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## Heterogeneity when accounting standards are non-binding: Internal service charges in the Swiss cantons

Nils Soguel <sup>a,b</sup>, Nicola Mauri <sup>a</sup> and Henrique Soares Pimenta<sup>a</sup>

<sup>a</sup> IDHEAP—Institut de hautes études en administration publique-Swiss graduate school of public administration, IDHEAP, University of Lausanne, Switzerland; <sup>b</sup> Swiss Public Sector Financial Reporting Advisory Committee—SRS, Switzerland

### IMPACT

This article evaluates the extent to which decision-makers in the public sector implement non-binding accounting standards. Using the example of internal service charges at the state level in Switzerland, the authors show that the implementation of non-binding standards may fail to achieve real transparency because of the ensuing heterogeneous implementation of accounting policies. Research results suggest that the implementation of the recommended ISC policies differed in terms of their intensity, differentiation, and precision. Standard-setters should anticipate an heterogeneous effective take-up of the recommended accounting standards they issue for the public sector, especially when jurisdictions differ in terms of political preferences.

### ABSTRACT

This article explores how the implementation of non-binding accounting standards by public entities might lead to heterogeneous accounting policy outcomes. Using panel data from the Swiss cantons, the authors studied internal service charges (ISCs) to evaluate what factors may influence the degree to which recommendations are implemented. In contrast with the existing literature, this study is the first to quantify the determinants of ISC use. Fixed effects regressions show that right-wing preferences and financial management organization were positively correlated to ISC use. These results emphasize the impact of political preferences on the degree to which accounting reforms are implemented.

### Keywords

Accounting standards; internal service charges; local public finance; public management; public sector financial management

## Background

Transparency and comparability in financial reporting are key issues driving the need for harmonization across regional governments or countries, especially within political and economic unions. In response, the European Commission is currently developing the European Public Sector Accounting Standards (EPSAS). However, the binding nature of these standards will potentially be met with resistance and diverging attitudes—see Frintrup et al. (2020) for an overview of responses to the EPSAS from budgeting experts from various EU countries). One possible outcome could be a set of formalized recommendations: a position notably supported by countries like France (Calmel, 2017). Non-binding guidelines, instead of mandatory norms, raise the question of potential discrepancies between a given set of recommendations and their effective impact on national or subnational accounting policies. To address this question, our article investigates how non-binding accounting standards may lead to a heterogeneity of practices, varying according to the degree and nature of the implementation, and what the determinants of this heterogeneity are. More specifically, we studied the case of internal service charges (ISCs) which have been recommended to the Swiss cantons (i.e. states) as part of a set of non-binding accounting standards issued by the intercantonal Conference of Cantonal Finance Ministers (CFM). We explored the heterogeneous implementation of the ISC recommendation and we analysed the political, managerial and structural factors that can explain the heterogeneity in ISC use.

ISC book entries are a tool to enable informed decision-making based on the actual costs of providing a given

service. They make it possible to record the exchange of goods or services between two internal units within a single public or private entity. This accounting procedure is a pure book entry as it does not involve any cash transaction. A department providing a good or a service for another records a revenue, while the counterpart records an expense (Gianakis, 1995). This kind of book entry should raise managerial awareness of the costs of the services provided and received within a government or a firm (Fremgen & Liao, 1981). By increasing the level of cost transparency, ISCs are meant to inform the choice, for instance, to outsource the provision of a given service rather than provide it internally (or vice versa). Using this information, at the operational level, decision-makers are therefore better equipped for comparing internal and external suppliers, thus increasing competition between both and eventually increasing efficiency (Gianakis, 1995). At a strategic level, increased transparency in accounting practices has been shown to be positively linked to better governance, accountability and strategic decision-making (Cuadrado-Ballesteros & Bisogno, 2021; Bellanca & Vandernoot, 2014; Sutcliffe, 2003).

Accounting standards can be implemented inconsistently if they are provided as non-binding guidelines—a situation which does not help with potential information asymmetries between citizens and public officials. The purpose of ISCs is to increase cost-transparency in the public sector and local decision-makers may be reluctant to fully disclose the accurate costs of public services (Niskanen, 1968; Zimmerman, 1977). Empirically, existing research has already observed a pattern of divergence in ISC practices from their initial purpose of cost-awareness

(Ingram & Cowan Sharp, 1989; Modlin, 2011). A consistent implementation of ISCs should logically lead to a decrease in public expenditure and/or an increase in government efficiency. But the empirical literature has failed to prove this (Clémenceau & Soguel, 2012). Moreover, the actual enforcement of ISC practices seems to strongly vary across public entities as these book entries are usually non-binding (Chang & Freeman, 1991; Coe & O'Sullivan, 1993).

In our study, to examine the degree to which ISCs are implemented, we first built three indexes based on a detailed sample of ISC book entries from the Swiss cantons. More specifically, we investigated the share, or 'intensity', of ISCs with respect to a given jurisdiction's total charges, their differentiation, i.e. the number of book-entry categories used, and their precision of use by public entities.

In a second step, we investigated which factors might be influencing how strongly a jurisdiction relies on ISCs—meaning how and how much it implements a non-binding accounting standard. We used a panel regression approach to look at how ISC per capita and intensity are impacted by three categories of variables: political preferences, accounting practices and structural characteristics. Our empirical strategy takes advantage of the panel structure of a second dataset covering political, institutional and financial information on the Swiss cantons between 1980 and 2017. To our knowledge, no previous research has documented the use of ISCs using observational data and panel data methods in such detail.

Our results show that, while the cantons were advised to use ISCs to achieve a better operating efficiency, the way the ISCs were used in practice did not necessarily help them meet this goal. We observed large discrepancies in the intensity, differentiation, precision of use, and number of sub-categories of ISCs across cantons, indicating a strong heterogeneity in terms of implementation. The results from our regression framework indicate that the ISC intensity and per capita ISC are driven by political preferences and, in particular, the political leaning of the canton parliaments. Right-leaning parliaments correlated with a stronger use of ISCs, which echoes the more fiscally conservative preferences that characterize the right-wing parties in Switzerland. We also found that accounting variables, such as interest (liabilities) payments, impact ISC per capita and ISC intensity, indicating that the cantons seem to use ISCs to share the task of servicing centrally-accumulated debt rather than for charging the cost of in-house transactions. We did not find that structural variables, such as population or government size, influenced ISC use.

