High on Fiscal Drugs? Empirical Evidence on Fiscal Equalization Transfers and Fiscal Sustainability of Swiss Cantons

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Abstract

We examine the effect of fiscal equalization transfers on the fiscal sustainability of Swiss cantonal governments between 2008 and 2020. Employing a dynamic fixed-effects fiscal reaction model, we find that a 1 percentage point increase in the debt-to-GDP ratio in the preceding year prompts a 0.12 percentage point rise in the total primary surplus-to-GDP ratio in the current year. However, this response diminishes by 40 percent when transfers from the resource equalization system are excluded from the primary surplus-to-GDP ratio which suggests a dependency on these transfers for maintaining fiscal sustainability. Particularly, cantons with lower fiscal power demonstrate less sustainable policies absent these transfers. Further analyses suggest a potential moral hazard as increases in cantonal debt align with rises in fiscal equalization transfers, and net-positive equalization transfers are only partially utilized to reduce tax burdens. Our findings underscore the need for fiscal equalization systems that effectively balance equitable resource distribution with incentivizing fiscal prudence at the sub-federal level.

1 Introduction

Public finances have come under stress in recent years. Challenges such as the global financial crisis and the COVID-19 pandemic have not only strained fiscal resources but also pushed the topic to the forefront of public debate (Mitchener and Trebesch, 2023; Schuknecht, 2022). As national debt concerns further grow with rising interest rates around the globe, governments need to ensure adequate fiscal buffers to fall back on in the case of further shocks (Organisation for Economic Co-operation and Development, 2021).

The recent crises have highlighted that effective provision of public goods depends on fiscal cooperation and robust fiscal buffers among all levels of government (De Mello and Ter-Minassian, 2022). Still, a majority of states in Germany did not exhibit sustainable public finances over the last decades, for example (Burret et al., 2016, 2017; Fincke and Greiner, 2011; Kitterer, 2007).

The fiscal sustainability of sub-federal systems is shaped by institutional setups. For example, Bury et al. (2023a) provide evidence that direct democracy explains part of the heterogeneity in fiscal reactions to increased debt in Swiss cantons. Claeys et al. (2008) show for Germany that compared to the United States, lower-tier governments shoulder a smaller portion of debt reduction costs than the federal level due to a lower fiscal autonomy among German states. Fundamental to our study, Potrafke and Reischmann (2015) and Feld et al. (2020) reveal that sub-federal public finances in the United States and Germany maintain fiscal sustainability primarily through fiscal equalization transfers. Such transfers may even implicitly subsidize debt, thereby undermining the financial stability of the systems.

We contribute to the literature on sub-federal fiscal sustainability and fiscal equalization transfers by examining the fiscal reactions of Swiss cantons. We investigate whether the debt-to-GDP ratio in the preceding period affects the primary surplus-to-GDP ratio in the current period. We empirically show that over the period 2008 to 2020 Swiss cantons have had, on average, adopted sustainable fiscal strategies. However, the response of the primary surplus-to-GDP ratio to an increase in the debt-to-GDP ratio in the preceding year is 40 percent smaller once transfers from the resource equalization system are excluded, suggesting an institutional dependence of cantonal fiscal sustainability on such transfers. The fiscal reaction is further contingent on the fiscal capacity of a canton. Cantons receiving resource equalization transfers show a diminished fiscal response in the absence of these payments. Finally, we reveal that in contrast to the system's intended goals, resource equalization transfers correlate positively with debt levels and are only partially utilized to alleviate tax burdens.

Our findings hold broad implications for policymakers worldwide as the Swiss setting is well suited for examining the isolated effects of fiscal equalization systems. First, cantons enjoy a

high degree of fiscal autonomy, and thus may flexibly react to incentives of the fiscal system. Second, cantonal governments operate in a regulatory framework with high transparency and simplicity on determinants to receive financial flows based on the fiscal equalization system introduced in 2008. Finally, equalization payments constitute a significant portion of public budgets in Swiss cantons.

The remainder of the paper is organized as follows: section 2 discusses the institutional setting in Switzerland. Descriptive statistics about cantonal fiscal sustainability are shown in section 3. Section 4 outlines the data and empirical strategy. Section 5 presents the findings, followed by robustness checks in section 6. The paper concludes with section 7.

2   Institutional Background

The cantonal level accounts for approximately 40 percent of Switzerland's total public expenditures and revenues (Burret and Feld, 2018a), and thus plays a major role in the public finance architecture. Most importantly, Swiss cantons enjoy a high degree of tax and public spending autonomy (Organisation for Economic Co-operation and Development, 2023). They can design their own income tax schedules and decide autonomously on a substantial portion of public expenditures (Kirchgässner, 2013; Schaltegger and Feld, 2009). Moreover, almost all of the cantons have independent fiscal rules. Their design as well as the sanction mechanisms vary substantially across cantons (Burret and Feld, 2018b). The Swiss cantons also prioritize different spending areas. Education expenditure may serve as an example, where large differences are discernible among the cantons (Biedermann et al., 2023). Overall, the cantons' fiscal autonomy and capacity allows for a flexible response to institutional incentives.

