Reforming autonomy?

The fiscal impact of the Swiss federal reform 2008

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Abstract

The Swiss federal reform 2008 (NFA) has been a major undertaking in the recent history of the Swiss federation, with the re-allocation of policy tasks being a key component of the reform. So far, research has focused in particular on the decision-making process of the reform. This paper focuses on the fiscal impacts by asking whether the re-allocation of tasks has changed the vertical distribution of fiscal resources and whether these changes have increased fiscal autonomy of subnational governments. The paper shows that subnational government expenditure as well as non-earmarked federal government grants have increased slightly. At the same time, however, revenue has not increased correspondingly. This has imposed strong limitations on subnational fiscal autonomy and has led to a deterioration rather than an improvement of the situation of subnational governments in federal Switzerland. The paper concludes with lessons on federal reforms and constitutional change in federal states in general.

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Introduction

In recent years, federal reforms have been research subjects of both theoretical and empirical literature. Given the context-sensitivity of institutional changes in federal systems, most studies apply a case-study approach by examining changes of federal institutions either as dependent or as independent variable. Among others, there is much research on the German reforms in 2006 and 2009 (to which *Regional & Federal Studies* devoted the Special Issue 26/5, see e.g., Behnke and Kropp, 2016; Benz, 2016; Kropp and Behnke, 2016), the many reform steps towards a federal state in Belgium (e.g., Arnold and Stadelmann-Steffen, 2017; Deschouwer and Reuchamps, 2013; Goossens and Cannoot, 2015; Swenden and Jans, 2006; Verdonck and Deschouwer, 2003), and constitutional changes in multi-level systems in general (Hooghe et al., 2010, see also Marks et al., 2008; Hooghe et al., 2008, and the country-specific analyses in the *Regional & Federal Studies* Special Issue 18/2-3). Generally, scholars have focused on the decision-making processes, the scope of the final reform contents, and the 'success' of the reforms from an institutional point of view (for the latter see especially Behnke et al., 2011). Only recently have scholars of comparative federalism focused their attention on the fiscal impacts of institutional changes in federal systems, such as the effects of the reorganisation of fiscal equalization in Canada (Béland et al. 2017) or the federalisation in Belgium (Béland and Lecours 2018; Arnold and Stadelmann-Steffen 2017).

In general, we expect federal reforms to decentralize resources rather than centralize them. Nevertheless, a closer look reveals that fiscal impacts may still vary. Theoretically, we can imagine a 2x2 matrix of possible impacts on the fiscal structure. First, fiscal autonomy of subnational governments increases most strongly if a federal reform increases both subnational expenditure and revenue. Second, fiscal autonomy is only partially increased if a federal reform increases subnational expenditure but not revenue (e.g. by the transfer of policy competences), or vice versa (e.g. by increasing subnational tax sources). While the former refers to an increase of policy competences at the subnational level without the corresponding revenue, the second

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refers to an increase of revenue without the corresponding policy competences. Finally, federal reforms can have no fiscal impact at all if legal amendments do not materialize in fiscal figures, neither for expenditure nor for revenue.

Starting from these multiple facets of fiscal effects, this paper investigates the fiscal impacts of the Swiss federal reform 2008 (NFA). The NFA was accepted on 28 November 2004 by a majority of the voters (64.4%) and by 18 cantons and 5 half-cantons (of 23 cantons and 6 half-cantons in total). Four years later, the reform became applicable. The reform package contained a redesign of the Swiss federal system (the letter 'N' stands for the German word '*Neugestaltung*' [redesign]) within two pillars: On the one hand, the NFA aimed at re-organizing the system of fiscal equalization between the cantons (the letter 'F' stands for the German word '*Finanzausgleich*' [fiscal equalization]). On the other hand, the reform aimed at re-allocating policy competences between the federal and cantonal level in order to increase subnational fiscal autonomy and fiscal equivalence (the letter 'A' stands for the German word '*Aufgabenteilung*' [division of tasks]). While the former element has already been subject to several – mainly economical – analyses (Brülhart and Schmidheiny, 2013; Dafflon; Frey and Wettstein, 2008; Schaltegger et al., 2015) there is far less research on the latter. This paper takes a novel approach, using fiscal data for the pre- and post-NFA period to analyse whether and how subnational fiscal autonomy has changed with the reform coming into force. In doing that, the paper goes beyond a mere consideration of the constitutional amendments – which has been the dominant perspective in most studies so far – and examines the fiscal impacts of the re-allocation of policy tasks. While the reorganization of financial equalization (first pillar) has had an impact on the fiscal relations in the horizontal dimension, the re-allocation of tasks (second pillar) is expected to have changed the vertical relationship between the federal government and subnational governments (SNGs).[1] The key question of this paper is thus whether the re-allocation of tasks has affected the vertical distribution of expenditure and revenue and, if yes, whether these changes have increased fiscal autonomy of SNGs.

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To answer this question, I will examine three indicators. A first indicator shows whether the NFA has increased self-financed SNG expenditure (excluding expenditure financed by vertical transfers). As a second indicator, I consider federal government grants and assess whether there has been a shift from earmarked to non-earmarked transfers since the NFA. Finally, as a third indicator, I compare the development of SNG expenditure and revenue to determine whether subnational fiscal autonomy is threatened by fiscal imbalances. The analysis relies on data from the Government Finance Statistics (GFS) of the International Monetary Fund (IMF) and the Fiscal Decentralisation Database of the Organisation for Economic Co-operation and Development (OECD). Methodologically, I combine descriptive statistics with the synthetic control method as an innovative approach to cross-compare Switzerland with other federal OECD states (Abadie et al., 2010, 2011, 2015). The method allows building a synthetic comparison case (a kind of 'twin case') for Switzerland which shows how fiscal autonomy would have changed if the NFA had not been implemented in 2008. The method is especially suited for the analysis at hand, since single case studies always bear the risk of spurious findings that are rather connected to a third, unobserved variable (such as for instance the economic crisis which took place at the same time as the federal reform) than the variable of interest.

The analyses of the three indicators yield the following findings: First, there is an increase of subnational government expenditure, albeit to a very limited extent. Second, we observe an increase of non-earmarked federal government grants at the expense of earmarked grants. These grants, however, account for only a small part of general government expenditure. Finally, a comparison of subnational expenditure and revenue reveals a tendency towards surpluses in expenditure. Hence, while previous research has highlighted the exemplary decision-making process and the system's ability to reform, the study at hand urges caution when it comes to the substantial fiscal impacts of the reform.

The motivation for this empirical case-study is twofold. First, it aims at extending knowledge about the effects of a reform that came into force more than ten years ago. So far, scholars have

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analysed the ratification of the reform (Behnke, 2010; Braun, 2008, 2009; Broschek, 2014; Cappelletti et al., 2013; Wasserfallen, 2015), the relevance of the institutional amendments (Behnke et al., 2011; Benz, 2013a), and the impacts on the horizontal dimension of Swiss federalism with regard to fiscal equalization (Federal Council, 2010, 2014) and inter-cantonal cooperation (Mathys 2015). What is lacking is a systematic analysis of the fiscal impacts on the vertical dimension, taking into account the federal government and the SNGs. Second, this case study aims to stimulate new avenues of research on federal reforms. Vertical fiscal relations – and especially the question of fiscal autonomy of SNGs – are a key characteristic of multi-level systems, which, however, has so far hardly been considered in conjunction with state reforms. Being aware of the limitations of a single case study, the NFA is a prime example of a federal reform aimed at re-balancing power between centre and periphery. As such, it allows me to derive suggestions for future research on federal reforms and constitutional change in federal systems.

The paper is structured as follows: The next section provides an overview of the NFA and findings of previous research on the reform. The research design is set out in section 3 and the findings are presented in section 4. The paper concludes with a discussion of the main findings and an outlook on future research.