The rest of the article is structured as follows. The next section looks in more detail at the existing literature dealing with ISC practices. Then we explain the Swiss context, followed by our methodology and the mechanisms behind the explanatory variables we studied. After assessing our results and their implications, we conclude with a summary.

## Literature review

This research contributes to the literature addressing the implementation and effectiveness of accounting standards and policies. In the context of public sector accounting reforms, several recent works have been dedicated to their

impact on accountability (Bellanca & Vandernoot, 2014), governance (Cuadrado-Ballesteros & Bisogno, 2021) and decision-making (Sutcliffe, 2003). Their results show a positive relation between accounting standards when they are directed towards international recommendations, i.e. the international public sector accounting standards (IPSAS) on the one hand and, on the other, an improved transparency, a higher quality of governance (measured through accountability, government effectiveness, regulation quality, rule of law and corruption levels) and a better strategic financial decision-making. Nevertheless, Barton (2009) highlights how governments may misuse accounting standards and thereby how reforms can reduce efficiency instead of increasing it. Barton's research focuses on accounting reforms in Australia and shows that switching to accrual accounting may create confusion and awkward implementation if the target standards are not well suited to the public sector context.

Moreover, our investigation builds on the existing literature on the use of ISCs by public entities. Even though ISC implementation has been promoted since the 1980s in the USA in conjunction with the use of Internal Service Funds (ISFs) (Chang & Freeman, 1991), the literature on this matter remains scarce. Despite this, most of what has been published has highlighted the importance of ISCs despite their weak implementation. Seminal work from Coe and O'Sullivan (1993) put forward three main benefits of using ISCs: a more accurate estimate of the cost of each good and service; an increased awareness from public managers that internal supply does not equal 'free'; and an improved decision-making process for choosing between in-house supply and outsourcing. The authors surveyed the chief financial officers (CFO) of cities in the USA and asked them about the perceived benefits of using ISCs. On one hand, the CFOs who were not using ISCs by choice pointed out that ISCs had a poor cost-benefit ratio. In contrast, the CFOs using ISCs indicated that ISCs were mainly useful for contracting-out decisions, justifying budgets, pricing services, and improving management decisions; overall, most CFOs using ISCs perceived them as useful. Despite this, only a tiny minority of surveyed cities reported that their ISC system allowed them to fully charge for internal services, including both inter- and intra-departmental indirect costs like support services (personal, accounting, legal, purchasing, auditing and other overhead costs).

Ingram and Cowan Sharp (1989) had earlier noticed that the systematic use of ISCs reduces the variance of expenditures, therefore increasing comparability over time. They compared the expenditures of cities in the USA using ISCs with the expenditures of cities that were not using ISCs. Then, by assessing the accounting ratio of expenditures over revenues from 498 municipalities between 1973 and 1982, they showed that overall expenditures fluctuated less in the cities using ISCs. At the unit level, the authors compared this ratio for fire and police departments and found that departments using ISCs also reported fewer fluctuating expenditures. Based on this evidence, they concluded that ISCs smooth out expenditures and improve comparability across both accounting periods and governments. Possible apparent differences in the cost of providing public services may thus partly result from the extent to which ISCs are rolled out. Thus, proper ISCs would facilitate budget plans by

providing decision-makers with cost estimates that are less flawed by changes in the organization and the procedures.

More recently, Modlin (2011) surveyed counties in the states of North and South Carolina, and Tennessee to figure out how county-level institutional variation affect ISCs; his findings extend those of Coe and O'Sullivan (1993). The latter found that 72% of the cities they surveyed implemented at least some ISCs, while Modlin found a substantial decline in their use. Nevertheless, he identifies certain factors contributing to the use of ISFs, for instance the type of government. Typically, professionally run councils are more likely to use ISCs. The odds also positively correlate with the size of the budget. The same applies when a cost-allocation plan exists. A cost-allocation plan summarizes, in a written form, the procedures and the techniques that an entity uses to allocate costs between its units or to the programmes it delivers. This type of plan may include organizational charts, descriptions of provided services, the identification of the unit providing/receiving the service, the items to be included in the cost of the service, the technique to distribute the cost to the benefiting units.

Modlin's study is the closest to ours in terms of methodology and results; we found similar evidence of a slack implementation of ISCs in the Swiss cantons. However, our research enables a more detailed comparison of practices since we base our analysis on observational data from financial reports rather than on surveys like most existing studies. Although our results are consistent with Modlin's findings, our approach focused on the intensive rather than the extensive margin—meaning that we focused on the degree of implementation rather than the

binary yes/no decision of whether to use ISCs. This alternative way of investigating the issue gives a more compelling external validity to the study. It allows us to add to the relatively scarce literature on ISC practices in governments, notably by showing that most governments tend to use ISCs very differently even if their accounting practices depend upon a homogenous set of binding and non-binding rules. Our results also suggest that a systematic use of more specific ISC categories goes along with a higher share of ISCs in the overall expenses. This may explain why Clémenceau & Soguel's test (2012), also involving Swiss cantons, was inconclusive in showing that more ISCs increase operating efficiency and reduce deficits because they exercise a cost pressure on government units. Our novel panel data set also contributes to a more precise measure of the factors influencing how much a government relies on ISCs, which is an exercise that earlier literature could not implement to the same extent based on fewer observations and survey data.