The fiscal equalization scheme, which stems from a reform in 2008, is a major component in the fiscal system of Switzerland. It aims to compensate for heterogeneities that arise due to the fiscal autonomy of the Swiss cantons. Before 2008, the system consisted of a complicated and non-transparent scheme of vertical fiscal transfers (Leisibach and Schaltegger, 2019; Schaltegger and Frey, 2003). Since 2008, the revised system increased transparency for cantonal policymakers. Specifically, the reformed fiscal equalization system has streamlined resource redistribution, both regarding its aim and instruments. Its intended goal is to raise the fiscal capacity of the least resource-endowed cantons to 86.5 percent of the Swiss average. A canton shall have only limited power to directly manipulate its own financial strength through budget-affecting tax policy, which used to determine both received and paid transfers in the previous scheme. Furthermore, the reformed system does not steer activities in specific policy areas through its transfers unlike the previous system.

Two permanent instruments determine equalization payments in the reformed fiscal equalization system: (1) the resource equalization which ensures adequate financial capabilities for fiscally weaker cantons, and (2) the equalization of burdens that compensates for structurally induced burdens such as geographic disadvantages (Leisibach and Schaltegger, 2019).

Resource equalization shall ensure that each canton has sufficient financial resources to perform its public tasks and create effective incentives that increase locational attractiveness (Federal Finance Administration, 2023c). To calculate the resource equalization transfers to be paid and received, the so-called cantonal resource index is applied. The cantonal resource indices are computed by comparing the cantonal resource potential per inhabitant, i.e. a representation of potential tax revenues, to the Swiss average which has an assumed value of 100. Specifically, the resource index is determined, among other factors, as follows:[1]

$$RI_i^T = \frac{\gamma RP_i^t / \gamma B_i^t}{\gamma \sum_{j=1}^{26} RP_j^t / \gamma \sum_{j=1}^{26} B_j^t} \times 100 = \frac{\gamma (E_i^t + \alpha^t V_i^t + \beta_k^t G_i^t) / \gamma B_i^t}{\gamma \sum_{j=1}^{26} (E_j^t + \alpha^t V_j^t + \beta_k^t G_j^t) / \gamma \sum_{j=1}^{26} B_j^t} \times 100$$

where RI stands for canton's $i = 1, ..., 26$ resource index value in year T. RP describes the resource potential, B stands for the population number, E represents the taxable income of natural persons, V stands for wealth, α describes the average return on assets, G denotes corporate profits and β_k determines how these profits are weighted. $\gamma = \frac{1}{3} \sum_{t=T-6}^{T-4}$ is an abbreviation for the average of the last three available tax years, i.e. the resource index is based on the average tax base (Leisibach and Schaltegger, 2019).

A resource index below a value of 100 means that a canton receives transfers and is a beneficiary of the resource equalization system. Cantons with a resource index of less than 70 are fiscally supported up to the guaranteed statutory minimum of 86.5 percent of the Swiss average. The payments to cantons with a resource index between 70 and 100 are calculated using a progressive schedule. An index above a value of 100 indicates that a canton has to contribute to the system. Contributions are determined linearly. The contributing cantons finance around 40 percent of the system, whereas the central government finances the remaining 60 percent (Federal Finance Administration, 2023c). The resource index serves as a fiscal capacity indicator, in line with the internationally common approach to determine the amount of equalization transfers (Hansjörg and Junghun, 2016).

Overall, the transfers are calculated on published, transparent mechanisms. Cantons have full oversight over the system and can optimize their budget policies accordingly.

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[1] This representation is simplified and only contains the most important elements. All components and the algorithmic formula can be found in Federal Finance Administration (2019).

Figure 1 illustrates the resource indices of the cantons prior to and after the equalization payments in the year 2020. To calculate the resource index after resource equalization payments, transfers received are converted into taxable resources. In the case of receiving cantons, they are added to the resource potential. Conversely, in the case of contributing cantons, they are subtracted from the resource potential. The figure highlights that the system increases the resource index of recipient cantons, while concurrently lowering the index for contributing cantons due to the payments.

Figure 1: Resource equalization, 2020
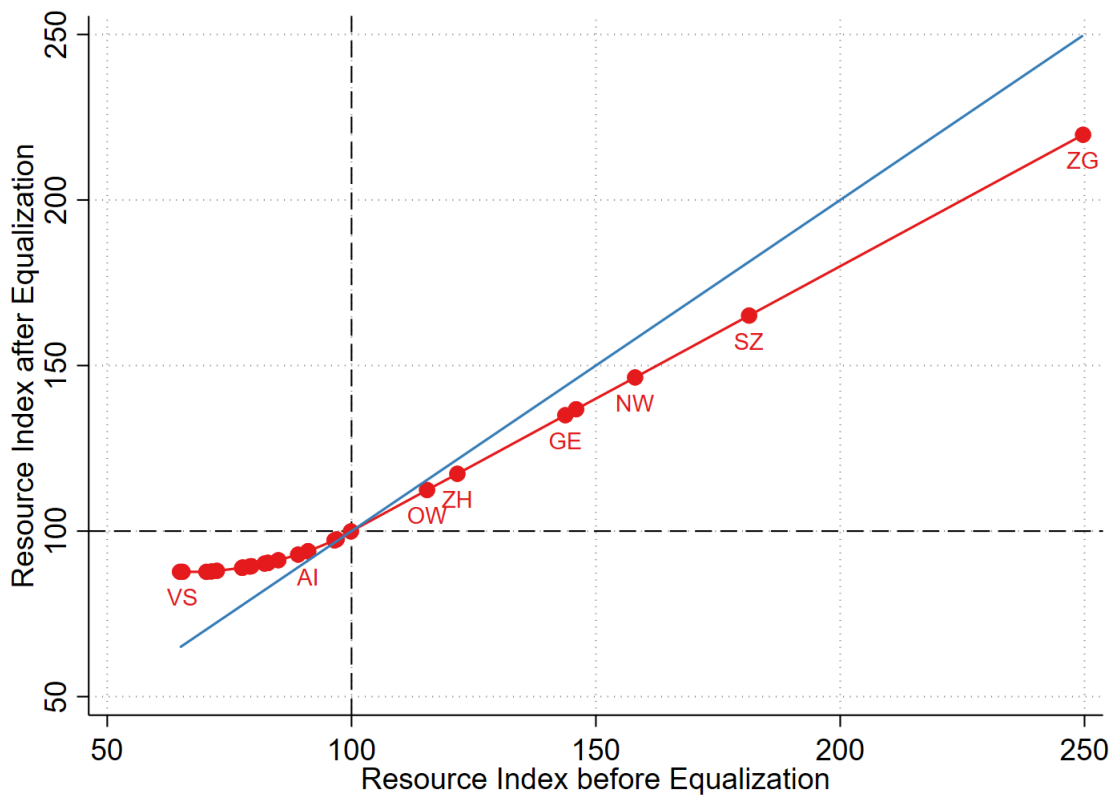
Data source: Federal Finance Administration (2023a)