The Swiss federal reform 2008

Using the definition of Benz and Colino (2011: 389), a reform is a "deliberate change" which "refers to the occasional conscious redesign of the basic rules of the system affecting its structure or general configuration in terms of powers, representation and resources." As such, it can be distinguished from informal and implicit changes caused by a re-interpretation of existing institutional rules (Bednar, 2013; Benz, 2013a: 728; Benz and Broschek, 2013: 11; Benz and Colino, 2011). The Swiss federal reform 2008, the NFA, can be seen as a prime

example of deliberate change. After more than 10 years of elaboration, the reform was accepted on 28 November 2004 by a majority of the voters (64.4%) and by 18 cantons and 5 half-cantons (of 23 cantons and 6 half-cantons in total). Four years later, the reform entered into force. The NFA was composed as a reform package with two pillars: The first pillar entailed a complete overhaul of the fiscal equalization system. In addition to horizontal equalization payments from richer to poorer cantons, the federal government is to participate in financial equalization through vertical payments. Generally, this first pillar impacts on the relative distribution of resources among cantons but has almost no impact on the vertical distribution of resources between cantons and the federal government. Even though parts of the equalization payments to the 'poorer' cantons are financed by the federal government, the NFA is budget neutral for the federal level as the cantons' share of direct federal taxes was reduced correspondingly (Federal Council, 2014: 34). An small exception is the so-called 'hardship fund': In the course of the final reform negotiations, the cantons succeeded in ensuring that the federal government paid the majority of this fund which aimed at facilitating the transition into the new system for cantons with less resources (Federal Council, 2014: 34; Wasserfallen, 2015: 544).

What matters for the vertical distribution, though, is the second pillar of the reform, namely the re-allocation of competences in various policy areas. In the light of the general goal of 'task disentanglement', the reform transferred seven policy areas – among others the national road network (highways) and defence – to the federal level. The cantons were given full responsibility in ten policy areas, among others special schools, educational grants up until secondary schools, and support for housing and working/day care facilities for people with disabilities (see Table A1 in the Appendix). Furthermore, the reform named nine policy tasks where inter-cantonal cooperation should be preferred to centralized solutions.[2] Finally, 17 policy areas are still considered to be joined tasks, applying, however, a new concept of vertical cooperation: While the strategy in these policy areas continues to be decided on the federal level, the cantons have the operational responsibility. Instead of prescribing the use of each

grant, the cantons now receive a global budget which they can freely dispose of, as long as they fulfil the goals set by contracts between the federal government and each canton (so-called convention programmes) (Federal Council, 2001: 2299; Mathys, 2015).

Generally, the goals of the reform can be summarized as follows (Vatter, 2018: 196–199): The redesign of the fiscal equalization system (first pillar) aimed at diminishing fiscal imbalance between the cantons, maintaining cantonal tax competitiveness, and providing compensation for geo-topographic burdens and socio-demographic conditions. The re-allocation of tasks (second pillar), in turn, focused on the vertical dimension and aimed at strengthening inter-cantonal cooperation and subnational fiscal autonomy.

So far, research on the NFA can broadly be separated into two groups. In the first group, we find both ex-ante and ex-post evaluations of the new fiscal equalization system, conducted by economists (Brülhart and Schmidheiny, 2013; Dafflon; Frey and Wettstein, 2008; Schaltegger et al., 2015) and by the federal government itself (Federal Council, 2010, 2014). Generally, the evaluations conclude that the new system has remedied old deficiencies, although there is still room for improvement. In the second group, political science literature has looked at the decision-making process and the final ratification of the reform package, praising the NFA as a particularly successful reform, especially when compared to similar reform attempts in other federal states such as Germany or Austria (Behnke, 2010; Behnke et al., 2011; Benz, 2013a; Braun, 2008, 2009; Broschek, 2014; Wasserfallen, 2015). Behnke et al. (2011: 458), for instance, praise the reform for its "very detailed agenda" and Benz (2013a) concludes that the reform is viewed as a success by a broad audience.

What research is missing so far is a profound analysis of the vertical fiscal impacts of the reform. While the economic literature has focused on fiscal data on a horizontal dimension (inter-cantonal fiscal equalization), it lacks a systematic assessment of the monetary effects on the vertical dimension.[3] Political science literature, in turn, provides instructive insights into the relevance of the reform for the vertical federal structure from an institutional point of view.

However, it lacks a systematic assessment of the policy impacts beyond the ratification of laws and constitutional articles. This paper fills these research gaps and investigates the impact of the reform on subnational fiscal autonomy, one of the key goals of the re-allocation of policy tasks (second pillar). The next section illustrates the operationalization and the methods used to answer this question.

Research design

In the empirical literature, the general approach to assess vertical fiscal relations in a federal system is to use the concept of fiscal decentralization, hence taking the share of SNG expenditure and/or revenue of total expenditure/revenue of all state levels. The problem with this rather crude measurement is that it is not clear whether SNGs have autonomy over the use of their expenditure or whether they just act as administrative agents to implement national law (Blöchliger and King, 2006; Rodden et al., 2003; Rodden, 2004; Stegarescu, 2005). Without being able to solve this problem completely, there are approaches to consider fiscal decentralization in a more nuanced way. Subnational expenditure can be subdivided by asking how much leeway SNGs have over their use. Instead of simply looking at the share of subnational expenditure, we can thus ask for the degree of fiscal autonomy that SNGs have. Taking subnational fiscal autonomy as dependent variable, we can identify three factors which constitute this variable and translate them into three indicators.

First, subnational fiscal autonomy increases with the share of self-financed SNG expenditure. SNGs have most autonomy over expenditure which is financed by own taxes or shared taxes. Even though national law can still affect decisions about the use of this expenditure, SNGs have substantial autonomy in setting priorities for individual policy areas. Hence, as a first indicator, I look at the impact of the NFA on the *decentralization of self-financed expenditure*, which is measured as follows:

$$= \frac{Total\ SNG\ expenditure - SNG\ expenditure\ financed\ by\ federal\ government\ grants}{Total\ SNG\ expenditure + Total\ federal\ government\ expenditure}$$

I use data from the GFS of the IMF which lists expenditure and revenue for every state level on an annual basis (IMF, 2017).

While SNGs have autonomy over self-financed expenditure, subnational fiscal autonomy can also be increased by federal government grants, namely if earmarked grants are outweighed by non-earmarked grants. While SNGs can use earmarked grants only for specific purposes, they have leeway in the use of non-earmarked grants (Blöchliger and King, 2006: 21). Hence, a second indicator for subnational fiscal autonomy is the *share of non-earmarked grants* of total federal government grants, which is measured as follows:

$$= \frac{Non\text{-}earmarked\ federal\ government\ grants}{Non\text{-}earmarked\ federal\ government\ grants + Earmarked\ federal\ government\ grants}$$

Unfortunately, the GFS provide no information on the type of grants. Thus, for the analysis, I rely on the OECD Fiscal Decentralisation Database. The database informs about the share of earmarked and non-earmarked transfers from 2000 to 2010, at least for a small sample of countries, among others Switzerland.

Third, fiscal autonomy is only guaranteed when revenue is available. As a third indicator, I therefore look at the *subnational mismatch between revenue and expenditure after intergovernmental transfers*.[4] Formally, the indicator is measured as follows:

$$= SNG\ revenue\ (taxes, social\ contributions, grants, other\ revenue) - SNG\ expenditure$$

For revenue, I refer to the official statistics of the IMF, which includes all revenue by taxes, social contributions, grants, and other revenue but excluding borrowing.

Figure 1 summarizes the research design with the three indicators of subnational fiscal autonomy.