### Swiss context and accounting standards

In Switzerland's federal structure, each of the 26 cantons has sovereign powers in many aspects, including public finances. In practice, this translates into each canton establishing its own financial management legislation and its own accounting policy. Historically, this institutional setting had led to quite a high heterogeneity in accounting standards. Since the 1970s and the emergence of the New Public Management (NPM) ethos, pressure for more cost-awareness, comparability, transparency and accountability has increased, prompting the CFM to introduce some harmonization. As its name suggests, the CFM is an assembly of all cantonal finance ministers who meet regularly to discuss and co-ordinate on fiscal matters. However, the CFM does not have any authority to implement policies—it can only recommend them. The purpose of the CFM is to co-ordinate cantons on fiscal matters when necessary. For example it did this in 1977 by eventually issuing a harmonized accounting model (CFM, 1982). The most prominent feature of the model is a binding chart of accounts. The other prominent feature stems from the chart of accounts: the end of cash-based accounting and the nationwide adoption of accrual accounting. This latter paved the way for including some aspects of management accounting into the governments' overall financial accounting processes. The CFM also advocated for improving information regarding the cost of providing public services, even and already through the publication of the financial reports. It wanted the accounting model 'to promote a cost-based way of thinking' (CFM, 1982, p. 14). To achieve this goal, it recommended using ISCs and included them into the chart of accounts. More specifically, ISCs are reported in the statement of financial performance (i.e. income statement). For each ISC, there is an equivalent internal service revenue (ISR) allowing the sum of ISCs to be equal to the sum of ISRs. Therefore, these book entries have no direct impact on the government's performance, deficit or surplus. The identifier for ISCs is the account number '39', while it is '49' for ISRs.

When it issued the harmonized accounting model, the CFM figured that ISCs would represent more than 10% of a

**Table 1.** Sub-categories to record ISCs according to the Conférence Cantonale des Directeurs des Finances (1981).

39	49	Internal service charges/ revenue	Description
390	490	Procurement of materials and merchandise	Consideration for the supply of goods, appliances, machinery, movable properties, office items of all kinds
391	491	Services provided	Consideration for internal service delivery
392	492	Farm lease, rents, user charges	Consideration for rent paid to third parties for properties, premises, car parks and tangible fixed assets, appliances, vehicles etc.
393	493	Administration and operation expenses	Consideration for administration and operation expenses related to properties, facilities and movable properties used collaboratively or in sub-letting.
394	494	Imputed interest and finance costs	Consideration for imputed interest on administrative and non-administrative assets
395	495	Plan and unplanned depreciation	Planned and unplanned depreciation of administrative assets if they are not charged directly to the units
398	498	Transfers	Accounting transactions between units without involving a service, for example transfer of an amount from a unit to the income statement of an earmarked fund and vice versa
399	499	Other internal service charges/revenue	Considerations to other units or consolidated entities that are not otherwise reported

Notes: Identifiers for charges are in the first column and those for revenues are in the second one. The third column gives the category's title and the last column provides a more detailed description.



typical government's overall expenditure (CFM, 1982). It was hoped that ISCs would lead to a more comprehensive and precise billing to third parties, that using them would ensure a more efficient supply of public services and enhance comparability between public entities.

It took almost 20 years until all 26 cantons followed the CFM's recommendation. The CFM later issued a revised version of its accounting model (CFM, 2008). The revision aimed at facilitating convergence with the International Public Sector Accounting Standard-IPSAS, which had been released in the meantime (Soguel & Luta, 2021). The harmonized chart of accounts was also revised and now provided for eight specific sub-categories—see Table 1. This breakdown allows governments to record and report quite distinctively which kind of services are exchanged internally and at what amount.

### Empirical approach and data

The empirical strategy of our research was twofold. To document the degree of ISC implementation, we first looked at descriptive evidence using three indexes on the 'intensity', 'differentiation', and 'precision' of ISCs across Swiss cantons using a dataset encompassing detailed ISC book entries. In a second step, we exploited the large time and cross-sectional variability of ISC use by means of a regression approach using a second dataset that includes aggregate ISC entries. We examined how structural, political, and accounting practices variables may correlate to the intensity and per capita use of ISCs in the Swiss cantons. A second panel dataset spanning over 30 years, meant we could control for unobserved preferences and idiosyncratic shocks by incorporating time and canton fixed effects.

To implement our first empirical analysis, we built a novel dataset by collecting detailed information on ISC entries for the 24 Swiss cantons based on each canton's annual general purpose financial reports. These reports are not centrally provided and harmonized, making the data collection and cleaning extremely time consuming and so we focused on the 2016–2018 period to optimize the data-collection process. Most cantons present a statement of financial performance that furnishes detailed information at

the administrative unit level, thus providing each ISC/ISR book entry. Often, each ISC/ISR entry is recorded and reported by accounting number. Therefore, the nature of each individual charge could be identified according to the categories shown in Table 1. Note that ISC book entries are naturally more frequent in the ledger than ISR ones and affect more units. The case of a procurement bill is a good example. The bill is first paid by the ordering and paying unit. Then it is internally shared between all units of the benefiting government. An ISR is booked for the ordering unit only, but ISCs are booked for every benefiting unit. This is why we focused on ISCs instead of ISRs—there are more of them and so they offer a better proxy for the intensity and precision of ISC recognition.

Based on this first fine-grained dataset, we constructed three indexes of the degree of implementation of ISC standards, which we designated as the intensity, differentiation and precision of ISC book entries. The variable capturing the intensity of ISCs was constructed by dividing the sum of the ISCs by the overall expenses (as reported in the statement of financial performance). ISC differentiation was based on the extent to which the various categories in Table 1 were used to record ISCs. Precision of ISCs was determined by observing whether the booked amounts were either particular or rounded.

In the second part of our empirical application, we used the Swiss federalist system as an empirical laboratory. We used the variations of ISC book entries across time and cantons to explore the influence of different factors on ISC per capita and intensity. For this, we built a panel dataset of the Swiss cantons covering the years 1980–2017, which contained total ISC entries, political, accounting-related and structural variables from the various cantonal and national statistical offices. Table 2 displays the summary statistics of the second dataset. The different variables incorporated attest to the large political, social and institutional heterogeneity among sub-federal jurisdictions in Switzerland. Due to the time and cross-sectional variation in our second sample, we investigated which factors influenced ISC use. We focused on three main groups of variables: political, structural and accounting practices.