In terms of volume, resource equalization is the largest part of the fiscal equalization system. In 2020, approximately 4.3 billion Swiss francs were disbursed for resource equalization from a total of 5.3 billion Swiss francs transferred via the full fiscal equalization system (Federal Finance Administration, 2023a). Figure 2 shows the resource equalization payments in Swiss Francs per capita and as a share of total revenues or expenditures for each canton. It illustrates the magnitude of these payments and their importance for cantonal fiscal policy.

Figure 2: Resource equalization transfers per capita and as a percentage of revenues or expenditures for each canton, 2020
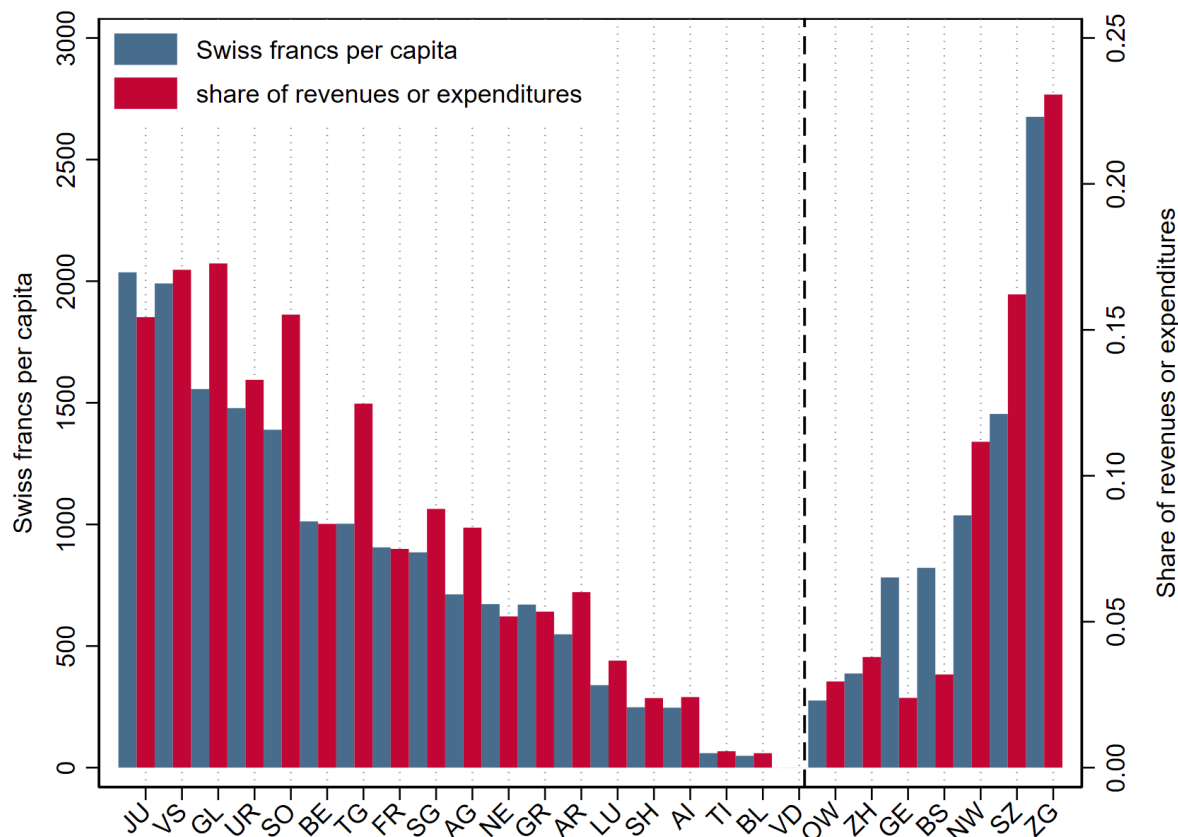
Note: The cantons on the left side of the dashed vertical line received transfers from the system, while the cantons on the right side of the dashed vertical line contributed to the system in 2020. For recipient cantons, the red bars display the resource equalization transfers as a share of total revenues, while for contributing cantons they show the payments as a share of total expenditures.

