr
- Cantonal Unemployment rate: http://www.badac.ch/db/db.php?abs=canton_x&code=Csi11.51&annee=max&arg=&lang=Fr
- Cantonal Public Spending (total) per capita: http://www.badac.ch/db/db.php?abs=canton_x&code=Csi10.41bMATIC&annee=max&arg=&lang=Fr
- Municipality Size: http://www.badac.ch/db/db.php?abs=region5_1&code=Vs11.11&annee=max&arg=&lang=Fr
- Degree of Local Decentralization: http://www.badac.ch/db/db.php?abs=canton_x&code=Csi10.41dMATIC&annee=max&arg=&lang=Fr

C.3. Direct Democracy

Direct Democracy is an index computed by Stutzer (1999). This index describes institutions of direct democracy in 26 Swiss cantons, specifically the statutory initiative and referendum, the constitutional initiative, and the fiscal referendum.

C.4. Swiss Household Panel

I rely on the following questions from the SHP:

- Satisfaction with life in general: In general, how satisfied are you with you life if 0 means "not at all satisfied" and 10 means "completely satisfied"?
- Frequency of energy and optimism: Are you often plenty of strength, energy and optimism, if 0 means "never" and 10 "always"?
- Depression, blues, anxiety: Frequency. Do you often have negative feelings such as having the blues, being desperate, suffering from anxiety or depression, if 0 means "never" and 10 "always"?
- Feeling about political influence: How much influence do you think someone like you can have on government policy, if 0 means "no influence" and 10 "a very strong influence"?
- Interest in politics: Let's now talk about politics and of your opinions on the subject. Generally, how interested are you in politics if 0 means "not at all interested" and 10 "very interested".
- Satisfaction with health status: How satisfied are you with your state of health, if 0 means "not at all satisfied" and 10 "completely satisfied"?
- Satisfaction with financial situation in the household: We would now like to talk about your financial situation. Overall how satisfied are you with the financial situation of your household, if 0 means "not at all satisfied" and 10 "completely satisfied"?
- Overall satisfaction with democracy: Overall how satisfied are you with the way in which democracy works in our country, if 0 means "not at all satisfied" and 10 "completely satisfied"?
- Satisfaction with public expenses: Are you in favour of a diminution or in favour of an increase of the Confederation social spendings?
- Risk attitude: Are you generally a person who is fully prepared to take risk or do you try to avoid taking risks, if 0 means "avoid taking risks" and 10 means "fully prepared to take risk"?

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