The political leaning of the cantonal institutions deserves particular attention. Political variables, such as the election year, the political leaning of the parliament, of the executive branch or of the finance minister, echo the findings of Cuadrado-Ballesteros and Bisogno (2021), who used fragmentation, ideology, or electoral system to study the impact of accrual accounting on governance. In our case, cantons with a right-leaning elected parliament may be expected to advocate for more cost transparency in the hope that cost-awareness will help improve efficiency and reduce expenditure (Tellier, 2006). We therefore expected ISC use to correlate positively with the proportion of right-wing parliament members (MPs). This logic also applies to the executive branch; one can expect, through the discretionary power of the executive and particularly of the finance minister, that ISCs would be positively correlated to right-leaning executive branches and finance ministers. This ability to take policy decisions may be linked to election cycles (Nordhaus, 1975), which is why we integrated a dummy for election years.

The second category of variables related to accounting practices. These regressors made it possible to also check

**Table 2.** Summary statistics of the regression dataset.

Variable	N	Mean	SD	Min.	Max.
ISC intensity	799	0.075	0.074	0.000	0.424
ISC per capita	970	350.384	386.621	0.000	22.411
Year	988	1998	10.972	1980	2017
Election year (dummy)	988	0.247	0.431	0	1
Right-leaning parliament	988	0.412	0.151	0.000	0.817
Right-leaning executive	988	0.440	0.204	0.000	1.000
Political leaning of finance minister	962	5.953	1.348	2.600	7.700
Population (thousands)	988	278.301	291.490	12.757	1,504.346
Accounting maturity	988	6.417	2.482	2.500	13.995
Depreciation (CHF per capita)	808	0.537	0.391	0.032	3.357
Interest payments (CHF per capita)	988	0.971	2.034	0.000	11.511
Government size	799	146.381	92.267	17.877	770.929

Notes: This table contains all the variables used in the empirical analysis. ISC intensity, government size, depreciation and interest payments are based on the cantons' statements of financial performance. Financial Maturity of different canton-years is based on Soguel and Luta (2021). Political variables are taken from the Swiss statistical office.

**Table 3.** Average share of ISC recorded in each subcategory.

		Mean	Median	Min.	Max.	Proportion of cantons using the category
390	Procurement of materials and merchandise	03.9	00.0	0.0	62.7	83.3
391	Services provided	26.5	19.2	0.0	93.3	83.3
392	Lease, rents, user fees	09.5	03.7	0.0	46.7	62.5
393	Administrative and operating expenses	02.3	00.1	0.0	21.5	62.5
394	Theoretical interest and finance costs	02.2	00.0	0.0	26.5	58.3
395	Scheduled and unscheduled depreciation	03.5	00.0	0.0	57.7	58.3
398	Transfers	20.0	05.8	0.0	91.0	45.8
399	Other ISCs	32.1	15.6	0.0	100.0	33.3

Notes: For each canton and year we computed the relative share of ISC entries booked in each separate sub-category. This table displays the distribution of sub-category specific ISC shares across canton-years. We also computed the proportion of cantons using the specific sub-category. ISC use was retrieved from the general-purpose financial reports of the individual cantons.

how the organization of financial management translated into ISC book entries. Two variables—depreciation charges and interest payments—were used to reflect the impact of either a decentralized or centralized organization on ISCs. Interestingly, both are specifically mentioned in the CFM's report (CFM, 1982) as candidates to be internally charged for. Both would positively correlate with ISCs if infrastructure and debt were centrally managed, and if their fiscal burden was shared across administrative units using ISCs. A decentralized management would, on the other hand, negatively correlate with ISCs. Furthermore, we considered the 'maturity' of the local accounting policy according to the index created by Soguel and Luta (2021), which measures the degree to which individual cantonal accounting standards align with IPSAS. The nationwide reform which led to a staggered transition among Swiss cantons to new accounting standards in the mid 2000s resulted in varied maturity levels between cantonal accounting policies. This change may have also impacted ISC practices

Lastly, we investigated whether the variation in ISCs can be explained through structural characteristics. In particular, we explored the role of the size of a government on ISC use. When assessing the impact of the various factors on ISC per capita, we integrated the size of government measured as the total expenditure over GDP ratio. When looking at ISC intensity, however, we looked at the size of a government in terms of population. Our intuition was that a larger jurisdiction (population) or government (expenditure to GDP ratio) may lead to a higher number of ministries (which would correlate positively with ISCs) and simultaneously to more self-sufficient ministries because they are larger (which would translate into a negative correlation with ISCs).

Given the panel nature of our data, we implemented a fixed effect approach to further control for the potential unobserved factors fixed in time that would bias the estimates of the various independent variables. More formally, we estimated the following equation:

$$\log(y_{i,t}) = \beta_1 \text{RightParl}_{i,t} + \beta_2 \text{RightExec}_{i,t} + \beta_3 \text{Minister}_{i,t} + \beta_4 \text{Election}_{i,t} + \beta_5 \text{Maturity}_{i,t} + \beta_6 \log(\text{Depreciation}_{i,t}) + \beta_7 \log(\text{Interests}_{i,t}) + \beta_8 \log(\text{Size}_{i,t}) + \alpha_i + \gamma_t + \varepsilon_{i,t}$$

where  $y_{i,t}$  is either ISC per capita or the ISC intensity for canton  $i$  in year  $t$ . The right-hand side of the equation contains the various explanatory variables studied. *RightParl* measures the share of right-leaning MPs in the cantonal parliament. *RightExec* measures the share of right-leaning elected officials in the executive branch. *Minister* is an index