Seven cantons paid into the system while 19 cantons received payments in 2020. These payments form a substantial part of cantonal finances. For instance, contributions are as high as 2'676 Swiss francs per capita or 23.1 percent of total public expenditures for the canton of Zug. On the receiver side, the cantons of Valais and Jura received transfers of 1'991 and 2'037 Swiss francs per capita from the resource equalization system in the same year which comprised 17.1 percent and 15.4 percent of total public revenues for the entities (Federal Finance Administration, 2023a,b).

A relevant component of the incentive structure of the Swiss resource equalization system are marginal absorption rates which are shown in figure 3.

Figure 3: Average marginal absorption rates for each canton, 2008-2020
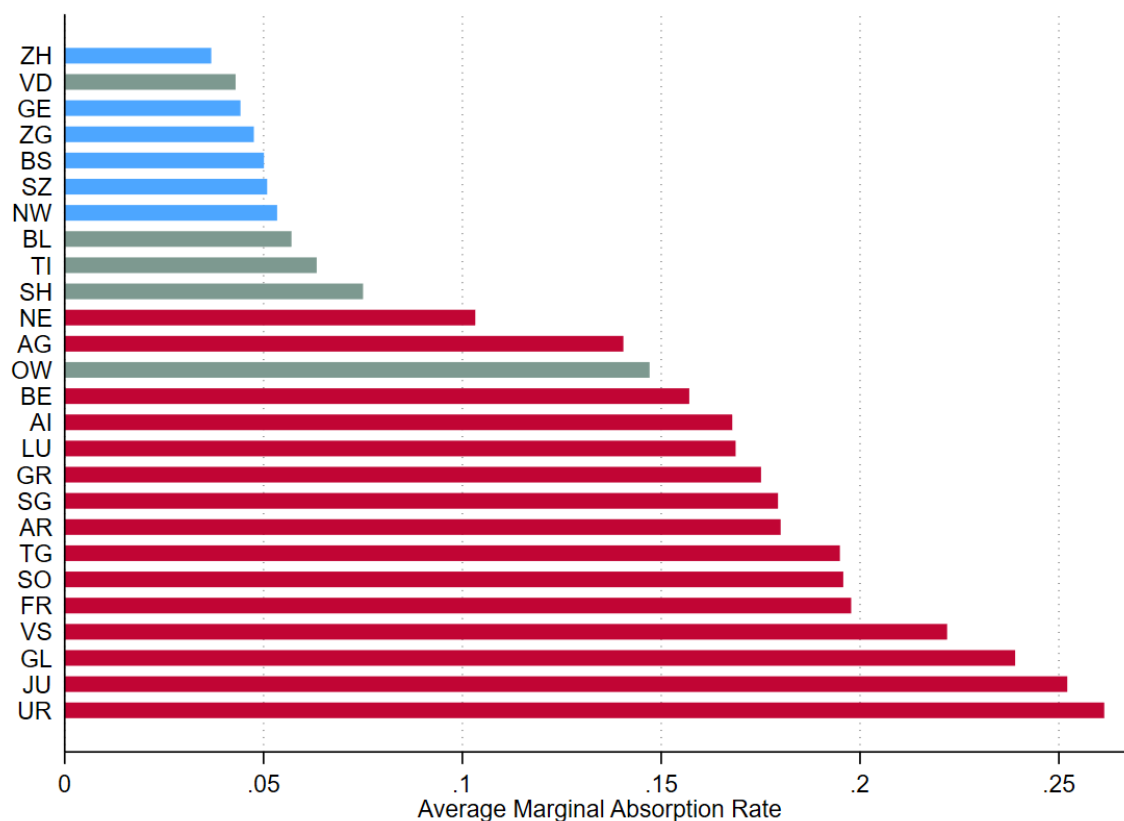
Data source: Federal Finance Administration (2023a)

Note: Blue cantons have consistently paid into the system from 2008 to 2020, red cantons have consistently received payments. Grey cantons have in some years paid into the system and in some years received payments.

The marginal absorption rate measures how changes in a canton's resource potential impact its transfer payments [2].The marginal absorption rates are calculated without taking the tax burden into account. They thus show the direct effect of the resource equalization on transfer payments which is preferred because different tax bases are taxed differently within and across the cantons. The additional tax revenue from new taxable resources needs to at least equal the increase in transfers paid or decrease in transfers received to be fiscally worthwile. Overall, due to high marginal absorption rates, investments to enhance the locational attractiveness for new

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[2] For example, the marginal absorption rate for the recipient canton Jura of 25 percent means that if the resource potential increased by 100 Swiss francs, the transfers received by the canton would decrease by about 25 Swiss francs. The opposite is true for the donor canton Schwyz with a marginal absorption rate of 5 percent: If the resource potential of the canton increased by 100 Swiss francs, the canton would have to contribute about 5 Swiss francs more into the system.

tax bases are financially hardly worthwhile for most recipient cantons, while the incentives are less distorted for the donor cantons.

3   Descriptive statistics

As an intuitive measure for fiscal sustainability, we descriptively examine the relationship between debt and primary surplus. The standard primary surplus is calculated by subtracting non-interest public expenditures from public revenues and scaling it to cantonal GDP. Alternatively, we calculate the primary surplus by considering revenues and expenditures, excluding payments from resource equalization minus interest payments, and again scale it to GDP. Since cantonal governments cannot directly influence resource equalization transfers, the primary surplus, excluding these transfers, offers a more discretionary view of cantonal finances in response to changes in debt.

Figure 4 shows both yearly primary surplus-to-GDP ratios of the Swiss cantons over the period 2008 to 2020.