++ Figure 1 ++

For the empirical analysis for all three indicators, I use descriptive statistics from 1996 to 2014 to study whether there are changes attributable to the year 2008 – when the NFA became applicable.[5] By using descriptive statistics, however, one must be cautious, since it cannot be ruled out that observed changes in the dependent variable are the result of other unobserved variables. Given that the NFA coincided with the economic crisis 2007-08, one needs to make sure that it was the reform and not the crisis that led to the observed changes. If possible, I will thus supplement the descriptive analysis with a comparison with other federal OECD states, namely Austria, Belgium, Canada, Germany, and the United States.[6] I use the synthetic control method as an innovative tool to counterfactually assess how subnational fiscal autonomy in the Swiss federal system would have evolved without the entry into force of the NFA in 2008.[7] The synthetic control method creates a 'synthetic' comparative case – called 'synthetic Switzerland' – from a pool of five comparison countries – called 'donor pool'. Both Switzerland and the cases from the donor pool are characterised by the outcome variable (i.e., indicators of subnational fiscal autonomy).[8] The method then creates a synthetic case that matches as closely as possible the characteristics of real Switzerland with the cases in the donor pool for the time period prior to 2008 (the year in which the NFA became applicable). In concrete terms, the algorithm weights the donor pool cases to minimise the difference in the outcome variable between the real and the synthetic case (measured as 'mean squared prediction error' [MSPE]) prior to 2008.[9] If the method is able to create a synthetic Switzerland with a similar trajectory of the outcome variable over an extended period until 2007, a discrepancy in the outcome variable after the introduction of the NFA can be interpreted as a result of the federal reform itself (Abadie et al. 2015: 498).

The donor pool is deliberately limited to OECD states with a federal structure. Although the question of de/centralization is also relevant for unitary states, the logic of vertical relations is

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different. In contrast to federal states, subnational units in unitary states do not have their own policy competences (self-rule), which per se strongly limits their autonomy and makes a comparison with Switzerland difficult. Hence, I choose Austria, Belgium, Canada, Germany, and the United States as comparative cases, referring to existing categorisations (Huber et al. 2004, Lijphart 2012). I assess the robustness of my findings by re-running the model and excluding individual countries from the donor pool (see Figures A1, A2, and A3 in the Appendix).

The key motivation for using the synthetic control method (instead of more frequent alternatives of regression techniques) is twofold: First, the synthetic control method allows the quantification of effects despite a small N, which normally does not allow quantitative analyses. Second, even if one considers regression methods, a valid estimation is still difficult due to the skewed distribution of the independent variable, i.e., the federal reform. The synthetic control method is thus particularly suitable as a quantitative method for analyses of rare events with data covering only a small N.

Empirical findings

This section presents the empirical findings of the effect of the NFA on fiscal autonomy along the three indicators presented above.

Indicator 1: Decentralization of self-financed expenditure

Figure 2 shows both the annual share of total and self-financed SNG expenditure from 1996 to 2014 compared to the average of five federal OECD states (Austria, Belgium, Canada, Germany, and the United States). We see that the share of SNG expenditure has on average constantly increased in the six federal OECD states from approximately 43 percent in 1996 to more than 46 percent in 2014. In Switzerland, SNG expenditure accounted for slightly more

than the half of total government expenditure over the entire period. While there was a constant increase from 1996 to 2014, the increase was indeed strongest from 2007 (54 percent) to 2008 (56.5 percent), the year in which the NFA became applicable. In the entire sample, we find no such increase for this year. However, how does it look like if we exclude expenditure financed by the federal government grants and only consider self-financed expenditure? First, decentralization values obviously decrease, both for Switzerland as well as for the entire sample. The findings, however, remain the same: In Switzerland, we find an increase of the share of self-financed SNG expenditure from 44.9 percent in 2007 to 47.3 percent in 2008, while there is no equivalent increase in the entire sample.

++ Figure 2 ++

Looking at the descriptive statistics, there thus seems to be at least some evidence for a decentralizing effect of the NFA, since the year 2008 marked the biggest change of expenditure decentralization in Switzerland while decentralization rates in the other federal states remained constant. However, this finding must be interpreted with caution. The NFA was implemented during the financial crisis, which is why the descriptive statistics alone do not allow clear conclusions to be drawn about the effect of the NFA. To strengthen the analysis, I use the synthetic control method, which allows me to compare the development of Switzerland with a mathematically constructed synthetic case (synthetic Switzerland). The findings are presented in Figure 3. Again, I first consider total SNG expenditure (upper graph) before focussing on self-financed expenditure (lower graph), introduced above as the first indicator to measure SNG fiscal autonomy.

++ Figure 3 ++

The compositions of the two synthetic cases are presented in Table A2 in the Appendix. Looking at the trajectories of Switzerland and its synthetic counterparts, the NFA effects prevail for both measurements of decentralization. Here, too, the effect persists when only self-financed expenditure is considered: Decentralization hardly differs between Switzerland and synthetic Switzerland from 1996 to 2007. Since 2008, however, the difference is always at least 1.5 percentage points and above 2 percentage points on average.[10] Hence, even when Switzerland is compared to a more sophisticated comparison case that controls for possible economic impacts of the financial crisis, we find an effect clearly attributable to the year 2008.

The robustness checks reveal that synthetic Switzerland strongly depends on the inclusion of Canada into the donor pool (see Figure A2 in the Appendix). This is not surprising given that Canada and Switzerland are the two fiscally most decentralized federal states. However, even the exclusion of Canada from the donor pool does not change the main finding: When the NFA became applicable in 2008, expenditure decentralization in Switzerland increased. In synthetic Switzerland, built out of a donor pool of Austria, Belgium, Germany, and the United States, it decreased.

Hence, summarizing the findings of indicator 1, we can state that the NFA indeed has led to a decentralization of self-financed expenditure. The effect, though, is rather modest. The share of SNG expenditure of total government expenditure has only slightly increased by around 2 to 3 percentage points.

Indicator 2: Share of non-earmarked grants

So far, federal government grants have been excluded from the analysis. For the second indicator, I extend the analysis to SNG expenditure financed by federal government grants. The key question here is whether we observe a change of the shares of earmarked and non-earmarked grants. An increase of the latter would signify an increase of subnational fiscal autonomy. Figure 4 depicts the development of federal government grants in Switzerland from

2000 to 2010 – measured in percent of total government expenditure (upper graph) – and the shares of non-earmarked grants (lower graph). From 2000 to 2007, federal government grants accounted for around 14 to 15 percent of total government expenditure in Switzerland. This share did not change significantly in the year 2008, when the NFA became applicable. However, the picture changes when looking at the type of grants. Until 2007, earmarked grants made up 76 percent of all grants on average. In 2008, this share decreased to 65 percent and remained more or less on that level in the following years.

Unfortunately, no data are available for the other federal countries in the donor pool for the entire period. In the lower graph, however, I extrapolate the trend from 2000 to 2007 (before the NFA) to the years 2008 to 2010 (after the NFA). The gap between the two lines clearly indicates an effect attributable to the reform. According to this, the NFA has led to a decrease of earmarked grants by around 6 to 8 percentage points. Two reasons speak in favour of an effect despite the lack of comparable data from other federal countries. First, decreasing the conditionality of grants has been a key goal of the reform, especially regarding the policy areas defined as joint tasks with a system change from conditional payments to unconditional global budgets. Second, it is unlikely that the increase of non-earmarked grants was due to the economic crisis in 2007-08. In order to respond to a crisis by means of anti-cyclical fiscal policy, an increase of earmarked grants would be much more obvious, as there is otherwise a risk that SNGs will use the revenue for other measures not aimed at stimulating the economy. Hence, we find a second effect clearly attributable to the NFA: While there was no increase of federal government grants in total, their composition changed in favour of non-earmarked grants and thus in favour of greater freedom in the use of federal government transfers. Again, however, the extent of this effect should not be overestimated. Given that federal government grants, on average, only made up around 14 percent of total government expenditure, the 6 to 8 percent increase of non-earmarked grants corresponds to around 1 percent of total government expenditure.

++ Figure 4 ++

Indicator 3: Mismatch between revenue and expenditure after intergovernmental transfers

Expenditure statistics reveal only part of the truth about subnational fiscal autonomy. Even though subnational expenditure has increased slightly, the question remains whether this increase is covered by revenue. As can be seen in Figure 5, it is rather difficult to create a synthetic equivalent for Switzerland due to the cyclical development of revenue in relation to expenditure. Nevertheless, it can be seen that the ratio of revenue and expenditure has constantly declined in Switzerland since the introduction of the NFA, while in the other states, it started to increase after 2010.[11] It therefore seems plausible that this long-term deterioration of subnational budgets is not due to the economic crisis (which was faced by all states of the sample), but due to the introduction of the federal reform in 2008.