representing the political leaning of the cantonal finance minister (larger values mean more right wing). *Election* is a dummy variable taking 1 in an election year. *Maturity* is an index measuring the accounting maturity of cantonal standards compared to the IPSAS (larger values mean more aligned with the international standards). *Depreciation* and *Interests* respectively denote amounts of depreciation and interest payments per capita. *Size* is measured either as the cantonal population in thousands or the total expenditure to cantonal GDP ratio.  $\alpha_i$  and  $\gamma_t$  are respectively canton and year specific fixed effects and  $\varepsilon_{i,t}$  is the error term. This fixed effects approach allowed us to precisely pin down the effect of the different factors on ISC use. However, we could not include time invariant characteristics, such as main language, rural/urban or the number of departments, as these are captured by the canton fixed effect. Depreciation, interest payments and the measures of size enter the equation in natural logs due to their skewed distributions. Given the elicited anticipations concerning the effect of the dependent variables on ISC use, we expected that  $\beta_1, \beta_2, \beta_3 > 0$ , while refraining from ex ante judgement concerning the remaining coefficients:  $\beta_4, \beta_5, \beta_6, \beta_7, \beta_8 < 0$  which could exhibit either sign.

### Descriptive evidence: intensity, differentiation, and precision of ISC entries

To describe the use of ISCs in Swiss cantons, we designed three indexes tracking the degree to which non-binding ISC standards were implemented. Simply looking at average cantonal ISC amounts was insufficient as it would hide a large heterogeneity in the actual accounting policies related to the recommended ISC use. Due to the detailed information available on cantonal financial reports, we constructed the indicators of intensity, differentiation, and precision. These measures reflect how and to what degree the different cantonal governments implemented the recommended ISC standards.

#### ISC differentiation

This index enabled us to depict how cantons record the economic nature of the internal transactions across the categories available in the chart of accounts. The higher the number of categories used, the more distinctively the cost of provided service is approximated through the statement of financial performance. Table 3 shows which proportion of total ISC goes to which sub-category. This means that this table somehow characterizes a qualitative difference in

ISC, unlike Figure 1 which indicates an overall quantitative difference. Indeed, the persistently large differences between median and mean in Table 3 implies an asymmetric distribution of the ratio, showing a strong heterogeneity in how cantons resort to various ISC sub-categories. For instance, considering sub-category 398, 91% of the ISCs concern transfers in the most extreme canton and 0% at the other extreme canton. In the same table, the proportion of cantons using each sub-category is mentioned in the right column. Of course, none of the sub-categories are used by all cantons.

### ISC precision

Rounded figures signal that internally charged amounts are only roughly estimated, which may indicate that a government is less interested in acquiring an accurate picture of the true cost of service provision. In Figure 2, we consider the share of ISC book entries rounded to the tens of thousands and higher. According to this, rounding to a larger number indicates a more imprecise use of ISCs. A lower level of rounding (i.e. to the thousands) would not have been consistent since many cantons publish their financial statements at the thousands level. The degree of ISC precision varies significantly among cantons. More than 40% of the ISC amounts recognized by the canton of Jura (JU) in its financial statements are rounded to the tens of thousands and higher, i.e. less than 60% are more precisely recognized (dark part of the bar). The cantons of Vaud (VD) and Valais (VS) are examples of cantons where all amounts are recorded with a higher degree of precision.

ISC precision is also reflected by the number of sub-categories used by each canton out of the eight made available in the chart of accounts. The higher the number of sub-categories, the more precisely the nature of the

internally consumed services are recorded and reported. Figure 2 demonstrates this, while separating the subcategory titled 'other internal service charges (399)' as it is a residual sub-category and thus unfit to reflect a precise recognition of ISC. None of the cantons used all sub-categories during the 2016–2018 period. However, the canton of Glarus (GL) reports its internal consumption with the highest possible degree of precision by using all 7 specific sub-categories available (precise transactions) and giving up the residual sub-category 399. At the other end (on the right in Figure 3), two cantons (Bern BE and Aargau AG) report ISCs only in the residual sub-category 399.

### ISC intensity

The intensity variable tracked the overall proportion of ISC implementation as well as the size of the various cantons. We used the variable as the main dependent variable in our regression analysis. Figure 3 shows the distribution of the average intensity of ISC use in the cantons throughout the 2016–2018 period. It reveals a strong heterogeneity in the intensity of ISC use. Cantons such as Lucerne (LU) and Solothurn (SO) have ISCs that amount to more than 10% of their total expenditures, while others, such as Geneva (GE), Zug (ZG) or Fribourg (FR), have ISC intensity levels below 1%. This designates a strongly differentiated implementation of the CFM recommendation. Interestingly, the average ISC intensity across cantons is around 5% only. This percentage is only half of what the CFM figured out when issuing its recommendation (CFM, 1982). Such a large difference between expected and actual ISC intensity also indicates that the degree of discipline in implementing the recommendation varies significantly among cantons.

Overall, this depiction shows that the cantons have unevenly enforced the CFM's recommendation to use ISCs