Figure 4: Comparison of primary surplus incl. all transfers and primary surplus excl. resource equalization transfers

- — Primary Surplus incl. Transfers
- — Primary Surplus excl. Resource Equalization
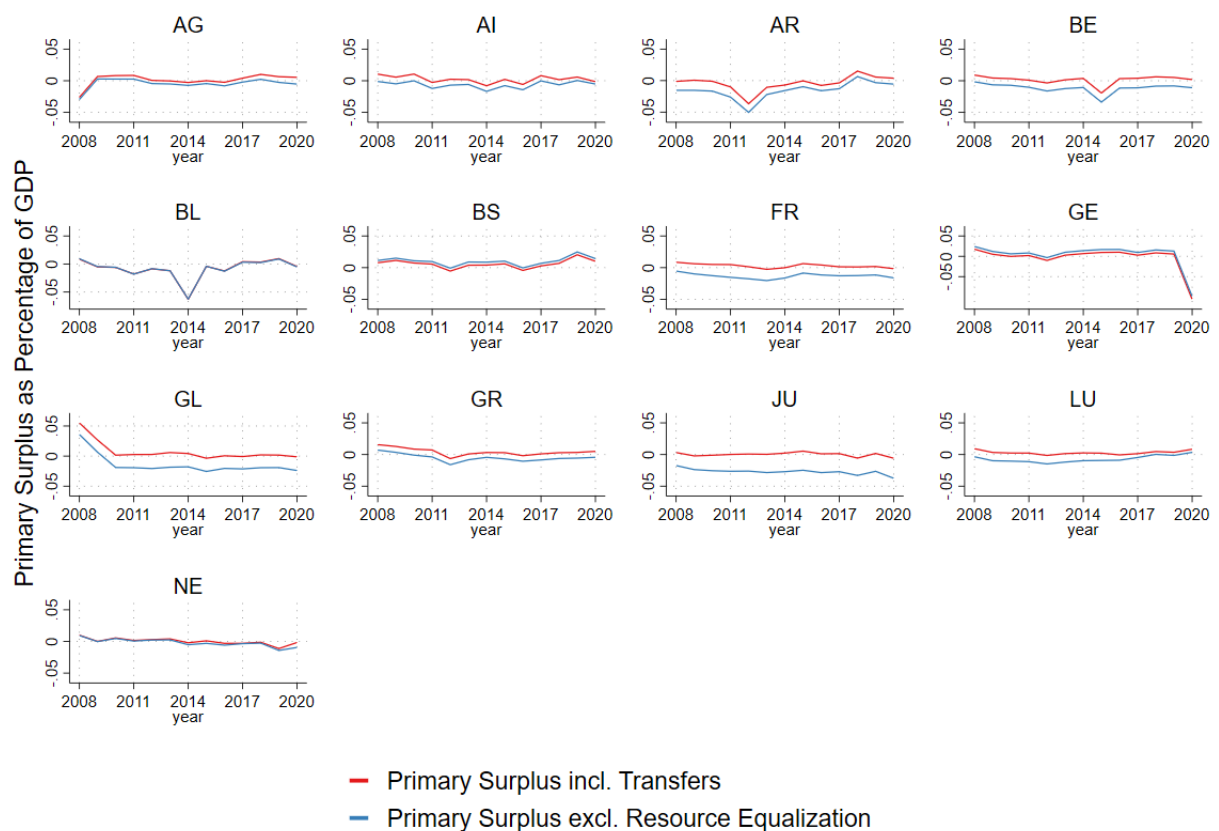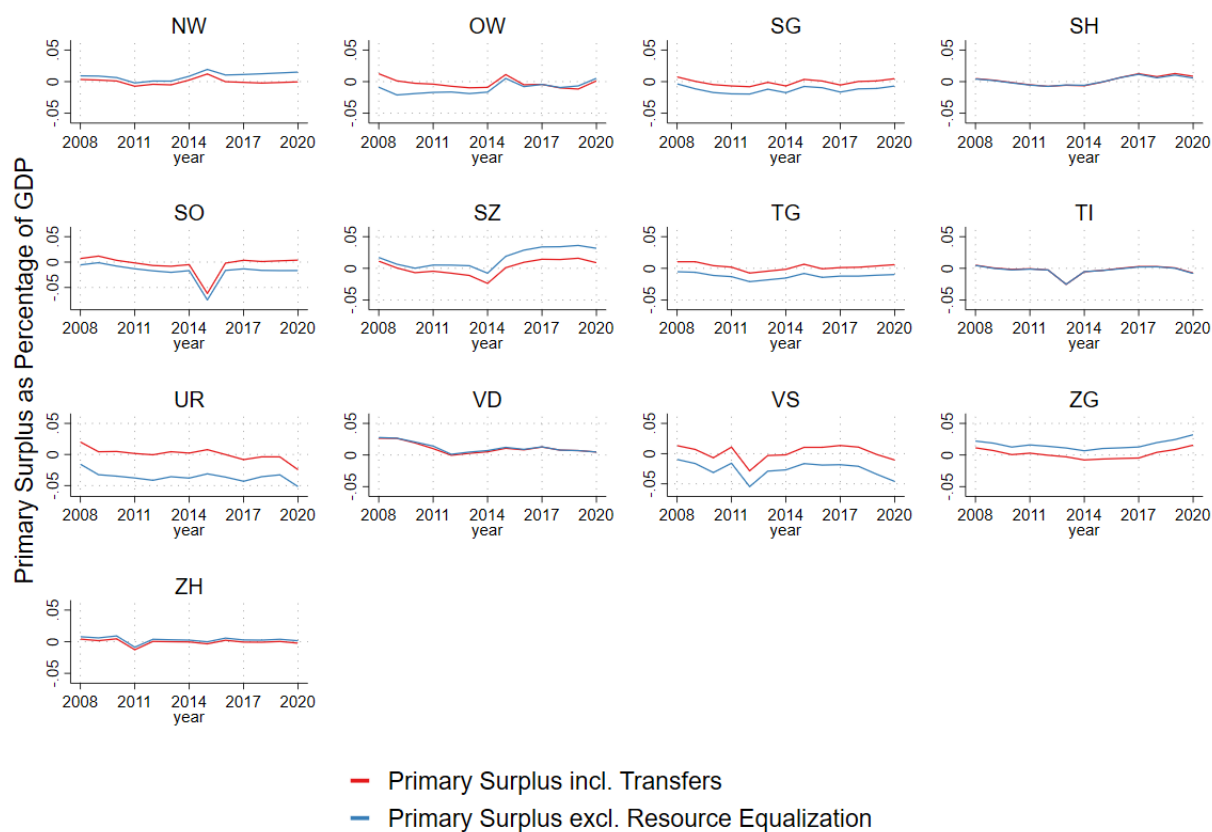
Data source: Federal Finance Administration (2023b)

