



**State Capture from Below? The Contradictory Effects of
Decentralisation on Public Spending**

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Review

State Capture from Below?

The Contradictory Effects of Decentralisation on Public Spending

Abstract

This study analyses the contradictory effects of decentralisation on public spending. We distinguish three dimensions of decentralisation and analyse their joint and separate effects on public spending in the Swiss cantons over 20 years. We find that overall decentralisation has a strong, significant and negative effect on the size of the public sector, thus confirming the Leviathan hypothesis. The same holds for fiscal and institutional decentralisation. However, the extent to which political processes and actors are organised locally rather than centrally actually increases central and decreases local spending. This suggests that actors behave strategically when dealing with the centre by offloading the more costly policies. The wider implication of our study is that the balance between self-rule and shared rule has implications also for the size of the overall political system.

Keywords

Decentralisation, public spending, Leviathan, Switzerland, cantons

1 Introduction¹

What explains why some governments spend more than others? Political science, and in particular the public policy literature, has long sought to answer this question. The enquiry points to the very heart of politics given the key role of institutions for distributive, competitive and ideological processes such as policy-making, elections, and rivalling ideas on the role of the state in general (cf. Zubek and Goetz 2010). In short, political conflict often revolves around how much should be spent, when, and on what, to paraphrase Lasswell (1936). Accordingly, ever since Schmidt's (1993, 2000) exegesis of rivalling theories explaining public expenditure, we can distinguish between socio-economic, partisan, power resources, and cultural-historical determinants, next to institutional approaches along the lines of Tsebelis' (2000) veto-player theory.

At the same time, and building on this last point about the role of institutions, various forms of vertical power-sharing – regionalism, decentralisation, federalism etc. – are widely believed to affect both the legitimacy and efficiency of policy-making (e.g. Rodden 2006; Treisman 2007; Brennan and Buchanan 1980). Decentralisation in particular is argued to lead to lower deficits (Busch 1995; Baskaran 2012), lower public spending on education, health care, pensions or general welfare (Busemeyer 2008; Vatter and Rüefli 2003), lower unemployment (Crepaz 1996), more satisfaction due to better tailored service delivery (Oates 1972), and lower inflation rates and higher economic growth (Castles 1999; Lancaster and Hicks 2000). The most famous statement emanating from that literature is probably Brennan and Buchanan's (1980, 216) "Leviathan hypothesis", according to which "[t]otal government intrusion into the economy should be smaller, ceteris paribus, the greater the extent to which

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taxes and expenditures are decentralized” (emphasis omitted). In other words, the “size of the public sector should vary inversely with fiscal decentralization” (Ebel and Yilmaz 2002, 16; also Rodden 2006, 5).

However, “[s]urprisingly little thought has gone into defining and measuring decentralization and federalism in ways that facilitate empirical analysis” (Rodden 2006, 24) of exactly that connection. Either such measures are carefully designed – or at least skilfully combined – but only selected public policies are assessed (e.g. Biela et al. 2013); or output-analyses rely on a simplified understanding of vertical state structures (e.g. Lijphart 2012, Schmidt 1996; cf. also Braun 2000a, 2-4) and an operationalisation of fiscal indicators only (e.g. Rodden 2003a). Among the notable exceptions are the studies by Schneider (2006) and O’Dwyer and Ziblatt (2006), who try to study the impact of different forms of decentralisation on social policies and the quality of government, respectively; as well as Braun (2000b), who compares clusters of countries distinguished by the distribution, extent and sharing of political power.¹ But even these studies may speak of political power only to then *measure* its presence, type and distribution using revenue, expenditure, taxes and fiscal transfer data. As we shall argue below, this neglects both institutions as well as politics in a more narrow sense (actors and processes).

Hence, following Rodden’s (2006, 44; emphasis added) observation that “normative theories establishing decentralization’s promise seem to assume implicitly not only a wide range of local taxing and spending authority, but also some modicum of *political* federalism”, this study also includes legal and political indicators that more closely capture what is intended, namely the extent to which political power is distributed vertically. We will provide a three-fold conceptualisation and measurement of decentralisation and then analyse its impact on government size. More particularly, we shall distinguish between an institutional (*polity*), a functional (*policy*), and a political dimension (*politics*) of decentralisation and analyse if,

controlling for a number of other factors, decentralisation and its three dimensions matter for public expenditure. Taking profit of the opportunity afforded by the Swiss federation as a “laboratory” of 26 sub-national political systems (Braun 2003; Vatter 2002), we are able to compare different types and degrees of intra-cantonal decentralisation to assess their effect on cantonal, local, and total (cantonal plus local) spending over 20 years (1990–2009).

We proceed by first discussing the current state of the art in both the public policy and the territorial politics literatures. Section three presents our research design before we explain government size using our own measures of decentralisation and several controls, in section four. Section five discusses our findings in light of the theoretical literature and concludes.

2 Theory and Hypotheses

The extent, even if not necessarily the type, of public expenditure has traditionally been explained from either one of five perspectives: neo-institutionalism, modernisation, path dependency, power resources, and party competition (Schmidt 1993, 2000). Since this study focuses on the effects of decentralisation, we first discuss theoretical arguments pertaining to that causal mechanism in particular. In doing so we distinguish three different types of decentralisation: functional, political, and institutional in a narrow sense. We then briefly discuss rivalling explanations – parties-in-government, hard-budget constraints, direct democracy, and non-institutional factors – as currently found in the literature.

2.1 *The impact of decentralisation*

At its most general, the impact of decentralisation (our shorthand for vertical power sharing) on government size is conceptualised as the effect of a specific set of “interpersonal, formal or informal rules and norms” (Schmidt 1993, 378; Schmidt 2000, 28) on political action (cf. also Hall and Taylor 1996; March and Olsen 1989; Peters 2011). This effect is commonly

hypothesised to operate through three causal mechanisms that all relate to different aspects of decentralisation: competition, local autonomy, and veto-players.

First, competition among lower-level units in terms of taxation and service provision is thought to dampen the size of the overall state, since public entities would only raise and provide the absolute minimum of both to attract wealthy residents (Besley and Case 1995; Tiebout 1956, 418; Oates 1999, 1122; Alesina and Spolaore 2003, 137; Treisman 2007, 58). Such is the famous “Leviathan hypothesis” (Brennan and Buchanan 1980, 216), which rests on several assumptions, namely complete information, unhindered or at least not too costly a resident mobility, and individuals’ rational desires of neither wanting to pay for, nor demand more, than absolutely necessary (cf. Tiebout 1956, 419).

Given that our subsequent empirical analysis uses the 26 Swiss cantons as a comparative template, confidence in the validity of these assumptions is higher than in a cross-national analysis (see also Monogan 2013 and Wasserfallen 2014). The average Swiss canton has 310’000 inhabitants and spans 1’600 km² (BFS 2015), so complete information and mobility are more likely. Also, moving in our case not only means staying in the same country, but also in the same canton, the level where several important powers are exercised (e.g. police, education, health and environment – so there are no costs in terms of adjusting to new systems by staying within the same canton) since Switzerland is one of the most federalist countries of the world (Füglister and Wasserfallen 2014; Linder 2012). Finally, the existence of fiscal equivalence in terms of a convergence of decision-makers, tax-payers and service recipients (Schaltegger and Feld 2003) further enhances the logic according to which “voting with the feet” (Tiebout 1956) indeed leads to service-provision matching tax yield.

As the Leviathan hypothesis is concerned primarily with overall government size, it only makes sense to test for the effect of this aspect of decentralisation on total public spending,

that is both local and central spending combined (cf. Rodden 2003a, 709). Greve (2012, 7) equally underlines how this competitive logic of federalism would serve to “discipline governments” *tout court*. Hence, a first hypothesis reads as follows:

H1: The more fiscally decentralised a Swiss canton, the lower its total public expenditures.

A second argument why decentralisation would contribute to smaller government is because much of the overall state activity is “hidden” at lower levels, i.e. decided, financed and carried out by sub-system entities *at their own discretion*. But for decentralisation to lower “central decision costs” (Greve 2012, 6; emphasis added), local governments must have sufficient legal autonomy to actually deliver the required public services. This is an aspect that pertains not so much to competition or political influence but rather to “self-rule” (Elazar 1987; Hooghe et al. 2010).

That distinction between fiscal and legal autonomy (or between policy and polity decentralisation, see below) is often overlooked but has been made before. Watts (2008, 65–66) for example distinguishes between the “the *scope of jurisdiction* exercised by each level of government, and the *degree of autonomy* or freedom from control by other levels of government with which a particular government performs the tasks assigned to it” (original emphasis). To determine the latter, he assesses the “formal allocation by the constitution of legislative powers to each level of government” as well as “the extent to which each field of jurisdiction is exclusively assigned to one level of government, concurrent or shared” (ibid. p. 66). Rodden (2004, 484) equally cautions that “it is difficult to know what to make of expenditure decentralization data without additional data on the regulatory framework for subnational finance”, such as what type of taxes can be raised or how much local discretion there is in determining the tax base (cf. also Ebel and Yilmaz 2002, 4–5). Such rules are usually fixed in the constitution, although political practice and/or legal adjudication thereof might change over time (Gibson 2004, 2; Greve 2012, 8). The testable assumption arising

from this is that given local autonomy, a central government can afford to do less since lower-level entities will both provide a safeguard for assuring a minimal service provision as well as act as the first entry points for citizen demands. We thus hypothesize that

H2a: The more constitutionally decentralised a Swiss canton, the lower its central expenditures.

A corollary from this is that through increased proximity of decision-makers to service beneficiaries, also the monitoring and sanctioning abilities of taxpayers are strengthened, so not only central but also local governments will spend less – and total government size decreases as in H1. However, as Rodden (2003a, 701) speculates, it might well be that vested interests operate even better at the local level and/or that citizens are more demanding precisely because of better oversight abilities (cf. also Oates 1985). In both scenarios, polity decentralisation would lead to more local spending. Hence,

H2b: The more constitutionally decentralised a Swiss canton, the higher its local expenditures.