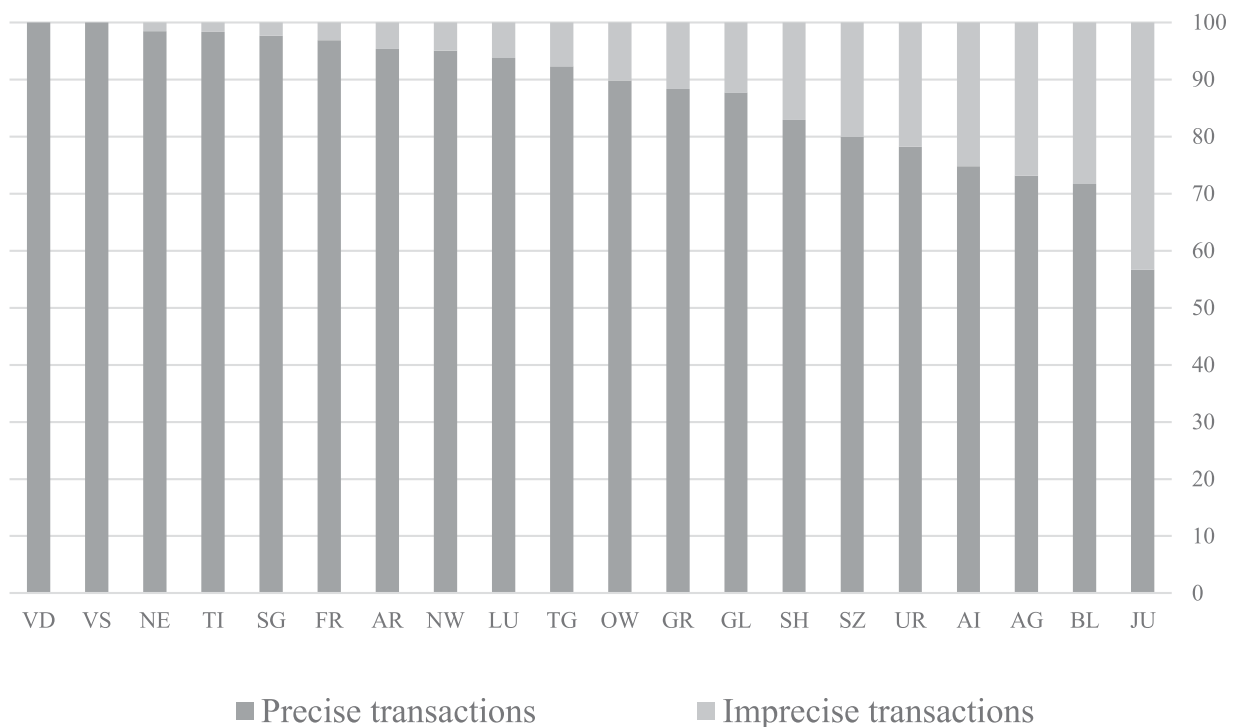
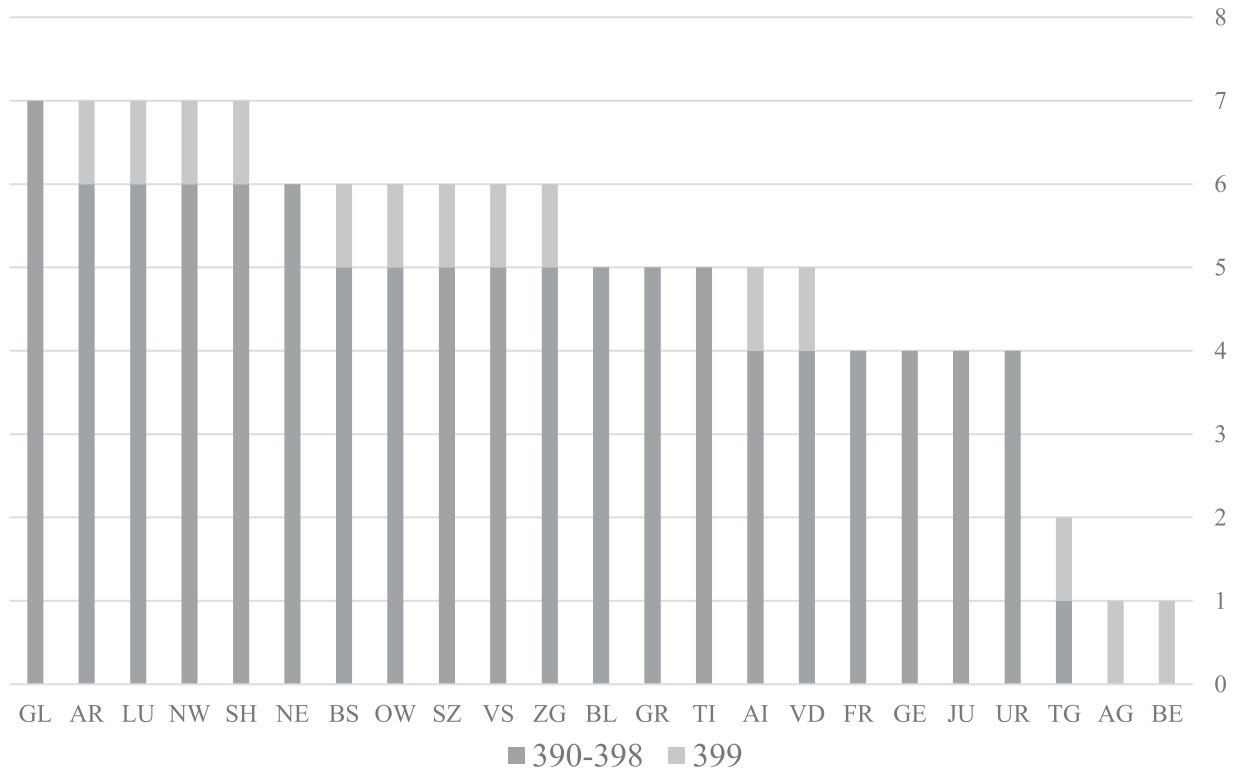


Figure 1. Share of precise and imprecise transactions in each canton.

Note: Dark blue bars represent 'precise' ISC entries, meaning that they are rounded to the ten-thousandth or below, over the total number of ISC transactions. Information is taken from the general-purpose financial reports from each canton.