Notably, certain cantons like Bern, Fribourg, Jura and Valais would have consistently booked deficits without transfers from the resource equalization system. Conversely, contributing cantons such as Schwyz and Zug would have substantially improved their fiscal balances without such payments. These findings indicate the importance of the resource equalization system for cantonal fiscal dynamics.

The relation between the resource index before equalization and the two measures of the primary surplus-to-GDP ratio is shown in figure 5.

Figure 5: Resource equalization and primary surplus
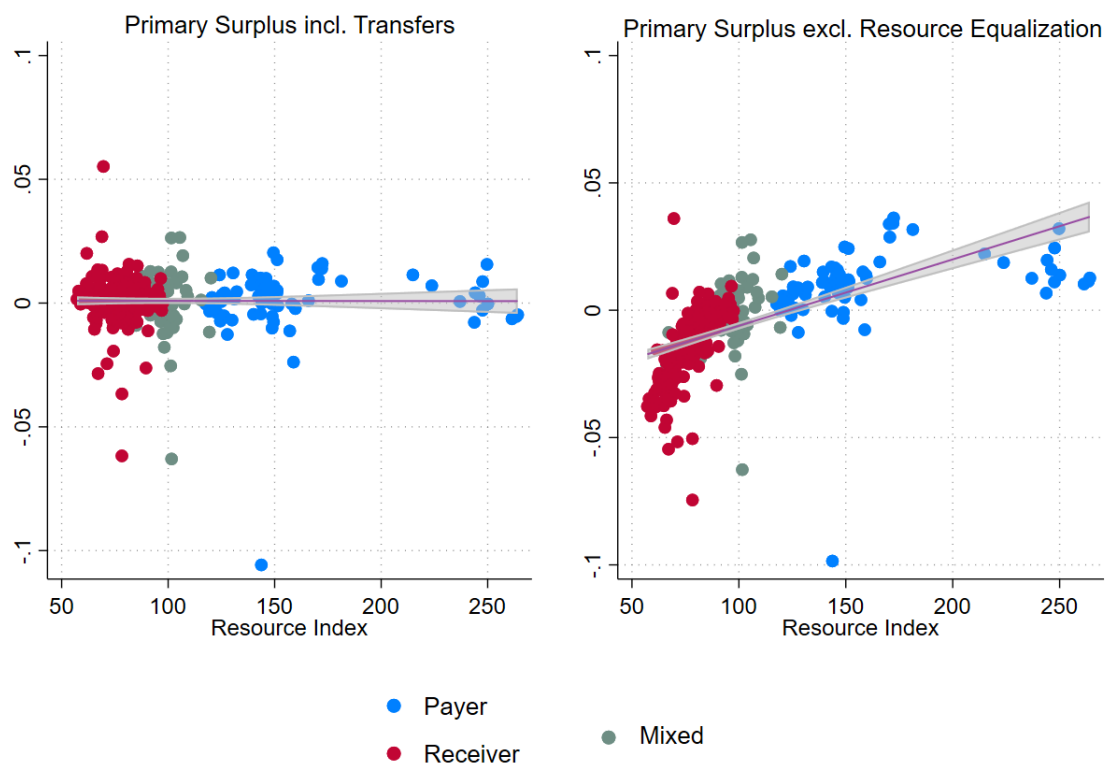
Data source: Federal Finance Administration (2023a,b)

Note: Blue cantons have consistently paid into the system from 2008 to 2020, red cantons have consistently received payments. Grey cantons have in some years paid into the system and in some years received payments. The pink line denotes the correlation and the corridor around it the 95 percent interval.

In the standard primary surplus measure, which includes resource equalization transfers, the correlation with the resource index is minimal, hovering near zero. On the other hand, the alternative primary surplus measure, excluding resource equalization, shows a positive correlation with the resource index. This is expected, as the primary surplus of cantons that receive payments from the system, i.e. those with a resource index under 100, should be lower after accounting for these payments.