++ Figure 5 ++

This interpretation is confirmed when looking at the absolute values of the subnational mismatch of revenue and expenditure in comparison to the federal government from 1996 to 2014.[12] Until 2005, federal government expenditure exceeded revenue in most years. Since 2006, however, federal government revenue always exceeded expenditure. The development is different for the SNGs: Looking at the period from 1996 to 2007, just before the NFA came into force, subnational expenditure exceeded revenue only once (2003). Since 2008, however, after a decrease of the revenue surplus from 2008 to 2010, subnational expenditure has exceeded subnational revenue in every year since 2011.

Hence, even though the analysis of the impacts on revenue can only be indicative at this moment and further investigations are still needed, we can nevertheless state that since 2008, the financial situation at regional level in Switzerland has been as severe and persistently negative as at no other state level and in no other federal OECD state.

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Conclusion

The aim of this study has been to analyse the vertical fiscal impacts of the Swiss federal reform 2008 – the NFA. Summarizing the findings, we find a slight increase of self-financed SNG expenditure and a modest shift from earmarked to non-earmarked federal government grants. At the same time, however, revenue has not increased correspondingly. This has imposed strong limitations on subnational fiscal autonomy and led to a deterioration rather than an improvement of the fiscal situation of SNGs in federal Switzerland. So far, research has focused on the positive aspects of the reform, especially the successful decision-making process and the capability of the Swiss federal system to reach a consensus on a major constitutional reform despite the numerous veto players. While this study does not question these findings, it urges caution when it comes to the substantial fiscal impacts of the reform.

The study at hand allows two conclusions to be drawn. Both conclusions are preliminary, as a single case study does not allow to generalize findings beyond the case. Nevertheless, they point to relevant suggestions for further research, which will contribute to the understanding of institutional change in federal systems.

First, the findings for indicator 1 and 2 indicate that the NFA has had a very limited effect. It can be argued that this result corresponds to what could realistically be expected from a reform in a federal country. Due to the high number of veto players in these countries, state reforms are often reduced to the lowest common denominator. In literature, a reform is often associated with a critical juncture that leads to profound changes of a political system (Bednar, 2009; Benz, 2013b; Benz and Colino, 2011; Broschek, 2013; Broschek et al., 2018). The findings of this study, however, are a strong argument for understanding federal reforms as something procedural that – to put it in the words of Behnke and Kropp (2016: 588) – "extend over a longer period of time and are marked by sequences". Switzerland is a particularly good example of this: Subnational fiscal autonomy was already at a comparatively high level before the reform (Dardanelli and Mueller, 2017), which made it difficult to increase this level substantially in a

context of many veto players. Hence, the results for Switzerland can most likely be transferred to countries with similar decentralised resource distributions. Further research is needed to show to what extent this conclusion holds true for federal countries with more centralised resources. A first suggestion is thus that *we should consider federal reforms not as a single event eliminating all deficits at once, but rather as part of a longer process with multiple steps.* Second, the findings for the third indicator – the mismatch between revenue and expenditure – point to a conclusion that is relevant to federal countries in general, namely the divergent resilience of expenditure and revenue de/centralization. In general, one can argue that in federal countries tax systems are often established institutions with a certain path dependency that makes fundamental changes difficult in the context of many veto players. This is particularly the case if an increase of subnational revenue should not be brought about by an increase of intergovernmental transfers, as this carries the risk of the so-called 'flypaper effect', namely an overspending at the regional and local level (Hines and Thaler, 1995). Expenditure, by contrast, can be changed more easily by the transfer of policy competences without having to change the foundations of the federal system. In the context of the NFA, the fundaments of the tax system indeed remained untouched and the volumes of intergovernmental grants did not increase. As a result, revenue could not keep up with the increase of expenditure. These divergent logics for expenditure and revenue can have a direct impact on SNGs in federal countries. If expenditure exceeds revenue over the long term, SNGs need to borrow, which allows a certain degree of autonomy from the federal government but makes them all the more dependent on the lender (Rodden, 2002). Further research is needed to test these theses. Nonetheless, the study at hand is a strong argument for my second suggestion, namely *understanding fiscal autonomy as a multi-dimensional concept with the need to distinguish between expenditure and revenue and consider the relationship between the two.*

Beyond these two suggestions for further research, one has also to consider the limits of quantitative studies in connection with federal reforms. By looking at aggregated fiscal data, it

cannot be concluded that an increase of subnational expenditure – even when financed mainly by own resources – equals an increase of political power at the subnational level (Rodden et al., 2003; Rodden, 2004; Stegarescu, 2005). Generally, what is needed is what Broschek et al. (2018) call a "comparative-historical analysis", i.e., context-sensitive case-based comparisons over time which allow reconstructing the causalities behind institutional dynamics. In cases where scholars focus on quantifiable effects, the synthetic control method and the here presented operationalization of fiscal autonomy can be useful due to the innovative combination of a case study with a quantification approach. Regardless of the method used, further investigations will contribute to a more systematic understanding of success factors and barriers of institutional restructuring in federal systems. These insights are of crucial importance if we want to increase effectiveness of political action in such systems.

Notes

[1] Although the NFA primarily regulated the relationship between the central government and the cantons, this paper generally refers to 'subnational governments', which encompasses both cantons and municipalities. The reason for this is twofold: First, it builds on literature on subnational fiscal autonomy or decentralization in general, which usually distinguishes between the federal government on the one hand and regional and local governments on the other. Second, empirically, cantons and municipalities should be considered together since the cantons have a great deal of freedom to regulate their relations with the municipalities. As a result, vertical relations between cantons and municipalities can vary significantly between cantons.

[2] In the course of the NFA, a new constitutional article was introduced giving the Federal government the possibility to declare inter-cantonal contracts to be generally applicable, meaning that individual cantons could – theoretically – be forced to join the contract (Vatter, 2018: 191–192).

[3] Exceptions are two evaluation reports of the Federal Council which looked at the development of the type of federal government grants (earmarked vs. non-earmarked) (Federal Council, 2010, 2014). However, as argued in this paper, this is only one element of fiscal autonomy.

[4] Essentially, my third indicator is what Hueglin and Fenna (2015: 170) refer to as the "vertical fiscal imbalance" – namely "the mismatch between available revenue and expenditure needs that remains at the subnational level after transfer" – in distinction from what they call the "vertical fiscal gap", which refers to the mismatch before transfers (Hueglin and Fenna, 2015: 170; Shah, 2007: 28). However, in literature, there exist a number of different definitions of the term. Sharma (2012: 100) provides an overview of no less than 16 authors who all define "vertical fiscal imbalances" slightly different (some refer to mismatch between revenue and expenditure at the subnational level *before* transfers, others in turn refer to both levels of government when assessing the degree of imbalances). To avoid misunderstandings, I use the term "mismatch between revenue and expenditure after transfer", which gives a more precise definition of indicator 3.

[5] For all countries in the sample, GFS data is available since 1995, for Switzerland since 1990. A look at the GFS data for Switzerland before 1995 reveals that the value for 1995 was an outlier, which is why I choose 1996 to 2004 as time period for the analyses.

[6] The donor pool comprises federal OECD countries for which data for expenditure and revenue on the different state levels is available for the period from 1996 to 2014.

[7] The following explanations on the method are based on Abadie et al. (2010) and Abadie et al. (2015). A detailed description of the mathematical foundations can be found in Abadie et al. (2010: 494–497) and Abadie et al. (2015: 497–500). The estimations presented in this study are calculated by using the package "synth" in R (Abadie et al., 2011).