**Figure 2.** Number of ISC sub-categories used per canton.

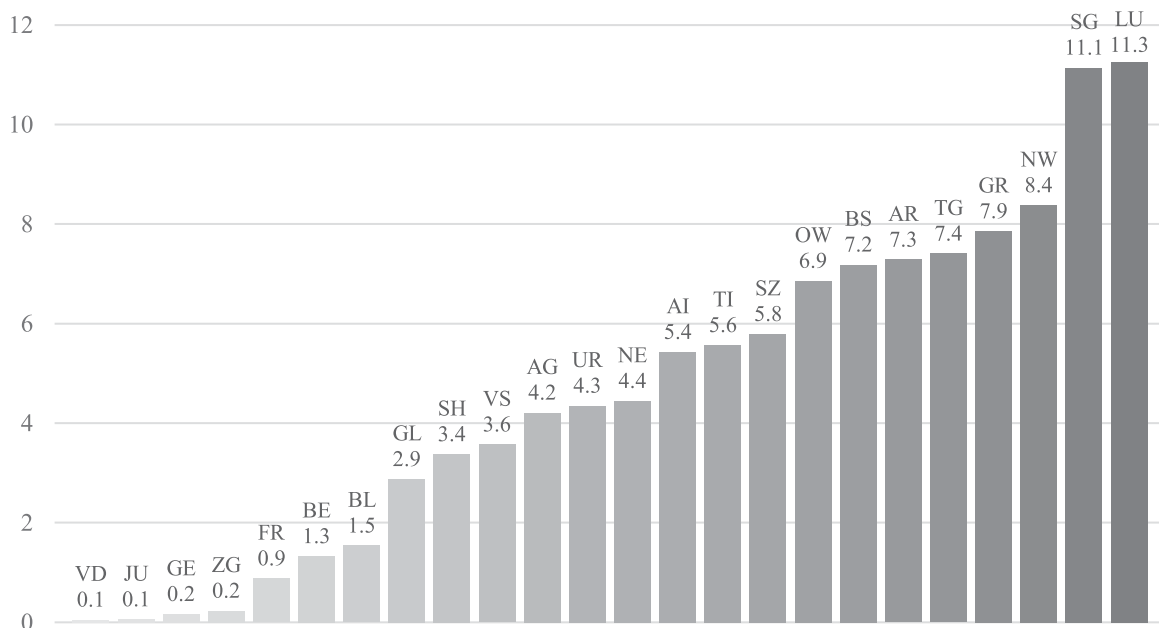
Notes: Dark blue bars represent the use of subcategories 390 to 398 which are specific entries (see Table 1 for detailed information). Light blue bars exhibit the use of subcategory 399 which can be considered as a residual subcategory. Sub-categories are given by CFM (1982).

for improving information on the cost of public service provision. Practices diverge highly, meaning that the actual logic behind ISC entries varies from canton to canton. This is not a new issue, as it was already emphasized by Chang and Freeman (1991, p. 1) for the USA: ‘the lack of definitive authoritative standards and guidance for the use of ISFs clearly is a major reason for these inconsistencies, the abject diversity in practice, and the resultant noncomparability’. In the Swiss case, although the CFM introduced ISC categories into the chart of accounts, it did

not provide the cantons with any authoritative requirement in terms of how to use them, beyond the rather vague description of their nature.

### Regression results

In Table 4, we show OLS estimations without (columns 1 and 3) and with fixed effects (columns 2 and 4) on ISCs per capita and ISC intensity, taken from our regression equation above.



**Figure 3** – ISC intensity per canton.

Notes: Intensity is computed by dividing the sum of ISCs by overall expenses. The intensity is the 2016–2018 cantonal level average. Information is taken from the general purpose financial reports for each canton. Cantons are ranked by level of intensity.



**Table 4.** Regression results.

	log ISC per capita		log ISC intensity	
	(1)	(2)	(3)	(4)
Constant	6.239*** (0.8851)		-1.340 (2.908)	
<b>Political variables</b>				
Right-leaning parliament	1.615** (0.7291)	2.877*** (0.6670)	1.117 (0.8789)	2.704*** (0.7670)
Right-leaning executive	0.8312 (0.8213)	-0.3959 (0.6828)	0.8279 (0.7832)	-0.4613 (0.6824)
Political leaning finance minister	-0.0153 (0.0948)	-0.0006 (0.0551)	-0.0073 (0.0748)	-0.0092 (0.0568)
Election year	0.0472** (0.0190)	-0.0132 (0.0342)	0.0359 (0.0216)	-0.0171 (0.0359)
<b>Accounting practices variables</b>				
Accounting maturity	-0.0647 (0.0806)	-0.1402 (0.1721)	-0.1373 (0.0839)	-0.1223 (0.1749)
log Depreciation	0.3320* (0.1796)	0.0543 (0.0965)	0.1342 (0.1650)	0.0776 (0.1056)
log Interests liabilities	0.0028 (0.0996)	0.3317** (0.1548)	-0.0246 (0.1310)	0.3170* (0.1607)
<b>Structural variables</b>				
log Population			-0.1386 (0.2496)	-0.7612 (3.156)
log Government size	-0.2029 (0.2120)	0.0150 (0.1554)		
Canton fixed effect	No	Yes	No	Yes
Year fixed effect	No	Yes	No	Yes
Observations	738	738	738	738
R <sup>2</sup>	0.10522	0.73833	0.09106	0.76193
Within R <sup>2</sup>	–	0.13591	–	0.12120

Notes: The coefficients displayed in this table stem from the regression of ISCs per capita or intensity on the various variables of interest. ISC intensity, government size, depreciation and interest payments are based on the cantons' statements of financial performance. Financial maturity of different canton-years is based on Soguel and Luta (2021). Political variables are taken from the Swiss statistical office. Standard errors shown in parenthesis are robust and clustered at the cantonal level. Significance corresponds to \*p < 0.1; \*\*p < 0.05; \*\*\*p < 0.01.

The coefficient on the political leaning of the parliament is positive and strongly significant. The estimate is weakly significant and positive in the OLS regressions and becomes more significant when the fixed effects are added, with both the ISCs per capita and ISC intensity as dependent variables. For the executive and finance ministers' political leaning, we found no significant or stable coefficient for either variable. These results signal the primacy of parliaments over the executive branch in the Swiss political system. This finding may differ in countries where the executive power is stronger compared to the legislative. Election years seem to experience a stronger use of ISCs per capita and ISC intensity when looking at the OLS coefficients in columns 1 and 3. However, when considering yearly and cantonal fixed effects, the effect loses significance and changes sign.