Thirdly, there is the already mentioned political aspect of de- or rather *non*-centralisation. The argument here is that the existence of non-central loci of decision-making provides for a check on policy change and, through that, functions to curb excessive expenditure (Brennan and Buchanan 1980, 26–28; Obinger 1998, 46; Good et al. 2012, 455). As veto-players (Tsebelis 2000), local governments may block attempts by the centre to encroach upon their policy areas by centralising functions otherwise provided by them and/or through acquiring new powers (Vatter and Freitag 2002, 59–60; Freitag and Vatter 2008, 275; Schmidt 1998, 223; Braun 2000b, 50–51). Schmidt (1996, 177) also provides evidence that “countermajoritarian constraints [...] have stopped or reversed the trend towards big government” (cf. also Samuels and Mainwaring 2004, 86-88). But this means that to have an effect on policy-making, decentralisation must not only capture expenditure and revenue discretion (the policy dimension) or constitutional autonomy (the polity dimension), but also

actual local political influence at higher levels (Braun 2000b, 36), i.e. the ability to block or initiate policy-change.

Most often this aspect of territorial politics is captured by the notion of “shared rule”, which measures the extent and way in which regions co-determine national decision-making, (cf. Hooghe et al. 2010; Rodden 2006, 38). However, we prefer the term “political decentralisation” because it better conveys both the *nature* of central-local relations (political) and the *direction* of influence (bottom-up) (cf. also Riker 1964, 10). Thus sub-national governments co-determine central decision-making using different channels, for example through representatives in central political organs, such as elected Senators or the appointed delegates of Minister-Presidents (Rodden 2003b, 165). Alternatively, in the absence of upper chambers, non-central entities might also resort to bargaining directly with the federal government (Bird and Tassonyi 2003, 94), act through political parties (Riker 1964, 137ff.), or both (Samuels and Mainwaring 2004, 88-90). The point here is that the more powerful these territorial veto players, the more successfully they can object to enlarging the scope of public activity. Hence, a third hypothesis reads as follows:

H3a: The more politically decentralised a Swiss canton, the lower its total expenditures.

However, it may also happen that lower-level entities use their influence to shift public costs upwards and/or force the centre to take on new responsibilities, thus increasing the size of the central government. Rodden (2006, 5 and 41) argues along similar lines when emphasising central-local bargaining dynamics and possible solutions to vertical coordination problems. Thus “local governments, working on behalf of resident taxpayers, may shift the production costs of local services onto nonresidents through federally funded transfers” (Inman 2003, 36) that increase central spending. This very much resembles the so called “flypaper effect” (Rodden 2006, 78; Freitag and Vatter 2008, 276) but in an opposite direction, i.e. bottom-up instead of top-down. Specific examples involve the Brazilian governors “forc[ing] the central

government to assume their debts”, in the early 1990s (Samuels and Mainwaring 2004, 106), or the positive effect of legislative overrepresentation on a state’s share in federal funds in Argentina and Mexico (Gibson et al. 2004, 181; Diaz-Cayeros 2004, 315).

In other words, giving non-central politicians a direct say over central policy-making will enable them to have the most expensive policies centralised or, in more technical terms, to “externaliz[e] the costs to others, turning public revenue into a ‘common pool’ that is overfished by provincial governments.” (Rodden 2006, 6; cf. also Freitag and Vatter 2008). Hence, a second hypothesis on the effect of decentralisation reads as follows:

H3b: The more politically decentralised a Swiss canton, the higher its central expenditures.

Details on how these three different dimensions of decentralisation are measured are provided in the operationalisation section, below, and in the Data Annex. Table 1 summarises our hypotheses. Note that, in principle, interactions between the three dimensions are very well imaginable, too. For example, local governments might need to possess a minimum degree of constitutional self-rule for shared rule to be operating efficiently. However, the point of our three-dimensional measurement strategy is precisely to *disentangle* the mere availability of resources from the power to decide on their use (self-rule dimension: policy and polity) as well as from political influence at the centre (shared rule dimension: politics). But the point about possible interaction effects will be taken up in the concluding section. We next turn to rivalling explanations.

--- Table 1 ---

2.2 Rivalling explanations

There are several rivalling explanations that could explain government size better than decentralisation. The first is *direct democracy*: as an opportunity structure with relatively low entry costs, it offers a veto instrument of a particular kind, namely one for societal groups

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3 sufficiently well organised to collect the required number of signatures to initiate or block
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5 policy change (Wagschal and Obinger 2000, 469; also Wagschal 1997, 226). But as with
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7 political decentralisation above, opening up the space of political decisions to the non-elite
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9 (i.e. not necessarily elected politicians) and the non-political (moral, economic etc.) elite
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11 could lead in both directions, that is less *or* more public intervention than would otherwise be
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13 the case (Freitag et al. 2003, 355; Linder 2012, 287). It all depends on the purpose and
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15 strength of these organised interests (cf. also Funk & Gathmann 2011, 1258). However,
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17 because from the point of view of the people's final decisions no strategic points are to be
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19 scored in direct-democratic votes, their vote will tend to be longer-term than that of
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21 politicians who want to be re-elected in a few years (cf. Eichenberger 1999). Moreover, direct
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23 democracy regularly practised makes for better informed citizens, raising the bar beyond
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25 which a majority of them is convinced that policy innovation is needed (Eichenberger 1999,
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27 268; Feld and Kirchgässner 2000; Kirchgässner 2000). Finally, knowing the threat of a direct-
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29 democratic veto to exist, governments will become more cautious as regards the extent of
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31 change proposed, all the more so since the default option, the status quo, is always better
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33 known and thus inherently favoured by a generally risk-averse demos (Samuelson and
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35 Zeckhauser 1988; Funk and Gathmann 2013).

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38 Another institutional variable are *hard budget constraints*. These refer to collectively binding
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40 rules on the extent of public expenditure growth and the associated risks of a bailout (Rodden
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42 et al. 2003, 4) and are thus institutions par excellence (Schmidt 1993, 379). Such constraints
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44 tie further spending to a corresponding surplus in generated revenue, a favourable debt-per-
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46 GDP-ratio (e.g. Maastricht's Growth and Stability Pact), and/or satisfactory economic
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48 performance in general. Switzerland and most of its cantons have chosen yet another way to
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50 ensure balanced budgets, using an instrument called "debt break" (*Schuldenbremse*), whereby
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the government is authorised to run deficits during recessions and to run surpluses during booms. Over the whole business cycle, however, it has to ensure that the budget is balanced. Thus, starting with a given level of debt, the debt should not have increased after the completion of a full cycle. (Müller 2004, 2)

The debt break, in other words, represents a specific kind of self-imposed budget constraint (cf. also Rodden et al. 2003, 23). The idea to apply this rule to Swiss policy-making dates back to 1919, when Canton St. Gall first introduced it into its legislation (Stalder and Röhrs 2005, 12; Kirchgässner 2010, 8). Over the 1990s and 2000s, several other cantons followed suit (BAK BASEL 2012), but variations on the theme exist in terms of both the constraints imposed and the sanctions to be applied in case of rule violation (Stalder and Röhrs 2005, 3; BAK BASEL 2012, 20–28). Building on a substantive body of prior evidence relating debt breaks to lower budget deficits (Feld and Kirchgässner 2000 and 2008; Schaltegger 2002; Krogstrup and Wälti 2008; Yerly 2013; Lüchinger and Schaltegger 2013; Chatagny 2013; see also Burret and Feld 2014 for an overview), we would expect that stricter debt break rules lead to lower cantonal expenditures.

Finally, we include the share of voters for cantonal government parties into our empirical analysis to account for *collusion*. According to Lijphart (2012), consensual decision-making procedures encourage the magnitude of state intervention as minority interests have to be considered (Vatter and Freitag 2002, 58; Baskaran 2013). The more inclusive a policy-making process, the more distributive policies are pursued for which the cost-bearers are less obvious (Braun 2000a, 13; Schniewind et al. 2009). So increased government spending might simply be a reflection of a broad governing coalition.

3 Research Design

The research design chosen for this study is a sub-national comparison of Switzerland's 26 regional entities, the cantons, and the relations between cantonal (=central) and municipal (=local) governments. This kind of analysis, advised amongst other by Lijphart (1971, 689f.), King et al. (1994, 219) and Snyder (2001), assumes cantonal-local relations to be functionally equivalent to central-local relations. This has the advantage of strengthening some of the assumptions that have to be made (such as full information and resident mobility, see above) and holding other variables (such as the overall constitutional framework, defence spending or democratic stability) constant. Although the usefulness of this approach for fiscal matters has been proven by, amongst others, Wallis and Oates (1988), Schaltegger and Feld (2003) and Freitag and Vatter (2008), we discuss limitations to our research design in the concluding section. We next explain the operationalisation of our variables and then present our method.

3.1 Operationalisation

Our dependent variable is cantonal, local and total (= cantonal + local) public expenditure, measured on a per capita basis to facilitate comparability. However, per capita spending has increased in all the 26 cantons between 1990 and 2009, so instead of estimating absolute levels of annual per capita spending for each canton we subtract the mean of all cantons' per capita spending for each year. In other words, we estimate the deviation from the mean cantonal per capita public spending to control for time-dependent error terms (cf. also Stadelmann-Steffen and Bühlmann 2008, 36–37).²

Turning to our key independent variables, *policy-decentralisation* is measured using fiscal, personnel and administrative decentralisation within every Swiss canton, understood in turn as the extent to which local governments raise and administer public money (cf. also Rühli 2012 and Fiechter 2010). However, full centralisation in one area (e.g. tax raising capacity)

can easily be offset by decentralisation in another (e.g. personnel), which is to say that simply averaging their values would not render an accurate picture. In Goertz’s (2006, 115) terms, therefore, all three components are necessary and together they are jointly sufficient conditions for a canton to be decentralised in its policy-dimension. We therefore multiply general revenue decentralisation with administrative (the share of local from total public expenditures for administration only) and personnel decentralisation (the share of local staff and local staff salaries from their respective total numbers; cf. also Chhibber and Kollman 2004, 234; Treisman 2002, 13).³

Polity-decentralisation is defined by the extent of freedom guaranteed by cantonal constitutions (Giacometti 1941) and expert perceptions of the actual realisation thereof (Ladner et al. 2013). This takes into account possible discrepancies between “rules-in-form” and “rules-in-use” (Rothstein 1996; cf. also Rodden 2004, 492). In practice, we average the standardised values of the Giacometti-index (cantonal constitutions are either centralised, decentralised, or balanced; Giacometti 1941) and the results of the local government secretary surveys (*Gemeindeschreiberbefragung*, GSB) of 1994, 2005, and 2009 (cf. Ladner et al. 2013).⁴ Averaging is possible because the two sub-dimensions are “substitutable” (Goertz 2006, 108).