[8] The synthetic control method was also carried out including the two predictors GDP per capita and unemployment rate. The inclusion of these predictors did not change the findings. Given that Switzerland is an outlier among OECD countries for both variables, the model assigned weights of zero to both variables, meaning that they are irrelevant for the creation of the synthetic case.

[9] For the mathematical foundations of the method, see Abadie et al. (2015).

[10] The effect is statistically significant in a times-series cross-sectional regression with the two dummies "Switzerland" and "post NFA years" (countries in the donor pool are weighted according to their weights for the construction of synthetic Switzerland): The coefficients are as follows (std. errors in brackets): "post NFA years": 0.02 (0.16); "Switzerland": 35.67 (1.41); "post NFA years" * "Switzerland": 2.43 (0.54); "Intercept" 8.83 (0.41).

[11] The negative effect on the ratio of revenue and expenditure in Switzerland is – at least as a tendency – confirmed when estimating a times-series cross-sectional regression with the two dummies "Switzerland" and "post NFA years" (countries in the donor pool are weighted according to their weights for the construction of synthetic Switzerland). The coefficients are as follows (std. errors in brackets): "post NFA years": -0.001 (0.004); "Switzerland": 0.758 (0.039); "post NFA years" * "Switzerland": -0.027 (0.017); "Intercept": 0.254 (0.010). Hence, the interaction term is only just not significant at the 90 percent level. However, it should be borne in mind that regression is particularly difficult in this case, as synthetic

Switzerland consists largely of Austria, which means that practically only the annual figures of two cases are included in the analysis.

[12] The comparison of expenditure and revenue is based on internationally comparable GFS data from the IMF. For comparisons within the country (e.g., between cantons), the Swiss Federal Finance Administration also reports expenditure and revenue of the different state levels on the basis of the so-called 'FS-Modell'. However, due to a methodological change in the recording of expenditure and revenue in 2008, the figures before and after this year are not comparable.

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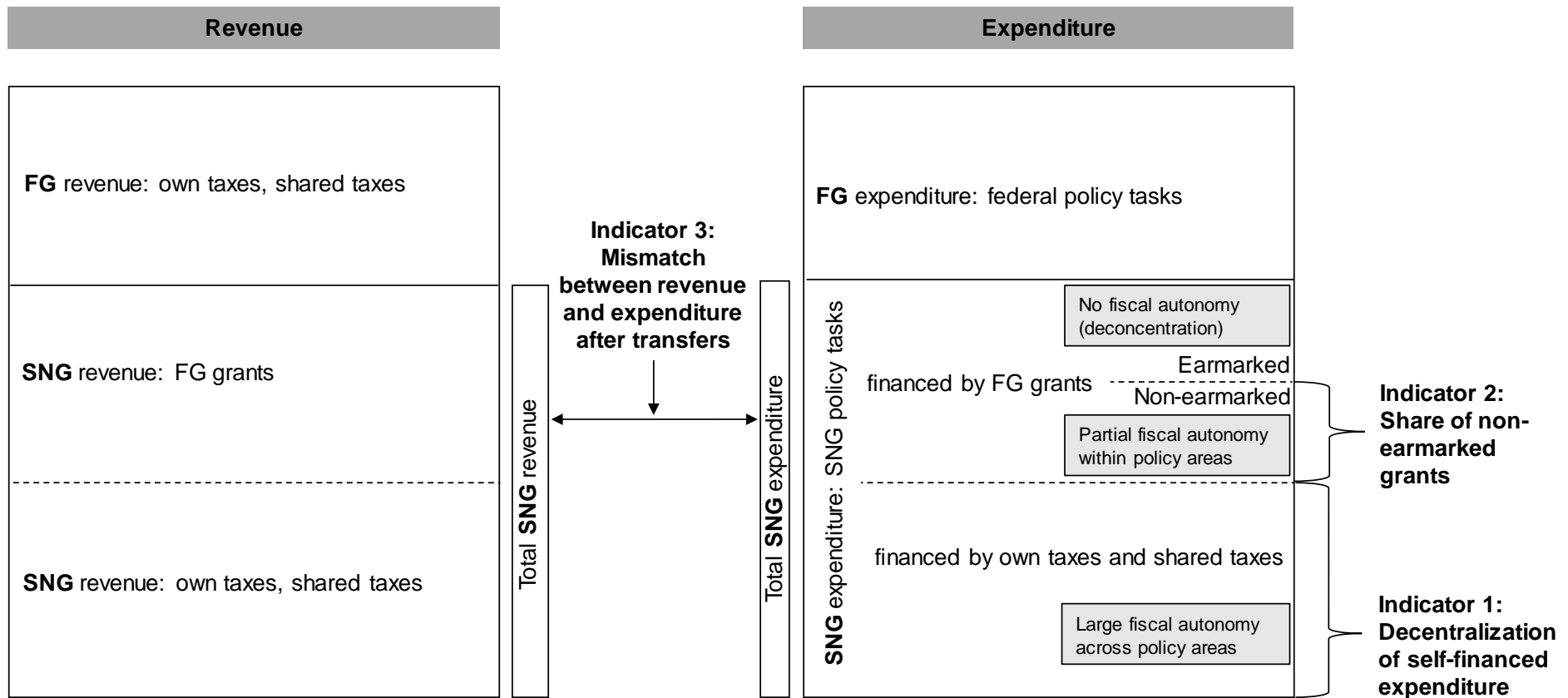Wasserfallen F (2015) The cooperative capacity of Swiss federalism. *Swiss Political Science Review* 21(4): 538–555.

Figure 1. Research design: overview

Source: Own illustration. The graphic is for illustrative purposes only. The ratios of the areas do not correspond to the actual figures.

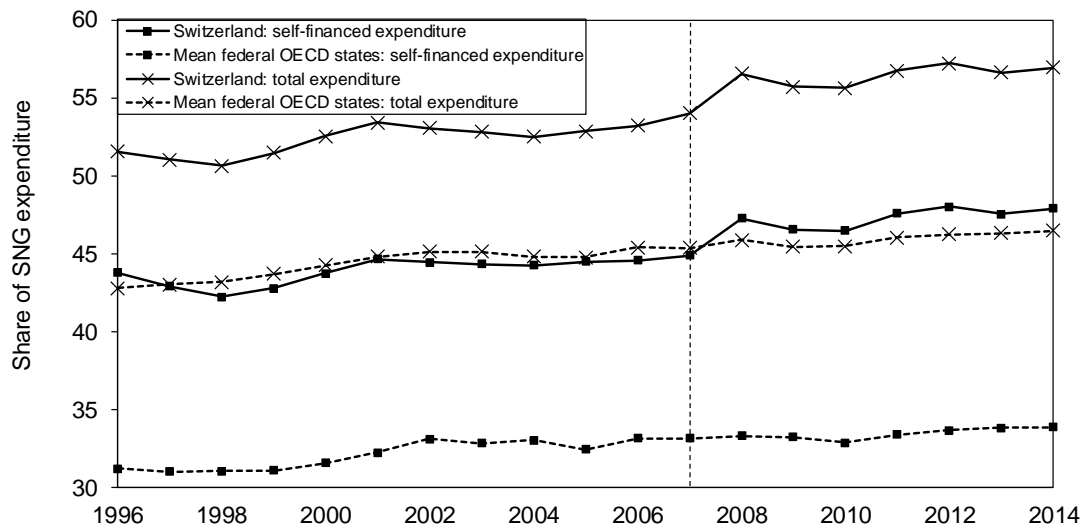*Notes:* FG = Federal government; SNG = Subnational government.

Figure 2. Decentralization of (self-financed) SNG expenditure, 1996-2014

Source: IMF (2017).