The average standard primary surplus including transfers for all cantons between 2008 to 2020 was 0.09 percent. For cantons which constantly remained receivers from resource equalization over the observation period, primary surplus including resource equalization transfers averages 0.13 percent, and for constant payer cantons it averages 0.09 percent. In the case of the primary surplus excluding resource equalization transfers, the average primary surplus-to-GDP ratio of all cantons is -0.62 percent. This value is -1.40 percent for constant receivers, while

constant payers exhibit an average ratio of 0.97 percent. The averages indicate that the fiscal performance of cantons is affected by resource equalization transfers. This follows directly from the design of resource equalization. If the fiscal reaction to increases in the debt-to-GDP ratio also depends on transfers from resource equalization, however, this indicates that the receiving cantons follow less fiscally sustainable policies without payments from the system.

4   Empirical Approach and Data

We follow Potrafke and Reischmann (2015) and Feld et al. (2020) and employ the following dynamic fixed-effects baseline model to examine the effect of resource equalization transfers on primary surpluses of cantons:

$$Primary\,Surplus_{j,it} = \alpha_j Public\,Debt_{it-1} + \sum_{l=1}^{2} \beta_{j,kl} Z_{kl,it} + \gamma_j Primary\,Surplus_{j,it-1} +$$
$$\eta_i + \zeta_t + \varepsilon_{j,it}$$
(1)

where *Primary Surplus* represents the primary surplus-to-GDP ratio in canton $i = 1,...,26$ in year $t = 2008,...,2020$ for $j = 1,2$ measures of the primary surplus: the standard measure of the primary surplus, i.e. subtracting non-interest public expenditures from public revenues including transfers from resource equalization, and an alternative primary surplus with revenues and expenditures excluding payments from resource equalization minus interest payments. We obtain data on primary surpluses and cantonal debt of the Swiss cantons from the Federal Finance Administration (2023b). Cantonal GDP is obtained from BAK Economics (2023) for years up to 2008 and from the Federal Statistical Office (2023) for the years from 2009 until 2020.

Public Debt represents the lagged cantonal debt-to-GDP ratio.

Z is a vector with $k = 1,2$ sets of $l = 1,2$ macroeconomic indicators for aggregate output and government expenditure. Following Potrafke and Reischmann (2015) and based on the tax smoothing theory of Barro (1979), the first set of indicators includes $YVAR = (1 - y_t/y_{tT}) * (g_{tT}/y_t)$ which serves as a business cycle indicator where y_t and g_t denote the actual values of real GDP and real expenditures, while y_{tT} and g_{tT} denote their respective trend values. Thus, YVAR measures the relative deviation of actual output from trend output. If YVAR has a positive value, it indicates that actual output is below trend output, and vice versa. As the second indicator, $GVAR = (g_t - g_{tT})/y_t$ represents the amount of temporary spending above trend spending. A positive value of GVAR indicates actual expenditures above the trend, and vice versa. We construct YVAR and GVAR using expenditures including transfer payments. For the second set of indicators, we follow Bohn (2008) and use the output gap as the difference

between the actual value and the trend value of log real GDP. In addition, we compute the expenditure gap including transfer payments as the difference between the actual value and the trend value of public expenditure relative to GDP. The trend values of all macroeconomic indicators are derived through the Hodrick-Prescott filter using a smoothing parameter of 100 (Hodrick and Prescott, 1997).

As argued by Claeys (2006), Theofilakou and Stournaras (2012) and Feld et al. (2020), fiscal reaction functions should take the lagged dependent variable into account to address dynamic interdependence. We estimate a dynamic panel model, but also report the results without the lagged dependent variable to account for potential Nickell bias.

η stands for canton- and ζ for year-fixed effects.

We employ the cross-sectional dependence test by Pesaran (2004) and find evidence for cross-sectional dependence (see table A.1). Hence, we use Driscoll-Kraay standard errors to account for cross-sectional dependence arising from factors such as spatial and spillover effects.

For a fiscal sustainability analysis at the cantonal level, we employ the model in a cross-sectional set-up without fixed-effects and the lagged dependent variable using YVAR and GVAR as the macroeconomic indicators and robust standard errors.

In a second step, we examine potential differences in fiscal responses depending on the fiscal power of cantons. We employ an amended model for our heterogeneity analyses and include the cantonal resource index as well as its interaction with public debt:

$$
\begin{aligned}
Primary\,Surplus_{j,it} = {} & \alpha_j Public\,Debt_{it-1} + \beta_j Resource\,Index_{it} + \gamma_j Public\,Debt_{it-1} \times \\
& Resource\,Index_{it} + \sum_{l=1}^{2} \delta_{j,kl} Z_{kl,it} + \theta_j Primary\,Surplus_{j,it-1} + \eta_i + \zeta_t + \varepsilon_{j,it}
\end{aligned}
\tag{2}
$$

where $Resource\,Index_{it}$ stands for the yearly values of the resource index before equalization. The yearly values of the resource index before equalization are obtained from the Federal Finance Administration (2023a).