Finally, *politics-decentralisation* captures the degree to which political decision-making is decentralised (i.e. local) rather than centralised (i.e. cantonal). There are seven indicators that are assessed here (cf. also Mueller 2011, 2014 and 2015):

1. *Cantonal political party organisation* measures the local influence over candidate selection for cantonal parliamentary elections, from purely local discretion to cantonal delegate assemblies without any attachment to local politics;

2. *Regionalism* assess the degree to which regional assemblies and/or prefects exist in a canton, that is whether there are additional non-central loci situated between cantonal and local governments;⁵
3. *Territorial quotas* take into account that electoral competition for the cantonal executive and/or legislative branches might be restricted using fixed quotas, such as those for the Bernese Jura region (guaranteed one out of five government seats);
4. *Electoral system organisation* measures the territorial congruence between local governments and the electoral districts used for cantonal parliamentary elections;
5. The *direct representation of mayors in cantonal parliaments* is assessed using the self-declarations of Members of Cantonal of Parliaments;
6. The *organisational strength of local government organisations* captures the existence, cohesiveness and public presence of Local Government Associations (LGAs); and, finally,
7. The *existence of direct-democratic instruments for local governments* measures the extent to which local governments *qua* municipalities can veto a cantonal bill and/or initiate cantonal constitutional change.

All these indicators have in common that they – at least potentially – bring local interests to bear on central decision-making (cf. Page 1991, Rodden 2004, Stepan 2004, Tarrow 1977). To arrive at a single measure of politics-decentralisation, we rely on the results of a factor analysis of these seven indicators that searches for a single factor only (see Table A1, in the Annex). Finally, a reliability test of policy-, polity- and politics-decentralisation thus constructed reveals a sufficiently large commonality; therefore, to arrive at a single measure of *overall decentralisation*, we have calculated their arithmetic mean.⁶ The conceptual structure of decentralisation so defined is visualised in Figure 1, while summary statistics and empirical distribution of the mean values across the whole period are presented in the Annex.

--- Figure 1 ---

To measure direct democracy, we use Stutzer’s (1999) index as updated by Schaub and Dlabac (2012). It is composed of the mean values of four dimensions, each coded from 1 = few direct-democratic rights to 6 = extended direct-democratic rights. For debt breaks, we rely on Feld and Kirchgässner’s (2008) ordinal variable on the strictness of cantonal debt breaks (0 = no debt break, 3 = strictest debt break). The strictest debt breaks tie expenditure directly to budget planning, foresee no exceptions, and provide for sanctions in case of non-obedience. For each of these elements missing, strictness is downgraded to 2 or 1, while 0 signifies the absence of a debt break altogether. For the years from 1990 to 2005, we use the coding by Lüchinger and Schaltegger (2013, 789–790 and 804) and Stalder and Röhrs (2005, 28–30), for 2006–7 that by Chatagny (2013, 34) and for 2008–9 we have calculated the corresponding cantonal values ourselves based on information from the *Année Politique Suisse* (APS 2009). The resulting measure does not significantly correlate with any other indicator in our dataset. Finally, as an indicator of the size of the governing coalition we use the summed share of voters for parties in a cantonal government (cf. also Vatter and Freitag 2002, 63; data source for our purposes: BFS 2015).

As further control variables we shall use various socio-demographic, economic, cultural and structural indicators. To capture modernisation and market failure (Wagner 1958 [1883]; Verner 1979), we assess urbanisation and unemployment (cf. Schmidt 2000, 23; Kellermann 2007, 48; Schaltegger 2001, 4). To measure those aspects of political culture potentially related to more demand for state intervention (Schmidt 2000, 30; Davis and Robinson 1999; Loughlin 2001), we assess the share of Catholics and German-speakers (Stadler 1996; Zürcher 2006; von der Weid, Bernhard and Jeanneret 2002, 63–65; Kriesi et al. 1996; Linder et al. 2008). To assess party competition and power resources (Schmidt 2000, 25–27; Schmidt 1996), we measure the strength of left-wing parties and trade unions (cf. Hibbs 1977; Schmidt

1996; Wagschal 2005, 38), because to (re)distribute across social strata is politically desirable for them and their electorate or members. To assess mobility and demographic structure, we measure the share of residents above 65 years, the share of pupils in secondary education, the share of social benefit recipients and real median income (cf. also Funk and Gathmann 2011, 1260). Finally, to control for the impact of changing macro-economic conditions (Schmidt 1996, 167), we measure the performance of a canton using total federal corporate tax yield per canton, divided by that canton's population, for each year of our analysis.⁷

For unemployment and urbanisation, the share of Catholics and French-speakers, the strength of left-wing parties in cantonal parliaments (rather than in cantonal governments, since it is the overall strength of parties and not so much the number of government seats that the theory highlights), socio-demographics and federal tax yield we rely on data from the Federal Statistics Office (BFS 2015). To measure the strength of trade unions, we rely once more on data by Schaub and Dlabac (2012) (cf. also Vatter and Freitag 2002, 63) while income data is gathered from federal income tax statistics (Schaltegger and Gorgas 2011). Further details on each variable, its measurement, sources and summary statistics are listed in the Data Annex.

3.2 Method

To test which of the aforementioned explanations and specifications best matches the empirical reality of the Swiss cantons as 26 unit-independent cases, we estimate time-series cross-sectional (TSCS) models since our units are canton-years. We have checked that our time series is stationary using the Augmented-Dickey-Fuller Unit Root Test. Models are estimated using the R-package "panelAR". The package estimates linear models on panel data structures in the presence of AR(1)-type autocorrelation that are addressed via a two-step Prais-Winsten feasible generalized least squares procedure, allowing for common correlation coefficients across all panels (Kashin 2014), and panel-corrected standard errors that are

robust to both heteroskedasticity and contemporaneous correlation across panels. Such panel-corrected standard errors (PCSEs) allow for more valid significance estimations. Note that this method of estimating is rather conservative, hence if significant correlations are obtained these can be accepted with even more confidence than if another method had been chosen.⁸

4 Findings

Table 2 displays the results of our 9 TSCS models. For each dependent variable, we first include overall decentralisation and all controls (model 1); then the three dimensions of decentralisation and all controls (model 2); and finally, in model 3, the three dimensions of decentralisation plus all control variables with a generalised variance-inflation factor (GVIF) below 5 in any of the first two models.⁹ The different number of cases (487 instead of 520) is due to missing values for some variables (cf. Data Annex). Additionally, to avoid “collider bias”, that is collinearity between the independent variables – which is expected, since each forms one dimension of the same overarching concept – Table A5 provides for a step-by-step inclusion.¹⁰

--- Table 2 ---

We can see that *overall decentralisation* (the mean of the standardised values of polity-, policy- and politics-decentralisation) has an effect on all three types of spending. What is more, this effect is strongly significant: the more a cantonal political system is decentralised overall, the lower its *total and central* per capita expenditure, controlling for several other institutional, socio-economic, cultural and political variables. The effect of overall decentralisation on *local* expenditure, on the other hand, is significantly positive (see also Table A5). However, as we turn to decentralisation’s three dimensions, the picture becomes more varied.

For *policy*-decentralisation, a concept that most closely resembles the standard way decentralisation is measured to test the “Leviathan-hypothesis”, the hypothesised negative effect on both total (model T3) and central (model C3) expenditure can indeed be shown to exist. In other words, as the revenue and administrative capacity of local governments increases, central government spending decreases to such an extent that this also leads to an overall decrease in spending. This finding withstands the inclusion of various controls and is robust to both outlier analyses (not shown) and step-by-step inclusion to account for collinearity between the independent variables (Table A5). As expected, policy-decentralisation also has a positive effect on local spending (model L3).

That pattern is almost the same for *polity*-decentralisation, which measures the degree of constitutional and perceived local autonomy. Such a type of decentralisation equally decreases central and total spending, but does not seem to affect local spending: the correlation coefficient in model L3 is negative, yet fails to reach statistical significance (see also Table A5). In other words, a locally perceived and constitutionally codified ability to deviate from cantonal standards has the expected (H2a) negative effect on central spending – local freedom in this sense breeds both central and overall efficiency.

The most interesting to highlight, however, are the results for *politics*-decentralisation, i.e. the extent to which political processes and actors are organised locally rather than centrally. Here, the effect is *positive* and significant for cantonal spending. What is more, the effect of politics-decentralisation on local spending is *negative* – hence, we are quite possibly witnessing a deliberate shift of the most costly policies (health, welfare, education) from the local to the cantonal level.¹¹ A look at Table A5 confirms that in seven out of eight cases, politics-decentralisation has a positive effect on cantonal and a negative effect on local spending (but a significant effect on total spending only in one out of four cases, when included with polity-decentralisation).

What this means is that where mayors are directly represented in cantonal parliaments; where parties select their candidates for cantonal parliamentary elections at the very local level (in matching the constituencies); and where local governments *qua* local governments can make use of direct-democratic instruments to veto cantonal decisions; there the cantonal level can be brought to spend more rather than less. The interpretation of this finding would argue that this is so because local political actors are strategically interested in shifting costs “upwards”, to the cantonal level, so that their own polities appear to be in better fiscal shape than if they had to spend the money from their own budgets – and raise their own, local taxes correspondingly (Horber-Papazian and Soguel 1996). The result is a sort of state capture from below.

--- Table 3 ---

In assessing the relative impact of each of the three dimensions, we can see from Table 3 that in each column overall decentralisation has the biggest effect; that policy-decentralisation clearly tops the other two as regards central and local spending; and that politics-decentralisation is almost as important as policy-decentralisation with regards to cantonal spending – but in the opposite direction, that is leading to more rather than less spending. Of the remaining significant effects, the strongest impact is that by polity-decentralisation on total spending and by politics-decentralisation on local spending, both in a negative direction.