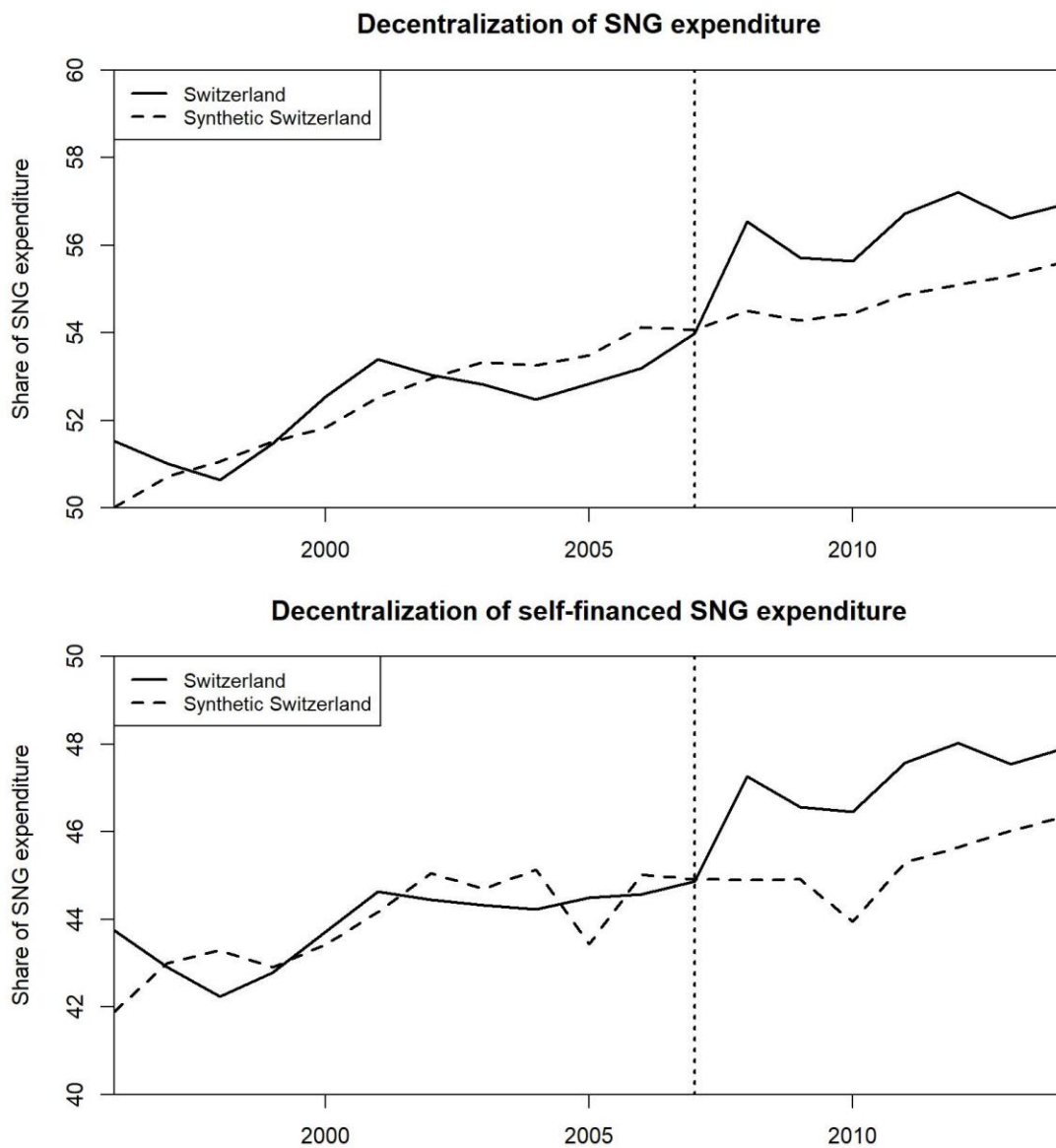*Notes:* Federal OECD states include Austria, Belgium, Canada, Germany, and the United States. SNG = Subnational government.

Figure 3. Synthetic control method for the NFA: effect on decentralization of (self-financed)

SNG expenditure, 1996-2014

Source: IMF (2017).

Notes: Own calculations using the R package "synth" (Abadie et al., 2011). For information on the data and a

detailed description of the synthetic case, see Table A2 in the Appendix. SNG = Subnational government.

Federal government grants

Share of non-earmarked grants
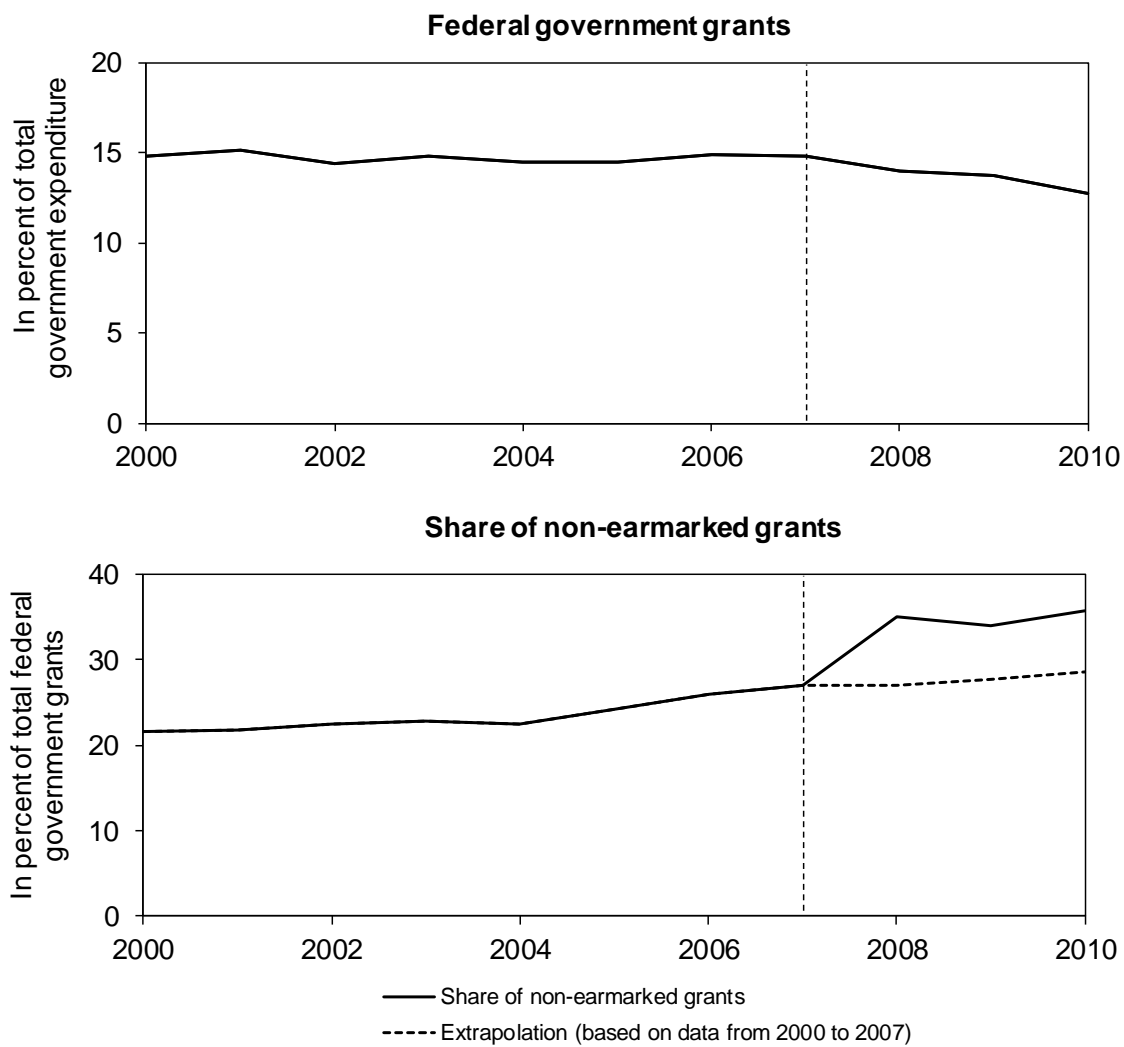
Figure 4. Share of non-earmarked federal government grants in Switzerland, 2000-2010