It might have been expected that jurisdictions in which the accounting policy is more mature, more advanced would show a higher ISC intensity. This was not the case because the estimated coefficients on 'maturity' were insignificant. An explanation could be the fact that the CFM did not change or reinforce its recommendations concerning ISCs when revising its accounting model in 2008. Although the cantons improved their accounting policies, they did not resort differently to ISCs. Depreciation per capita shows a positive effect significant at the 10% level when looking at column 1. The coefficient, however, strongly diminishes when looking at the fixed effect estimation. Interest payments, on the other hand, tend to become significant in

the fixed effects regressions of columns 2 and 4. The results of these coefficients show that infrastructure management is rather decentralized and thereafter depreciation directly booked at the level of each ministry. On the contrary, debt management is usually centralized in the cantonal ministries of finance for efficiency reasons. Therefore, ISCs are seemingly used to share the burden of servicing the centrally accumulated debt with the other ministries. This also indicates that ISCs are used to unilaterally allocate the cost from centrally made decisions rather than for reflecting the cost of in-house services purchased by internal entities.

Concerning government size, although the variable on population has a negative sign in columns 3 and 4, it is not significant. Similarly, we did not find a significant effect of the total expenditure to GDP ratio, as seen in columns 1 and 2. Therefore, structural variables do not seem to play a role in the use of ISCs.

The regression results suggest that two main mediators of ISC use within the various cantons may explain the use of ISCs. First, we observed that the political preferences of a canton seem to have a large influence on both the per capita use of ISCs and their intensity. The right-leaning tendency of parliaments predictor can be seen as a proxy for a traditional approach of administrative organization, close to the Weberian rational legal model of bureaucracy depicted, for instance, by Udy (1959). In this framework, ISCs would be strongly connected to a more zealous implementation of the recommended standards. Conservative preferences are thereby linked to a more stringent application of ISCs.

Second, we observed that interest payments correlate strongly with ISCs per capita, and slightly less with ISC intensity. This suggests that ISC book entries are mainly used as a way to share the debt burden among the different ministries within governments. This result contrasts with the idea that ISCs should be used as a tool to record the true costs of public services by accounting for transactions within the administration (CFM, 1982). The coefficients on interest payments should, however, be considered as correlations and not as a causation. The possibility of a reverse causality cannot be excluded, which would occur if a form of moral hazard is created by the ISC system: spending ministries may well consider ISCs a way of mutualizing the debt burden, even though debt results from their claim for additional expenditure that eventually trigger deficit and debt.

## Conclusion

Our study adds to the literature on ISCs, the effectiveness of accounting standards, and cost-accounting in the public sector. By giving decision-makers precise information on costs, the use of ISCs should, in theory, put more pressure on business units within a public administration, increasing operating efficiency and consequently reducing deficits. In one of the few existing studies, however, Clémenceau and Soguel (2012) were not able to validate any such impact of ISCs in a study examining the Swiss cantons. They found no correlation between the level of ISCs and the level of expenditures or deficits. Our reaction to this finding was to question the way ISCs are used and implemented in practice. Our suspicion was that a large gap may exist between the idea of recommended accounting standards

and the accounting policies that are implemented by entities subject to non-binding standards. In the case of ISCs, a discrepancy might exist between the initial goal of the ISCs—namely, helping to reflect more faithfully the cost of providing public services—and the actual manner of recording ISCs. It isn't enough to simply to propose such an accounting policy. What should eventually matter is how meticulously the policy is implemented in day-to-day accounting practices. Based on our results, we conclude that the recommendation of the intercantonal Conference of Cantonal Finance Ministers—the Swiss body dedicated to co-ordinating cantons on fiscal matters—has been a failure. By this, we mean that, in general, cantons do not register ISCs rigorously. So it should not come as a surprise that ISCs are not able 'to promote a cost-based way of thinking' (CFM, 1982, p. 14).

In examining ISC use among Switzerland's cantons between 2016 and 2018, we noticed a broad heterogeneity of practices. First, the cantons did not take full advantage of the differentiating possibilities provided by the harmonized chart of accounts, since they made a very heterogeneous use of the available eight ISC sub-categories. Second, the precision in recording and reporting ISCs—measured using the rounding of book entries—also varies greatly among the cantons. The proportion and precision of ISCs reported in cantonal annual reports is thus very different. Finally, the intensity of ISC use, proxied by the proportion of ISCs relative to the overall expenses, varied considerably. Obviously ISCs do not provide decision-makers and, more broadly, users of financial reports, with a faithful representation of the cost of the public services provided by the various business units within the organization.

Our panel regression extended the analysis over a longer period (1980–2017) by exploring how the use of ISCs varied according to three sets of independent variables: political variables, accounting practices and structural characteristics. Our results show that ISCs per capita and ISC intensity is seemingly driven by right-leaning parliaments rather than the political preferences of the executive branches and finance ministers. Other political variables, such as election years, did not impact ISC use. Moreover, the regression coefficients on interest payments indicate a significant and positive correlation with ISCs per capita and ISC intensity. This suggests that cantons make a greater use of ISCs to share the financial burden of centrally made decisions rather than to charge for the cost of any in-house services actually purchased by internal entities.

On a broader scale, our results suggest that accounting recommendations aimed at harmonizing accounting practices, such as what is likely to happen with the IPSAS within the European union, might not deliver what they are expected to, especially if they are non-binding or remain overly superficial. Because the Swiss decentralized case is characterized by economic, political, and cultural differences within a homogeneous institutional set up, our results may extend to larger economic and political unions such as the EU. Specifically, we conclude from our regression analysis that the implementation of recommended but non-binding standards may vary among countries or regions, and that one of the reasons for that variation seems to be political preferences. Finally, our results indicate that it might be easier—politically and administratively—for governments to accept non-binding accounting standards than binding

ones. Nonetheless, it is eventually the degree and manner with which standards are implemented that determines how financial transparency improves.

## ORCID

Nils Soguel  <http://orcid.org/0000-0002-6683-4206>

Nicola Mauri  <http://orcid.org/0000-0003-3794-9941>

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