Turning to our control variables, the debt break has a strong curbing effect on all three types of spending, which is in line with previous findings (e.g. Vatter & Freitag 2007, 365). Unemployment, urbanisation, and federal corporate tax yield (our measure of economic performance) all have positive and significant effects on both central and total spending.¹² Whether a canton has a catholic majority also matters for total spending, seemingly disconfirming Catholic-inspired statism (cf. Davis and Robinson 1999). Local spending, in

turn, seems to be positively driven by consensual politics (Vatter 2014) and negatively by the age structure. Finally, all three types of spending are also driven by language, which however had to be excluded from models 3 because of collinearity problems. Only inconsistent effects can be discerned as regards education, left-wing parties, and the strength of trade unions.

5 Discussion and Conclusion

What explains why some governments spend more than others? This study has centred on decentralisation as a key institutional variable to understand why this is the case. Overall, we have been able to confirm the “Leviathan hypothesis” with new, original data at the Swiss sub-national level: where there is overall decentralisation, there is less government. And this despite controlling for a number of other institutionalist as well as socio-economic, cultural and partisan factors. The commonly hypothesised effects of unemployment, urbanisation, income, demographics, political culture and direct democracy have also more or less been found in our data on 20 years of cantonal, local and total public expenditure.

However, that overall picture becomes more complex – and interesting – once we look at different types of decentralisation. The availability and careful combination of fine-grained fiscal, administrative, constitutional, electoral, direct-democratic, parliamentary, party-politics and survey data has enabled us to conceptualise and measure three different types of decentralisation. For each dimension, we hypothesised and found different effects: *policy*-decentralisation, that is the extent to which revenues and administrative staff are local rather than central, has the clearest negative effect on central and total public spending while boosting local spending. *Polity*-decentralisation, which pertains to constitutional freedom and local perceptions thereof, also reduces the size of the central and total state sector. However, for *politics*-decentralisation, which captures the strength of local political influence at central

level, we have shown a positive relation to exist with central expenditure and a negative effect on local spending.

The significance of these findings beyond the Swiss case is that decentralisation does not equal decentralisation. If the availability of tax-raising and administrative power is referred to (*policy-decentralisation*), a straightforward competition logic was shown to happen. The ensuing “race to the bottom” means that public services are provided at a level deemed optimal by both decision-makers and consumers alike, since ideally these two overlap. If local autonomy refers to constitutionally guaranteed self-rule (*polity-decentralisation*), then that link is less straightforward, especially as regards local spending. A possible reason being that the same degree of local autonomy can be used for different purposes depending on dynamics taking place *within* the local entities. Finally, if by decentralisation we mean *political* aspects such as the extent to which political actors (parties, mayors) and processes (elections, direct democracy) function locally rather than centrally, more power at the lower level can mean more burdens placed on the higher level. In fact, the lower institutional echelons may try to delegate the provision of expensive and/or new public services to higher levels whilst maintaining all of their decisional capacities (Horber-Papazian and Soguel 1996).

This last phenomenon is what we refer to as state capture from below. Its reasoning draws partly on Greve’s (2012) notion of “cartel federalism” and the observation that were the US states to draw up the federal constitution and not individual citizens, they would try “not to discipline Leviathan but to empower government” (p. 178). As “revenue maximizers” (ibid., 189), sub-national governments are interested in federal transfers as much as in broadening their own sources of income. Consistent with this is the observation that the Swiss Association of Cities has repeatedly called for a revision to the federal equalisation scheme introduced in 2008 to channel more funds to the urban regions as opposed to the

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2
3 countryside.¹³ What is more, to better lobby for their financial interests at both cantonal and
4
5 national levels, cities even created a special Conference of Urban Finance Ministers, in
6
7 August 2014.¹⁴ But local governments also function as a break to further expenditure, as
8
9 when 19 municipalities in Canton Grisons challenged a reform of the intra-cantonal
10
11 equalisation scheme that, since it eventually passed, increased central spending – as well as
12
13 their own contributions.¹⁵
14
15

16
17 For further research into both territorial politics and public finance, this signifies, firstly, that
18
19 a more nuanced understanding (and measurement) of decentralisation is worth pursuing, since
20
21 not all types of decentralisation lead to the same outcome. Overcoming the divide between
22
23 federalism and decentralisation studies is also necessary if all three dimensions of collective
24
25 decision making – policy, polity, and politics – are to be included: there is nothing, neither at
26
27 the conceptual nor theoretical level, that would justify treating local-cantonal relations as
28
29 *prima facie* different from regional-national or local-national relations. Nevertheless, while it
30
31 is quite plausible to think that well organised local or regional actors are able to block policy
32
33 changes that burden them with excessive costs but are quite happy to support policies paid for
34
35 by the central state alone, this finding would of course have to be verified using more
36
37 qualitative data, such as structured-focused comparisons or process tracing, and for other
38
39 contexts.
40
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42

43
44 A second point of reflection concerns possible interaction effects, which we have alluded to
45
46 above. In fact, exercising influence at the central level may require a certain minimum degree
47
48 of self-rule for actors to be taken seriously. In the same vein, local discretion over the level of
49
50 public service delivery remains symbolic if most of the revenue stems from earmarked
51
52 transfers. These mutual conditioning effects are somehow controlled for by our sub-national
53
54 research design: all Swiss municipalities can levy at least some taxes autonomously; all have
55
56 some basic legal protection (Art. 50.1 of the Federal Constitution); and almost everywhere do
57
58
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we find local party sections, mayors in cantonal parliaments, and local government associations. Nevertheless, future studies ought to theorise and test possible interaction effects more explicitly.

Hence, while Switzerland may be unique in the scope of autonomy accorded to both cantonal and local polities and its extremely non-centralised politics, this study has profited from this fact by comparing the 26 cantons as unit-independent political systems. And despite these limitations, the above cited evidence on Latin America, Canada, the US and Germany is broadly consistent with our conclusions that fiscal decentralisation hampers general government growth while political decentralisation favours increased central spending. We would expect these conclusions to apply to other federal political systems, too. There are, on the one hand, many regions within federal systems that similarly accord their local governments autonomy and influence over public policy. The German *Länder*, for example, are equally likely to fall prey to capture from below as are the Swiss cantons. On the other hand, the mentioned “overfishing of the pool” (Rodden 2006, 6) might also travel to the national and even European level, as when the Canadian provinces bargain with Ottawa (Simeon 1972) or when regions open embassies in Brussels (Callanan & Tatham 2014) to influence “Who Gets What from Whom” (Schneider 2006). It is, however, unlikely that local governments or even regions without any constitutionally protected autonomy and/or a minimum level of fiscal autonomy are able to systematically exercise meaningful influence at higher levels.

A further avenue for future research might also be to distinguish between the effects for spatial, non-spatial, identity and welfare policies (Braun 2000b; Wälti and Bullinger 2000), rather than overall spending. Here, one could assume the absence of territorial effects for non-spatial policies, unless coupled with the defence of territorially concentrated minorities, and take into account the ideological orientation and socio-economic attributes of lower-level

entities themselves. Also, the effects of politics-decentralisation should be strongest for distributive policies from which all lower-entities eventually profit. Here again, a distinction of types of decentralisation might prove useful, for once given (symbolic?) institutional autonomy, some lower-level entities might be quite happy to renounce on fiscal capacity, while others might be more pressed for being able to raise money at the expense of constitutional guarantees, and a third group (e.g. cities) might be most inclined towards shifting costs upwards, regardless of both the politics of symbols and own-source income.

To conclude, the wider implication of our study is that the balance between self-rule and shared rule has implications also for the size of the overall political system. Decentralisation, like many social science concepts, contains multiple dimensions. What our study has found is that political influence and local autonomy (both legal and fiscal) may have contradictory effects, with the former boosting but the latter reducing government spending.

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Endnotes

¹ A further difficulty is terminological (Rodden 2006, 24), with decentralisation either referring to a sub-dimension of federalism (e.g. Watts 2008) or, alternatively, its synonym (e.g. Riker 1964). While it would probably be more correct to speak of “non-centralisation” (Elazar 1987, 34), that term is not widely used. Hence, because the literature on fiscal federalism essentially deals with expenditure and revenue decentralisation (e.g. Rodden 2003a, 697), we will use this term even when referring to the political and institutional dimensions of the vertical division of power that others have labelled “cartel federalism” (Greve 2012, 4) or “shared rule” (Elazar 1987; Hooghe et al. 2010).

² We also specified multilevel models with year-fixed effects that do not demean the dependent variable in this way, which did not substantially alter our results (see also endnote 8).

³ Data are from BADAC (2012). Cronbach’s alpha for fiscal, personnel and administrative decentralisation is .813; if run with the four indicators individually, it is .880 (both times N =

26). We omit expenditure decentralisation to avoid endogeneity problems with our dependent variable, but our results do not change if this indicator is included.

⁴ In these surveys, the secretaries of local governments, considered experts on everything local, were asked to rate the extent of local autonomy from 1 (no autonomy) to 10 (very high autonomy). $N(\text{GSB}_{1994}) = 1,549$; $N(\text{GSB}_{2005}) = 2,003$; $N(\text{GSB}_{2009}) = 1,317$ (cf. also Data Annex). Cronbach's alpha for the four measures, "Giacometti Index", "GSB₁₉₉₄", "GSB₂₀₀₅" and "GSB₂₀₀₉", is a high .885 ($N = 26$).

⁵ Although it may seem counter-intuitive at first sight to code the presence of prefects as an instance of *decentralisation*, in the Swiss context this makes sense since in many cantons prefects are elected locally, in their districts, and thus also function as bottom-up channels for influence.

⁶ Cronbach's alpha = .682 (three items), see also Table A2. Alternatively, we have run a factor analysis, where it was specified that only one component should be extracted, but the results of all subsequent analysis do not change if these factor scores are used in place of the much more intuitive and transparent aggregate.

⁷ Unfortunaley, cantonal GDP data are only available from 2008 onwards, and for reasons of tax autonomy, cantonal income tax yield is not directly comparable, especially not if we want to capture economic conditions. Hence, in reyling on federal tax yield, we assess the economic *potential* of a canton, thus loosely applying the official method used for fiscal equalisation across Switzerland since 2008. Data are available for legal entities and natural persons separately. However, for natural persons some data are missing for some cantons in some years. This is why rely on the data for legal entities. However, our results do not change if we use the tax yield from natural persons instead.