Source: IMF (2017).
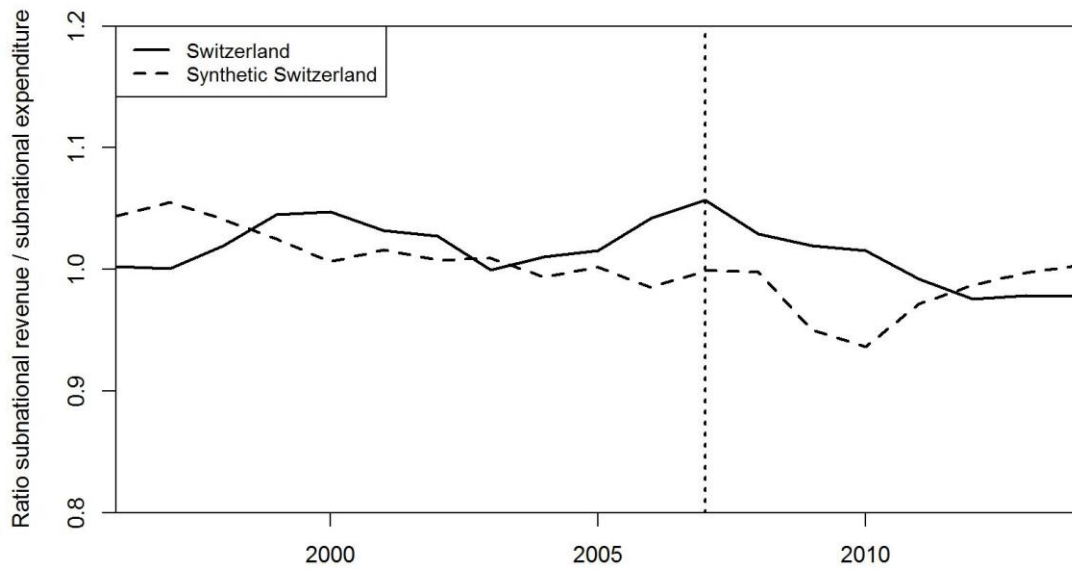
Figure 5. Synthetic control method for the NFA: effect on ratio subnational revenue/subnational expenditure, 1996-2014

Source: IMF (2017).

Notes: Own calculations using the R package "synth" (Abadie et al., 2011). For information on the data and a detailed description of the synthetic case, see Table A2 in the Appendix. SNG = Subnational government.

Appendix

Table A1. Policy areas reformed by the NFA

Federal tasks:

1. Defence
2. Highways
3. Personal services (AHV)
4. Personal services (IV)
5. Support for organizations for the disabled with nation-wide activity
6. Agricultural consultancy agencies
7. Animal breeding

Joint tasks:

1. Additional social benefits
2. Higher education grants
3. Traffic within agglomerations
4. Main roads
5. Penitentiary system
6. Land surveying
7. Individual subsidies for the health care insurance
8. Regional traffic
9. Improvement of agricultural structures
10. Noise protection along local and cantonal roads
11. Protection of culturally/historically important buildings/monuments
12. Nature and wildlife protection
13. Flood protection
14. Water protection
15. Forest maintenance
16. Hunting oversight
17. Fishing oversight

Cantonal tasks:

1. Support for housing, working and day care facilities for invalids
2. Special schools
3. Support for regional and local activities of organizations for the less abled
4. Educational grants up until secondary school
5. Traffic control outside agglomerations
6. Support for educational facilities for social workers
7. Recreation and sport
8. Airfields
9. Improvement of housing conditions in mountain areas
10. Cantonal agricultural advice

Horizontal cooperation:

1. Execution of criminal penalties and measures
2. School education in matters specified in Art. 62 para. 4 Cst (harmonization of primary school education)
3. Cantonal institutions of higher education
4. Cultural institutions of supra-regional importance
5. Waste management
6. Land surveying
7. Urban transport
8. Advanced medical science and specialist clinics
9. Institutions for the rehabilitation and care of invalids

Source. Vatter (2018: 191), based on Federal Council (2001, 2004).

Note. The list corresponds to the final reform decision, as documented in the federal voting booklet in support for

the vote of November 11, 2004. The list does not correspond to the one in the Federal Council Message in 2001,

since there were some changes in the final period of the reform process.

Table A2. Comparison of Switzerland and synthetic Switzerland

	Switzerland	*Synthetic Switzerland*	*OECD mean (federal states)*
Decentralization of SNG expenditure (Figure 3, upper graph)			
Outcome: Expenditure decentralization	52.4	52.4	42.7

Synthetic Switzerland is a composition of:
Austria (weight = 0.094),
Belgium (.104),
Canada (.563),
Germany (.108),
and the United States (.131).

Decentralization of self-financed SNG expenditure (Figure 3, lower graph)			
Outcome: Expenditure decentralization	43.9	43.9	29.8

Synthetic Switzerland is a composition of:
Austria (weight = .067),
Belgium (.073),
Canada (.640),
Germany (.105),
and the United States (.114).

ratio subnational revenue/subnational expenditure (Figure 5)			
Outcome: Ratio subn. rev. / subn. exp.	1.03	1.02	0.97

Synthetic Switzerland is a composition of:
Austria (weight = .957),
Belgium (.028),
Canada (.013),
Germany (.002).

Source: IMF (2017).

Notes: Own calculations using the R package "synth" (Abadie et al., 2011). SNG = Subnational government.
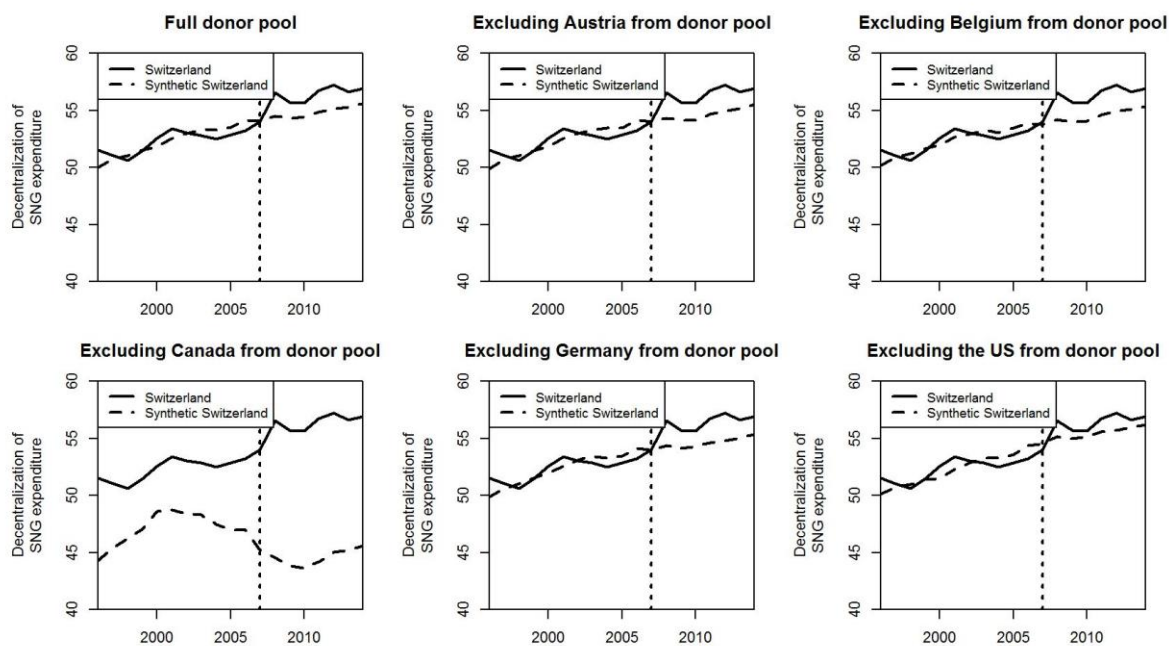
Figure A1. Synthetic control method for the NFA: robustness checks for effect on decentralization of SNG expenditure, 1996–2014

Source: IMF (2017).

Notes: Own calculations using the R package "synth" (Abadie et al., 2011). SNG = Subnational government.
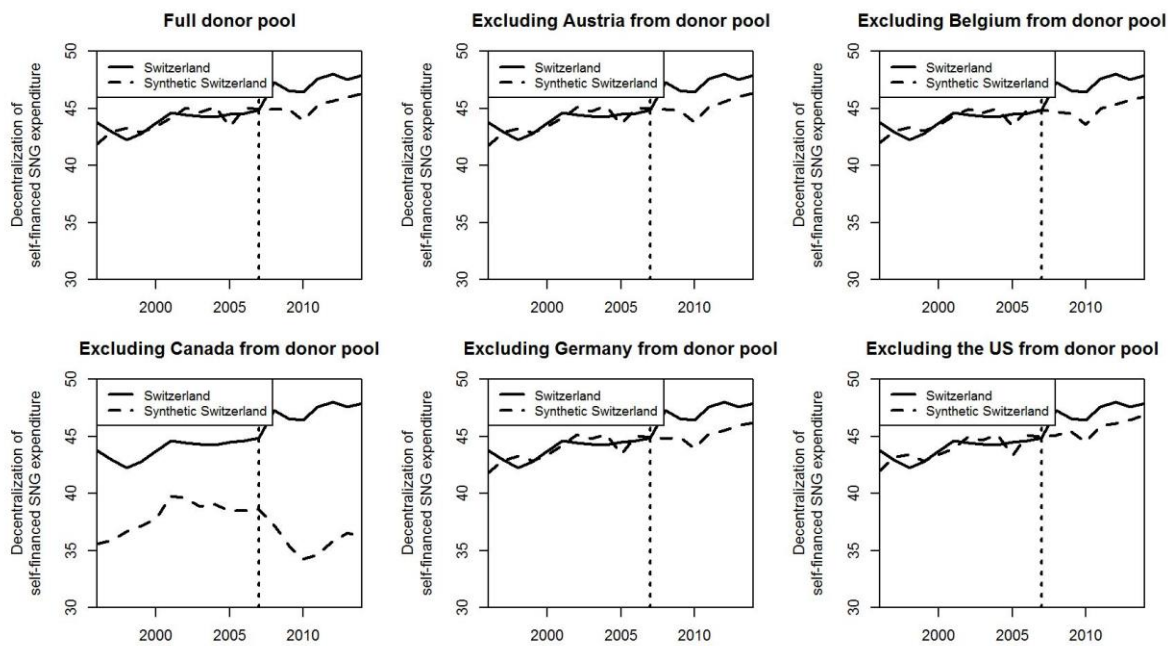
Figure A2. Synthetic control method for the NFA: robustness checks for effect on decentralization of self-financed SNG expenditure, 1996–2014

Source: IMF (2017).

Notes: Own calculations using the R package "synth" (Abadie et al., 2011). SNG = Subnational government.
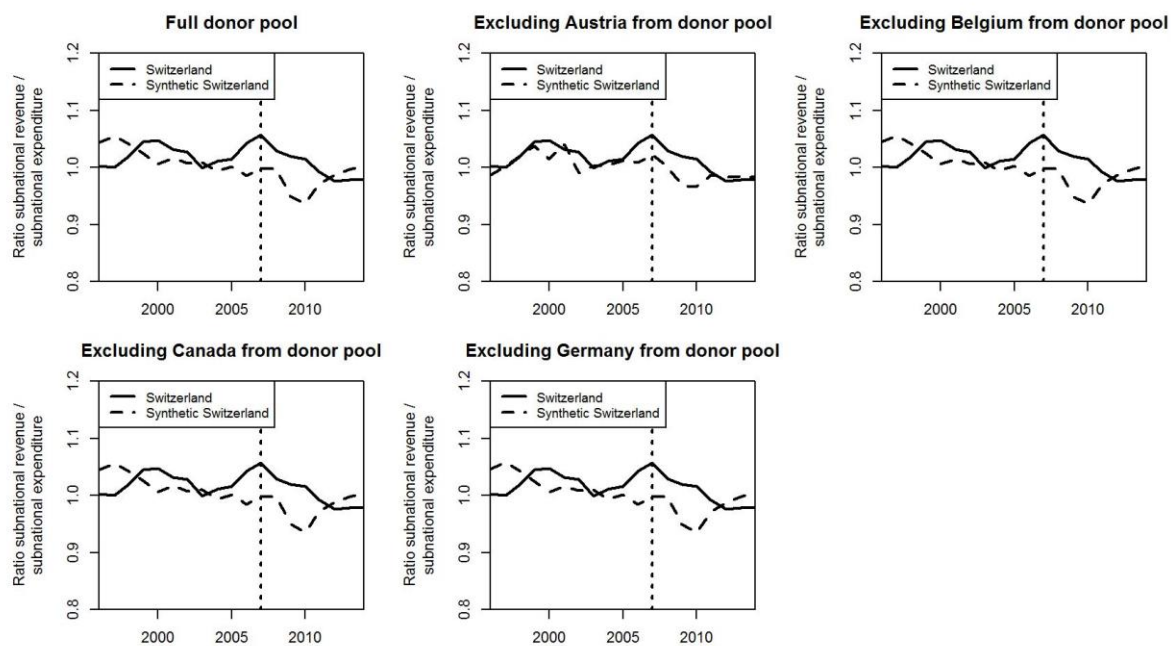
Figure A3. Synthetic control method for the NFA: robustness checks for effect on ratio subnational revenue/subnational expenditure, 1996–2014

Source: IMF (2017).

Notes: Own calculations using the R package "synth" (Abadie et al., 2011). SNG = Subnational government.
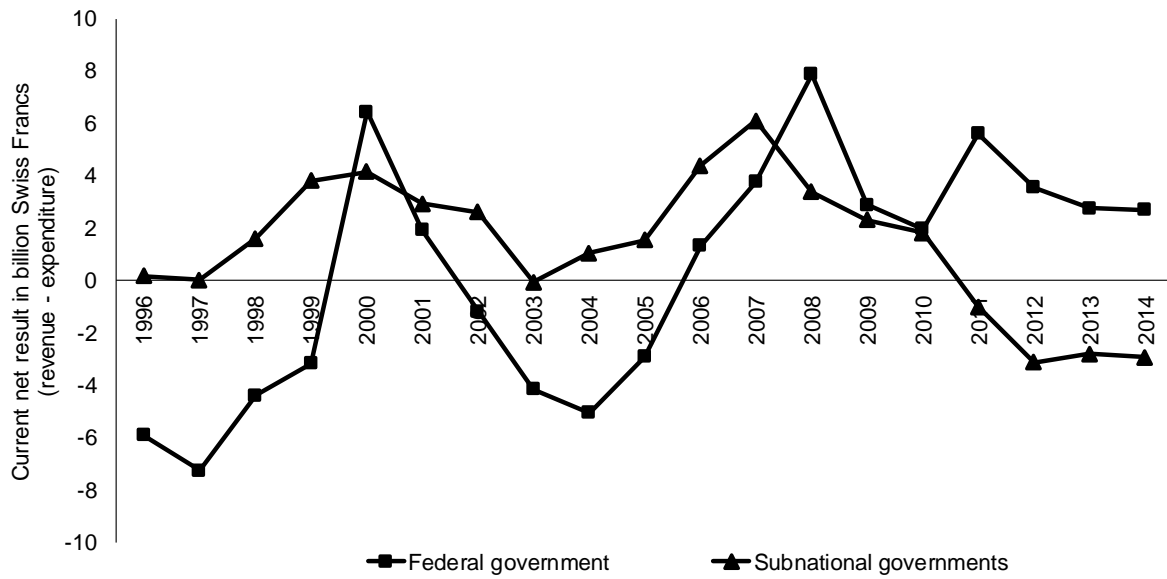
Figure A4. (Mis)match between revenue and expenditure for SNGs and federal government (after intergovernmental transfers), 1996-2014

Source: IMF (2017).