⁸ Alternatively, we have calculated non-nested multilevel models (cf. Gelman and Hill 2007, 244) and multilevel analyses with year-fixed effects. All of those broadly confirm our findings (detailed results available on request).

⁹ The Variance-Inflation Factor (VIF), or Generalised Variance-Inflation Factor (GVIF) in the presence of variables with more than one degree of freedom (the debt-break, in our case), measures the extent to which the impact of one variable (more particularly, the variance of its coefficient) is inflated because of multicollinearity.

¹⁰ We thank the anonymous reviewer of the *Journal of Public Policy* for this advice.

¹¹ This central finding is robust to the use of other models (see endnote 8) and to using absolute rather than mean-corrected values of spending (see endnote 2).

¹² In a broader sense, our empirical results thus seem to be in line with Wasserfallen's (2014) findings that Swiss cantons compete more strongly with their competitors the closer a canton is located to an urban region with a comprehensive set of public goods on offer.

¹³ Cf. *Neue Zürcher Zeitung* of 19 August 2010, p. 11, and of 25 January 2011, p. 11, as well as, most recently, the press release of the Association of Swiss Cities of 27 June 2014, at http://staedteverband.ch/cmsfiles/140627_mm_nfa-vn.pdf [12.5.2015].

¹⁴ Cf. *Neue Zürcher Zeitung* of 23 August 2014, p. 12, and Art. 2(1) of the Conference's bylaws at http://ksfd.ch/cmsfiles/statuten_ksfd_def.pdf [12.5.2015].

¹⁵ Cf. *Neue Zürcher Zeitung* of 23 September 2014, p. 13, and of 29 September 2014, p. 9. A similar use of direct-democratic means by local governments can be observed in Zurich (2010 and 2015) and Solothurn (2004 and 2014), for example (cf. also Mueller 2014).

Figures and Tables

Figure 1: Conceptual structure of cantonal decentralisation

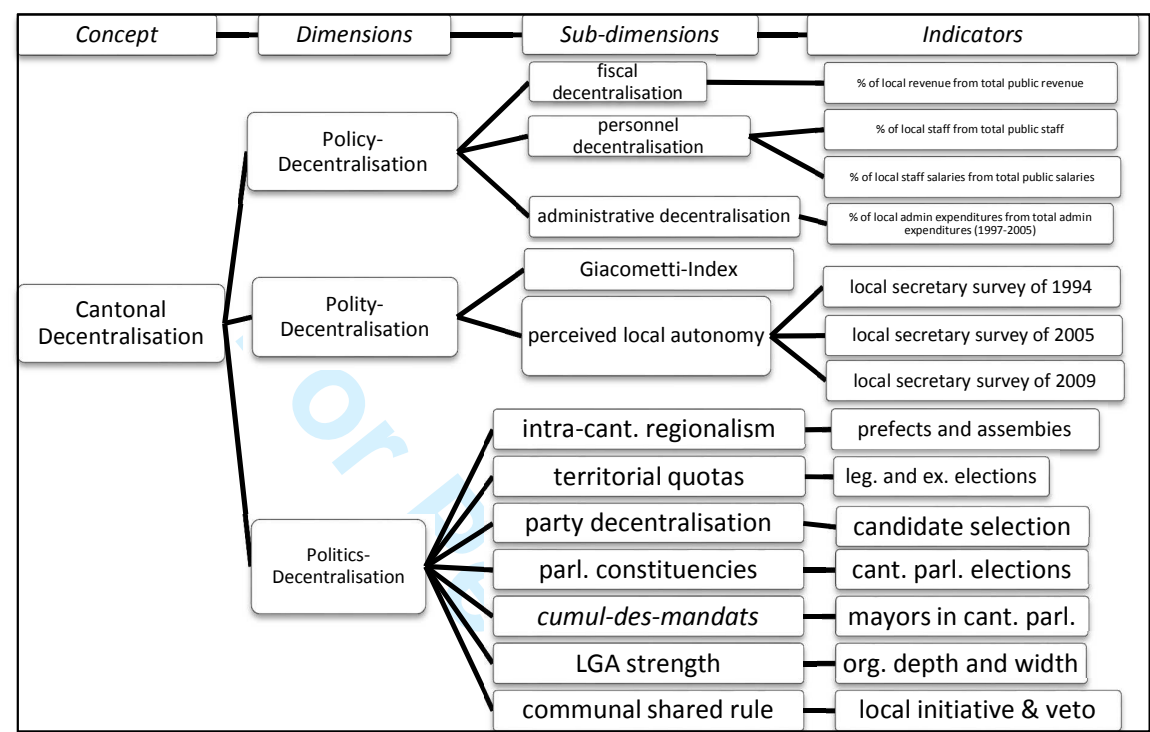


Table 1: Expected impact of decentralisation on spending

Decentralisation	Government size		
	Cantonal spending	Local spending	Total spending
Policy	(-)	(+)	- [H1]
Polity	- [H2a]	+ [H2b]	?
Politics	+ [H3b]	?	- [H3a]

Note: “+” = positive, “-“ = negative influence expected; secondary hypotheses in brackets;
“?” = no relationship specified *ex ante*.

Table 2: Results of TSCS models

	DV1: Cantonal spending, 1990–2009			DV2: Local spending, 1990–2009			DV2: Total spending, 1990–2009		
	Model C1	Model C2	Model C3	Model L1	Model L2	Model L3	Model T1	Model T2	Model T3
<i>Intercept</i>	-2634.95	-853.66	-2490.95	2651.70***	1604.52**	386.95	-616.82	1005.48	-2132.76
	-2734.4	-2112.14	-1726.89	-715.65	-653.74	-583.22	-2699.49	-2287.13	-1971.1
<i>Decentralisation</i>	-2283.73***			950.61***			-1347.56***		
	-316.43			-144.13			-323.34		
<i>Policy-dimension</i>		-1445.62***	-1402.93***		692.08***	640.47***		-752.33***	-831.86***
		-181.35	-170.83		-73.47	-67.43		-163.16	-157.55
<i>Polity-dimension</i>		-749.46***	-597.31**		49.97	-38.59		-704.57**	-610.67***
		-287.45	-238.75		-84.23	-72.93		-296.07	-225.77
<i>Politics-dimension</i>		745.49***	576.83***		42.22	-218.22***		778.95***	279.63
		-212.2	-221.04		-114.41	-66.92		-255.11	-200.08
<i>Control variables</i>									
<i>Direct democracy</i>	71.55	-456.51**		-480.30***	-397.57***		-309.95	-822.37***	
	-231.13	-197.84		-117.81	-116.77		-232.97	-256.06	
<i>Weak debt break_{t-1}</i>	136.91	193.32	175.97	205.02*	290.23**	341.91***	338.48	413.96	541.25**
	-185.41	-209.06	-200.97	-118.43	-122.17	-127.3	-240.37	-262.63	-274.74
<i>Moderate debt break_{t-1}</i>	-210.98	-153.04	-128.85	-39.84	-105.5	-188.05**	-341.81	-247.32	-379.12*
	-235.29	-193.27	-189.21	-99.97	-87.97	-83.14	-226.59	-203.32	-199.97
<i>Strong debt break_{t-1}</i>	-68.71	-798.49**	-677.75**	-569.43***	-454.98***	-265.83*	-664.11*	-1174.17***	-1019.00***
	-258.19	-352.91	-319.56	-176.04	-147.01	-140.65	-344.45	-371.8	-317.31
<i>Government coalition</i>	-0.02	-4.34	-4.04	5.64**	7.69***	7.32***	5.18	2.99	3.06
	-5.19	-5.78	-5.49	-2.59	-2.64	-2.65	-5.56	-5.85	-5.79
<i>Urbanisation</i>	59.26***	72.69***	79.1***	-2.66	-7.38***		56.57***	66.92***	71.40***
	-20.88	-15.23	-14.94	-3.48	-2.86		-19.98	-16.34	-14.27
<i>Unemployment</i>	32.66*	37.87**	34.81**	0.58	-1.96	1.61	33.07*	36.47**	37.32**

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	-18.06	-15.86	-15.37	-6.76	-6.42	-6.87	-17.41	-16.51	-16.57
<i>Catholic canton (dummy)</i>	508.13	63.75		-588.48***	-335.66***	-110.58	-61.7	-285.71	-385.46*
	-442.96	-295.9		-150.91	-123.15	-109.08	-429.32	-325.36	-206.81
<i>German-speaking (dummy)</i>	1829.28***	1507.79***		-552.08**	-202.18		1087.06	1289.83*	
	-691	-559.52		-273.35	-253.91		-666.78	-665.01	
<i>Left-wing parties</i>	-3.08	-9.76		4.19	5.85	2.66	-0.43	-3.04	
	-17.38	-17.58		-5.38	-5.07	-5.21	-17.62	-17.57	
<i>Trade unions</i>	35.58*	27.22	11.69	0.96	4.35	7.37	33.94	30.84	19.1
	-20.82	-18.41	-18.04	-8.62	-7.16	-7.15	-21.73	-20.16	-18.48
<i>Age</i>	186.42**	70.28	89.72	-70.57**	-29.31	-51.86**	127.15	45.91	31.28
	-80.92	-58.41	-60.38	-27.83	-21.59	-24.5	-86.55	-72.75	-74.86
<i>Education</i>	-1003.8***	-444.57*	-283.15	172.94*	38.31	-74.28	-793.08**	-479.45*	-232.78
	-277.65	-258.72	-251.46	-100.67	-84.03	-75.67	-280.96	-267.21	-253.31
<i>Social benefits</i>	212.86	169.23		-150.84*	-112.89*		84.68	43.79	
	-177.1	-143.9		-79.05	-67.18		-163.62	-140.22	
<i>Median income</i>	-37.96*	-4.06	-0.3	12.85	8.28	-0.23	-23.08	-0.45	2.99
	-19.83	-20.73	-18.91	-8.76	-7.91	-7.91	-21.44	-22.35	-20.76
<i>Federal Tax Yield</i>	0.12*	0.12*	0.12*	0	0.01	0.01	0.13*	0.12*	0.14*
	-0.07	-0.07	-0.06	-0.03	-0.02	-0.02	-0.07	-0.07	-0.07
<i>R²</i>	0.27	0.46	0.42	0.22	0.42	0.33	0.21	0.31	0.32
<i>Rho</i>	0.91	0.84	0.86	0.88	0.82	0.85	0.9	0.86	0.84
<i>No. of observations</i>	487	487	487	487	487	487	487	487	487

Note: non-standardised regression coefficients, standard errors in brackets. *p<.1, **p<.05, ***p<.01. For GVIF-values, see Table A6.

Table 3: Relative impact of decentralisation on spending

Decentralisation	Government size		
	<i>Cantonal spending</i>	<i>Local spending</i>	<i>Total spending</i>
<i>Overall decentralisation</i>	-0.515***	0.582***	-0.347***
<i>Policy</i>	-0.428***	0.531***	-0.290***
<i>Polity</i>	-0.169**	-0.030	-0.197***
<i>Politics</i>	0.167***	-0.172***	0.092

Note: Entries are the standardized Beta-coefficients from models 1 (for overall decentralisation) and 3 (for its three dimensions) of Table 2. *p<.1, **p<.05, ***p<.01

Data Annex

Table A1: Two factor analyses for politics-decentralisation

Measure	Three-Components Solution			Single-Component Solution
	1	2	3	
LG constituencies	0.794	0.293	-0.281	0.832
Regionalism	0.727	-0.081	0.195	0.371
Strength of LGAs	-0.640	-0.085	0.574	-0.709
Direct democracy	-0.116	0.818	-0.069	0.457
Mayor MCPs	0.159	0.750	-0.204	0.654
Party decentralisation	0.493	0.619	0.120	0.677
Territorial quotas	0.054	-0.107	0.884	-0.366

Note: Principal component analysis, rotation using the Varimax Kaiser Normalisation method (converged in five iterations). Bartlett’s Test of Sphericity: $\chi^2 = 39.793$ ($p < .01$).

Table A2: Factor analysis for overall decentralisation

Indicators	Components		
	1	2	3
fiscal decentralisation (2005/2008)	-.085	.936	-.092
personnel decentralisation (2008)	.407	.792	.079
administrative decentralisation (1997–2003)	-.213	.863	.012
Giacometti-index	.747	.298	.353
perceived local autonomy (1994, 2005, and 2009)	.885	.173	-.069
regionalism index (2011)	.478	.003	-.102
types of territorial quotas (2011)	-.080	.219	-.551
party decentralisation (2011)	.507	.614	.292
constituency index	.824	-.084	.274
Mayor MCPs (2011)	.249	.168	.696
strength of LG Associations (2011)	-.768	.331	-.258
direct-democratic decentralisation (2011)	-.095	.127	.827

Note: Principal component analysis, rotation using the Varimax Kaiser Normalisation method (converged in four iterations). Bartlett’s Test of Sphericity: $\chi^2 = 162.665$ ($p < .01$)

Table A3: Variable description

Variable	Operationalisation	Data source
Expenditure	Own calculations based on absolute capital expenditures divided by the permanent resident population, less the annual mean of all cantons that year. Data for cantonal, local and total (=cantonal + local) expenditure.	Federal Finance Administration and Federal Office for Statistics
Decentralisation	Own calculations for the Policy-, Polity- and Politics-dimension: <u>Policy-Dimension</u> : Local governments' share of the public money raised and administered within a canton (on annual basis). <u>Polity-Dimension</u> : Index of Giacometti (1941, for 1990 to 2009) and local government secretary survey results (<i>Gemeindeschreiberbefragung</i> , GSB) of 1994 (for 1990 to 1999), 2005 (for 2000 to 2005) and 2009 (for 2006 to 2009). <u>Politics-Dimension</u> : Index including cantonal political party organisation, regionalism, territorial quotas, electoral system organisation, direct representation of mayors in cantonal parliaments, the organisational strength of local government organisations, and the existence of direct-democratic instruments for local governments (cf. Mueller 2011, 2014, and 2015). <i>For all dimensions we calculated z-standardized values. The mean of those three values equals the overall value for the variable "Decentralisation".</i>	BADAC (2012), Giacometti (1941), GSB (1994, 2005 and 2009), cantonal party statutes, cantonal constitutions and electoral laws, cantonal parliamentary websites, and cantonal local government association websites.
Direct democracy	Index of Stutzer (1999) with mean values from 1990 to 1999 and 2000 to 2009 for the following four dimensions: the right to launch a legislative initiative, the right to launch a constitutional initiative, the right to veto a legislative initiative, and the right to veto a financial decision. Scale: 1 = few direct-democratic rights, 6 = extended direct-democratic rights. The overall index equals the mean of the values for the four dimensions.	Schaub and Dlabac (2012)
Debt break	Index of Feld and Kirchgässner (2008). Scale: 0 = no debt break, 1 = weak debt break, 2 = moderate debt break, 3 = strong debt break.	Lüchinger and Schaltegger (2013: 789-790; 804); Chatagny (2013: 34); Stalder and Röhrs (2005: 28-30).
Government coalition	Own calculations based on the vote share of the parties in government. For cantons <i>Uri</i> , <i>Graubünden</i> and <i>Appenzell-Auserrhoden</i> , we rely on the percentage of seats in parliament, as data to the vote share are unavailable. <i>Appenzell-Innerrhoden</i> is excluded because it has too peculiar a system.	Federal Office for Statistics / Année Politique Suisse, several years.
Urbanisation	Percentage of urban population	Federal Office for Statistics
Unemployment	Unemployment rate	State Secretariat for Economic Affairs and Federal Office for Statistics
Catholic	Indicates whether canton has 1 = majority that is Catholic, 0 otherwise	Federal Office for Statistics
German-speaking	Indicates whether canton has 1 = majority that is German-speaking, 0 otherwise	Federal Office for Statistics
Left-wing parties	Own calculations based on the share of seats in the cantonal parliament of the following parties: Social-Democratic Party, Green party, Labour Party [formerly Communist Party], other small left parties. No data are available for the canton of <i>Appenzell-Innerrhoden</i> from 1990 to 2009 and for the canton of <i>Appenzell-Auserrhoden</i> from 1999 to 2002.	Federal Office for Statistics / Année Politique Suisse, several years.
Trade unions	Share of members of trade unions of the working population.	Schaub and Dlabac (2012)
Age	Percentage of residents who are above 65 years old	Federal Office for Statistics
Education	Share of people in secondary education; data are available for the time period from 1999 to 2009, for the other years mean values were used. No data are	Federal Office for Statistics

	available for the canton of <i>Appenzell-Innerrhoden</i> from 1990 to 2009.	
Social benefits	Share of people receiving social benefits; data are available for the time period from 2005 to 2009, for the other years mean values were used.	Federal Office for Statistics
Median income	Median income of cantonal residents (real)	Schaltegger & Gorgas (2011)
Federal Tax Yield	Total annual tax yield from federal corporate taxation by canton, divided by a canton's permanent resident population.	Federal Office for Statistics

Table A4: Summary Statistics

Variable	Min.	Max.	Mean	SD
Cantonal per capita expenditure (mean-corrected)	-4123	17290	0	3074.38
Local per capita expenditure (mean-corrected)	-3456	3285	0	1168.74
Total per capita expenditure (mean-corrected)	-4073	13830	0	2746.8
Overall Decentralisation	-1.83	1.24	0	0.71
Policy-Dimension	-1.81	2.44	0	0.98
Polity-Dimension	-1.96	1.57	0	0.88
Politics-Dimension	-1.88	2.35	0	0.98
Direct democracy	1.74	5.76	4.26	1.17
Debt break	0	3	0.57	1
Government coalition	50.6	100	79.97	10.12
Urbanisation	0	89.27	24.49	19.49
Unemployment	0.03	7.81	2.79	1.7
Catholic canton (dummy)	0	1	0.42	0.49
German-speaking (dummy)	0	1	0.73	0.44
Left-wing parties	6.15	53.08	26.07	11.6
Trade unions	0.83	34.55	9.2	6.35
Age	11.57	22.72	16.22	2.09
Education	1.38	4.26	2.69	0.63
Social benefits	0.8	7.1	2.51	1.43
Median income	43.2	64.67	52.95	4.11
Federal Tax Yield	85.65	10430	827.5	1254.77

Table A5: Results of step-by-step TSCS models

Independent variable(s)	Dependent variable		
	<i>Cantonal spending</i>	<i>Local spending</i>	<i>Total spending</i>
<i>Overall Decentralisation</i>	negative	positive	negative
<i>Policy-Decentralisation</i>	Policy (-)	Policy (+)	Policy (-)
<i>Polity-Decentralisation</i>	Polity (-)	<i>n.s.</i>	Polity (-)
<i>Politics-Decentralisation</i>	Politics (+)	Politics (-)	<i>n.s.</i>
<i>Policy- + Polity-Dec.</i>	Policy (-), Polity (-)	Policy (+), Polity (-)	Policy (-), Polity (-)
<i>Policy- + Politics-Dec.</i>	Policy (-)	Policy (+), Politics (-)	Policy (-)
<i>Polity- + Politics-Dec.</i>	Polity (-), Politics (+)	Politics (-)	Polity (-), Politics (+)
<i>Policy- + Polity- + Politics-Decentralisation</i>	Policy (-), Polity (-), Politics (+)	Policy (+), Politics (-)	Policy (-), Polity (-)

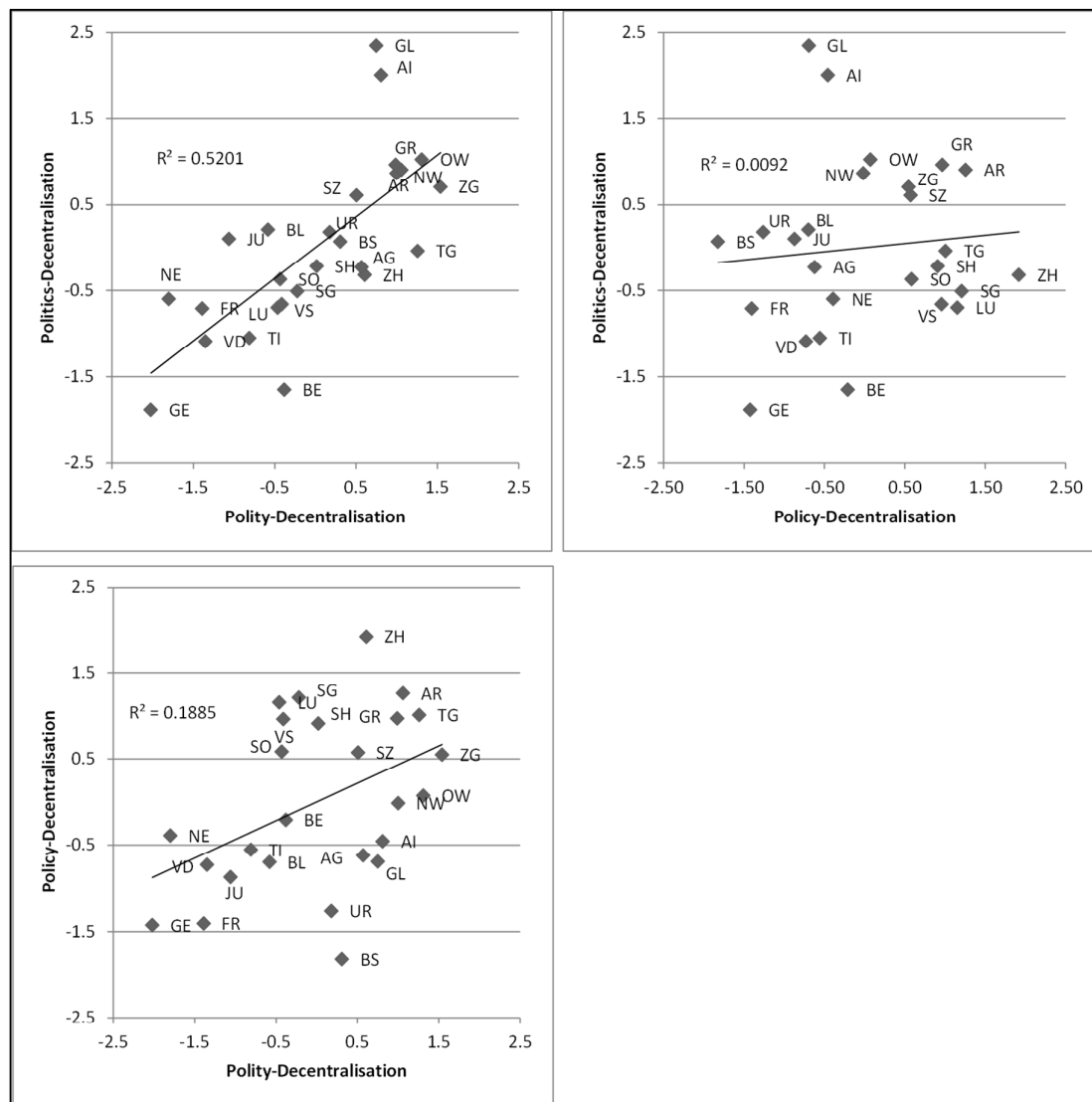
Note: Each cell represents one model to explain mean-corrected public spending between 1990 and 2009, all of which were estimated using the same procedure as for models 3 in Table 2, i.e. incl. all control variables with GVIF < 5. All effects are significant, with “-“ = negative, “+” = positive effect (at least $p < .1$), otherwise omitted or “n.s.” (= not significant).

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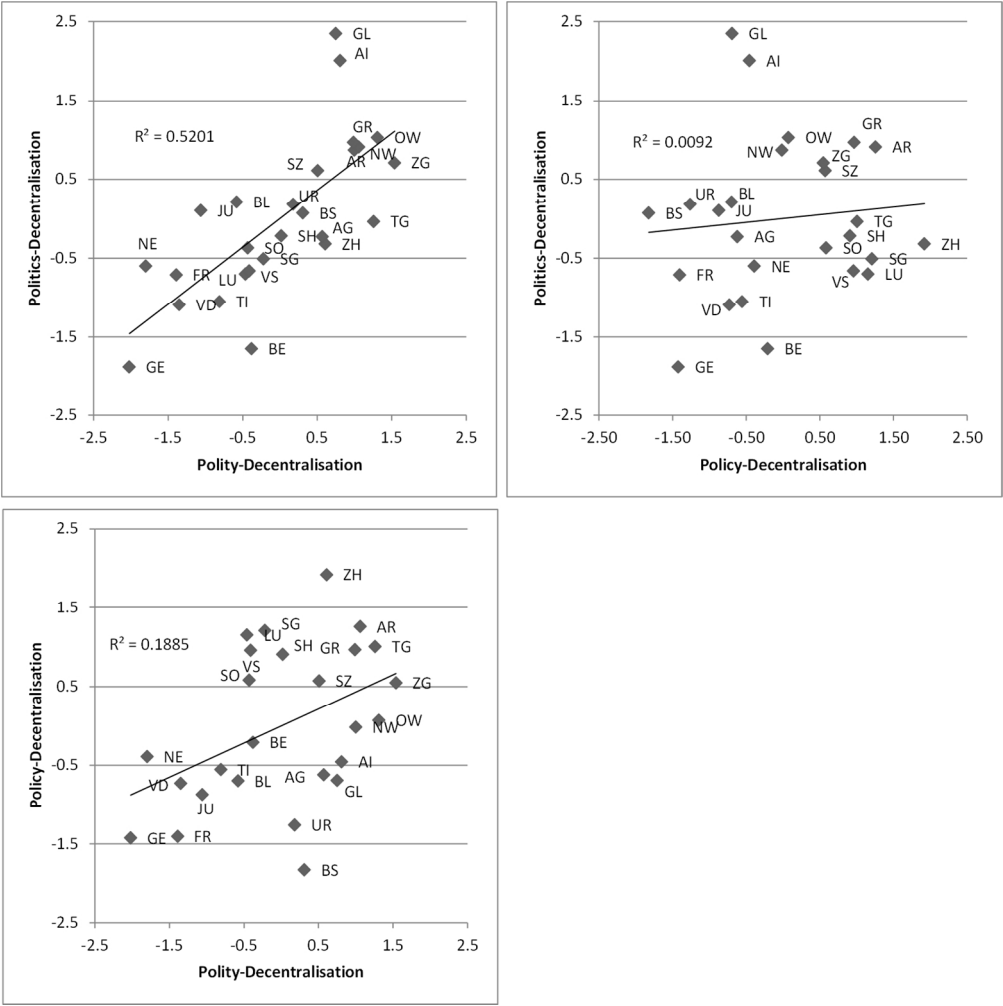
Table A6: Results of TSCS models incl. GVIF-values

	DV1: Cantonal spending, 1990–2009						DV2: Local spending, 1990–2009						DV2: Total spending, 1990–2009					
	Model C1	GVIF	Model C2	GVIF	Model C3	GVIF	Model L1	GVIF	Model L2	GVIF	Model L3	GVIF	Model T1	GVIF	Model T2	GVIF	Model T3	GVIF
Intercept	-2634.95		-853.66		-2490.95		2651.70***		1604.52**		386.95		-616.82		1005.48		-2132.76	
	-2734.4		-2112.14		-1726.89		-715.65		-653.74		-583.22		-2699.49		-2287.13		-1971.1	
Decentralisation	-2283.73***	3.5					950.61***	3.97					-1347.56***	4.21				
	-316.43						-144.13						-323.34					
Policy-dimension			-1445.62***	4.93	-1402.93***	3.43			692.08***	3.22	640.47***	1.89			-752.33***	3.21	-831.86***	3.17
			-181.35		-170.83				-73.47		-67.43				-163.16		-157.55	
Polity-dimension			-749.46***	8.56	-597.31**	4.07			49.97	3.47	-38.59	1.83			-704.57**	8.94	-610.67***	5.42
			-287.45		-238.75				-84.23		-72.93				-296.07		-225.77	
Politics-dimension			745.49***	6.22	576.83***	4.08			42.22	8.6	-218.22***	1.82			778.95***	8.96	279.63	5.18
			-212.2		-221.04				-114.41		-66.92				-255.11		-200.08	
Control variables																		
Direct democracy	71.55	3.81	-456.51**	6.97			-480.30***	6.31	-397.57***	14.58			-309.95	4.57	-822.37***	10.31		
	-231.13		-197.84				-117.81		-116.77				-232.97		-256.06			
Weak debt break _{t-1}	136.91		193.32		175.97		205.02*		290.23***		341.91***		338.48		413.96		541.25**	
	-185.41		-209.06		-200.97		-118.43		-122.17		-127.3		-240.37		-262.63		-274.74	
Moderate debt break _{t-1}	-210.98	2.06	-153.04	4.93	-128.85	2.83	-39.84	2.56	-105.5	3.58	-188.05**	1.82	-341.81	2.13	-247.32	4.07	-379.12*	3.14
	-235.29		-193.27		-189.21		-99.97		-87.97		-83.14		-226.59		-203.32		-199.97	
Strong debt break _{t-1}	-68.71		-798.49**		-677.75**		-569.43***		-454.98***		-265.83*		-664.11*		-1174.17***		-1019.00***	
	-258.19		-352.91		-319.56		-176.04		-147.01		-140.65		-344.45		-371.8		-317.31	
Government coalition	-0.02	1.21	-4.34	1.49	-4.04	1.26	5.64**	1.19	7.69***	1.3	7.32***	1.21	5.18	1.23	2.99	1.4	3.06	1.36
	-5.19		-5.78		-5.49		-2.59		-2.64		-2.65		-5.56		-5.85		-5.79	
Urbanisation	59.26***	2.79	72.69***	4.41	79.1***	3.19	-2.66	2.83	-7.38***	6.06			56.57***	2.86	66.92***	4	71.40***	3.19
	-20.88		-15.23		-14.94		-3.48		-2.86				-19.98		-16.34		-14.27	
Unemployment	32.66*	1.11	37.87**	1.19	34.81**	1.04	0.58	1.11	-1.96	1.14	1.61	1.09	33.07*	1.1	36.47**	1.15	37.32**	1.09
	-18.06		-15.86		-15.37		-6.76		-6.42		-6.87		-17.41		-16.51		-16.57	
Catholic canton (dummy)	508.13	4.8	63.75	5.46			-588.48***	2.16	-335.66***	3.09	-110.58	1.68	-61.7	5.22	-285.71	4.55	-385.46*	2.04
	-442.96		-295.9				-150.91		-123.15		-109.08		-429.32		-325.36		-206.81	
German-speaking (dummy)	1829.28***	4.91	1507.79***	8.88			-552.08**	5.98	-202.18	12.02			1087.06	6.67	1289.83*	10.29		
	-691		-559.52				-273.35		-253.91				-666.78		-665.01			
Left-wing parties	-3.08	3.36	-9.76	8.39			4.19	1.87	5.85	2.66	2.66	1.72	-0.43	3.51	-3.04	6.51		
	-17.38		-17.58				-5.38		-5.07		-5.21		-17.62		-17.57			
Trade unions	35.58*	1.64	27.22	2.56	11.69	1.74	0.96	1.42	4.35	1.99	7.37	1.4	33.94	1.84	30.84	2.31	19.1	1.69
	-20.82		-18.41		-18.04		-8.62		-7.16		-7.15		-21.73		-20.16		-18.48	
Age	186.42**	1.92	70.28	2.28	89.72	1.45	-70.57**	1.62	-29.31	2.7	-51.86**	1.65	127.15	1.97	45.91	2.14	31.28	1.89
	-80.92		-58.41		-60.38		-27.83		-21.59		-24.5		-86.55		-72.75		-74.86	
Education	-1003.8***	2.19	-444.57*	4.88	-283.15	3.17	172.94*	2.24	38.31	4.09	-74.28	1.66	-793.08**	2.27	-479.45*	3.72	-232.78	3.28
	-277.65		-258.72		-251.46		-100.67		-84.03		-75.67		-280.96		-267.21		-253.31	
Social benefits	212.86	4.08	169.23	6.81			-150.84*	4.03	-112.89*	7.18			84.68	3.99	43.79	5.42		
	-177.1		-143.9				-79.05		-67.18				-163.62		-140.22			
Median income	-37.96*	1.59	-4.06	3	-0.3	1.55	12.85	1.33	8.28	1.63	-0.23	1.27	-23.08	1.85	-0.45	2.68	2.99	1.93
	-19.83		-20.73		-18.91		-8.76		-7.91		-7.91		-21.44		-22.35		-20.76	
Federal Tax Yield	0.12*	1.23	0.12*	1.26	0.12*	1.15	0	1.19	0.01	1.32	0.01	1.15	0.13*	1.19	0.12*	1.26	0.14*	1.2
	-0.07		-0.07		-0.06		-0.03		-0.02		-0.02		-0.07		-0.07		-0.07	
R ²	0.27		0.46		0.42		0.22		0.42		0.33		0.21		0.31		0.32	
Rho	0.91		0.84		0.86		0.88		0.82		0.85		0.9		0.86		0.84	
No. of observations	487		487		487		487		487		487		487		487		487	

Note: non-standardised regression coefficients, standard errors in brackets. GVIF = Generalised Variance-Inflation Factors. *p<.1, **p<.05, ***p<.01.

Figure A1: Empirical Distribution of Cantonal Decentralisation Dimensions

Note: Mean values over the entire period are used for the sake of simplicity.



201x202mm (200 x 200 DPI)



	DV1: Cantonal spending, 1990–2009						DV2: Local spending, 1990–2009						DV2: Total spending, 1990–2009					
	Model C1	GVIF	Model C2	GVIF	Model C3	GVIF	Model L1	GVIF	Model L2	GVIF	Model L3	GVIF	Model T1	GVIF	Model T2	GVIF	Model T3	GVIF
Intercept	-2634.95		-853.66		-2490.95		2651.70***		1604.52**		386.95		-616.82		1005.48		-2132.76	
	-2734.4		-2112.14		-1726.89		-715.65		-653.74		-583.22		-2699.49		-2287.13		-1971.1	
Decentralisation	-2283.73***	3.5					950.61***	3.97					-1347.56***	4.21				
	-316.43						-144.13						-323.34					
Policy-dimension			-1445.62***	4.93	-1402.93***	3.43			692.08***	3.22	640.47***	1.89			-752.33***	3.21	-831.86***	3.17
			-181.35		-170.83				-73.47		-67.43				-163.16		-157.55	
Polity-dimension			-749.46***	8.56	-597.31**	4.07			49.97	3.47	-38.59	1.83			-704.57**	8.94	-610.67***	5.42
			-287.45		-238.75				-84.23		-72.93				-296.07		-225.77	
Politics-dimension			745.49***	6.22	576.83***	4.08			42.22	8.6	-218.22***	1.82			778.95***	8.96	279.63	5.18
			-212.2		-221.04				-114.41		-66.92				-255.11		-200.08	
Control variables																		
Direct democracy	71.55	3.81	-456.51**	6.97			-480.30***	6.31	-397.57***	14.58			-309.95	4.57	-822.37***	10.31		
	-231.13		-197.84				-117.81		-116.77				-232.97		-256.06			
Weak debt break _{t-1}	136.91	2.06	193.32	4.93	175.97	2.83	205.02*	2.56	290.23**	3.58	341.91***	1.82	338.48	2.13	413.96	4.07	541.25**	3.14
	-185.41		-209.06		-200.97		-118.43		-122.17		-127.3		-240.37		-262.63		-274.74	
Moderate debt break _{t-1}	-210.98		-153.04		-128.85		-39.84		-105.5		-188.05**		-341.81		-247.32		-379.12*	
	-235.29		-193.27		-189.21		-99.97		-87.97		-83.14		-226.59		-203.32		-199.97	
Strong debt break _{t-1}	-68.71	2.79	-798.49**	4.41	-677.75**	3.19	-569.43***	2.83	-454.98***	6.06	-265.83*		-664.11*	2.86	-1174.17***	4	-1019.00***	3.19
	-258.19		-352.91		-319.56		-176.04		-147.01		-140.65		-344.45		-371.8		-317.31	
Government coalition	-0.02		-4.34		-4.04		5.64**		7.69***		7.32***		5.18		2.99		3.06	
	-5.19		-5.78		-5.49		-2.59		-2.64		-2.65		-5.56		-5.85		-5.79	
Urbanisation	59.26***	1.11	72.69***	1.19	79.1***	1.04	-2.66	1.11	-7.38***	1.14	-7.38***	1.09	56.57***	1.1	66.92***	1.15	71.40***	1.09
	-20.88		-15.23		-14.94		-3.48		-2.86		-6.87		-19.98		-16.34		-14.27	
Unemployment	32.66*	4.8	37.87**	5.46	34.81**		0.58	2.16	-1.96	3.09	1.61	1.68	33.07*	5.22	36.47**	4.55	37.32**	2.04
	-18.06		-15.86		-15.37		-6.76		-6.42		-6.87		-17.41		-16.51		-16.57	
Catholic canton (dummy)	508.13	4.91	63.75	8.88			-588.48***	5.98	-335.66***	12.02	-110.58		-61.7	6.67	-285.71	10.29	-385.46*	
	-442.96		-295.9				-150.91		-202.18		-109.08		-429.32		-325.36		-206.81	
German-speaking (dummy)	1829.28***	3.36	1507.79***	8.39			-552.08**	1.87	-202.18	2.66		1.72	1087.06	3.51	1289.83*	6.51		
	-691		-559.52				-273.35		-253.91				-666.78		-665.01			
Left-wing parties	-3.08	1.64	-9.76	2.56		1.74	4.19	1.42	5.85	1.99	2.66	1.4	-0.43	1.84	-3.04	2.31		1.69
	-17.38		-17.58				-5.38		-5.07		-5.21		-17.62		-17.57			
Trade unions	35.58*	1.92	27.22	2.28	11.69	1.45	0.96	1.62	4.35	2.7	7.37	1.65	33.94	1.97	30.84	2.14	19.1	1.89
	-20.82		-18.41		-18.04		-8.62		-7.16		-7.15		-21.73		-20.16		-18.48	
Age	186.42**	2.19	70.28	4.88	89.72	3.17	-70.57**	2.24	-29.31	4.09	-51.86**	1.66	127.15	2.27	45.91	3.72	31.28	3.28
	-80.92		-58.41		-60.38		-27.83		-21.59		-24.5		-86.55		-72.75		-74.86	
Education	-1003.8***	4.08	-444.57*	6.81	-283.15		172.94*	4.03	38.31	7.18	-74.28		-793.08**	3.99	-479.45*	5.42	-232.78	
	-277.65		-258.72		-251.46		-100.67		-84.03		-75.67		-280.96		-267.21		-253.31	
Social benefits	212.86	1.59	169.23	3		1.55	-150.84*	1.33	-112.89*	1.63		1.27	84.68	1.85	43.79	2.68		1.93
	-177.1		-143.9				-79.05		-67.18				-163.62		-140.22			
Median income	-37.96*	1.23	-4.06	1.26	-0.3	1.15	12.85	1.19	8.28	1.32	-0.23	1.15	-23.08	1.19	-0.45	1.26	2.99	1.2
	-19.83		-20.73		-18.91		-8.76		-7.91		-7.91		-21.44		-22.35		-20.76	
Federal Tax Yield	0.12*	0.27	0.12*	0.46	0.12*	0.42	0	0.42	0.01	0.33	0.01	0.21	0.13*	0.31	0.12*	0.32	0.14*	
	-0.07		-0.07		-0.06		-0.03		-0.02		-0.02		-0.07		-0.07		-0.07	
R ²	0.27		0.46		0.42		0.22		0.42		0.33		0.21		0.31		0.32	
Rho	0.91		0.84		0.86		0.88		0.82		0.85		0.9		0.86		0.84	
No. of observations	487		487		487		487		487		487		487		487		487	

Note: non-standardised regression coefficients, standard errors in brackets. GVIF = Generalised Variance-Inflation Factors. * $p < .1$, ** $p < .05$, *** $p < .01$.