For our third analysis, we empirically test whether transfers from resource equalization are used to increase the locational attractiveness of the cantons by decreasing the tax burden with the following empirical model:

$$
Tax\,Burden_{m,it} = \alpha Transfers_{it-1} + \sum_{l=1}^{2} \delta_{kl} Z_{kl,it} + \gamma Tax\,Burden_{it-1} + \eta_i + \zeta_t + \varepsilon_{m,it}
\tag{3}
$$

where $Tax\,Burden$ describes the tax burden for $m = 1, 2$ types of taxation. First, we use the tax calculator provided by Federal Tax Administration (2023) and cantonal tax laws to compute

the cantonal income tax burden for single households without children with yearly gross incomes of 50'000, 150'000, 250'000, 500'000 and 1'000'000 Swiss francs as well as married couples with two children and household incomes of 50'000, 150'000, 250'000, 500'000 and 1'000'000 Swiss francs, where both spouses contribute half of the income. Second, we estimate the same regression using the shares of taxes paid by the incomes at the top of the distribution in the different cantons from the Swiss Inequality Database by the Institute for Swiss Economic Policy (2023) as the dependent variable. Third, we use the cantonal averages of total corporate tax burdens for different firm structures in Swiss municipalities by Portmann and Staubli (2020).

Finally, we follow Potrafke and Reischmann (2015) and empirically test whether the resource equalization system favors the accumulation of debt with the following empirical set-up:

$$Transfers_{it} = \alpha Public\,Debt_{it-1} + \sum_{l=1}^{2} \delta_{kl} Z_{kl,it} + \gamma Transfers_{it-1} + \eta_i + \zeta_t + \varepsilon_{it} \qquad (4)$$

where $Transfers$ stand for the lagged transfers from resource equalization.

For the last two specifications, we again use Driscoll-Kraay standard errors.

5 Results

The empirical results of the general fiscal sustainability model where we estimate the fiscal reaction to an increase in the debt-to-GDP ratio using both the primary surplus relative to GDP including and excluding transfers from the resource equalization system are shown in section 5.1.

In section 5.2, we explore potential heterogeneity between the cantons by employing the empirical model with an interaction term of the lagged debt-to-GDP ratio and the resource index before equalization.

Finally, we address the effects of the resource equalization system on cantonal budgets as a potential source of moral hazard within the system in section 5.3.

5.1 Fiscal Transfers and Fiscal Sustainability

Table 1 presents the empirical results of the baseline model using the standard primary surplus-to-GDP including all transfers. Columns (1) and (4) are the basic specifications without macroeconomic controls. Columns (2) and (5) control for YVAR and GVAR, while columns (3) and (6) control for the output and expenditure gap variables. Columns (4) to (6) additionally include the lagged dependent variable.

Table 1: Results including all transfers, baseline model, 2008 to 2020

	Dependent variable:					
	primary surplus-to-GDP incl. all transfers					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	0.1642***	0.1319***	0.1322***	0.1565***	0.1220***	0.1223***
	(0.0347)	(0.0186)	(0.0186)	(0.0342)	(0.0180)	(0.0179)
YVAR		-0.1127			-0.0980	
		(0.1923)			(0.1669)	
GVAR		-0.8566***			-0.8663***	
		(0.1602)			(0.1552)	
Output gap			0.0053			0.0042
			(0.0201)			(0.0171)
Expenditure gap			-0.8577***			-0.8672***
			(0.1632)			(0.1576)
Lagged dependent variable				0.1649*	0.2060***	0.2064***
				(0.0857)	(0.0591)	(0.0598)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	338	338	338	338	338	338
Within R^2	0.3195	0.6863	0.6859	0.3327	0.7068	0.7065

Driscoll–Kraay standard errors are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

The coefficients of the lagged debt-to-GDP ratio are statistically significant across all specifications at the 1 percent level. The point estimates in columns (4) to (6) which include the lagged dependent variable range from 0.12 to 0.16, meaning that cantonal governments react to an increase in the lagged debt-to-GDP ratio in period $t-1$ by 1 percentage point by increasing their primary surplus-to-GDP ratio by around 0.12 percentage points in period t. This magnitude is around twice as high as the fiscal reactions found for the US states and the German Länder by Potrafke and Reischmann (2015) which may be explained by greater fiscal autonomy of Swiss cantons.

In table 2 we employ the same empirical approach but use the alternative measure of the primary surplus as the dependent variable without payments originating from the resource equalization system.

Table 2: Results excluding resource equalization transfers, baseline model, 2008 to 2020

	Dependent variable:					
	primary surplus-to-GDP excl. resource equalization transfers					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	0.1155***	0.0837***	0.0841***	0.1042**	0.0705***	0.0708***
	(0.0350)	(0.0153)	(0.0152)	(0.0388)	(0.0173)	(0.0171)
YVAR		-0.0366			-0.0123	
		(0.2573)			(0.2161)	
GVAR		-0.8520***			-0.8638***	
		(0.1573)			(0.1560)	
Output gap			-0.0092			-0.0100
			(0.0245)			(0.0205)
Expenditure gap			-0.8515***			-0.8631***
			(0.1600)			(0.1582)
Lagged dependent variable				0.2323*	0.2642***	0.2644***
				(0.1077)	(0.0824)	(0.0830)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	338	338	338	338	338	338
Within R^2	0.7053	0.8494	0.8494	0.7181	0.8658	0.8659

Driscoll–Kraay standard errors are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

While we find that the effect of the lagged debt-to-GDP ratio is still statistically significant across all specifications at the 1 or 5 percent level, the point estimates are considerably smaller. On average, Swiss cantonal budgets react to an increase in the debt-to-GDP ratio in period $t-1$ by 1 percentage point with an increase of the primary surplus-to-GDP ratio without resource equalization transfers, i.e. by adjusting their core budgets, by approximately 0.07 percentage points in period t. The point estimate is around 40 percent lower than the fiscal reaction of primary surplus-to-GDP ratios including resource equalization transfers. This finding suggests that without the resource equalization system, Swiss cantonal fiscal policies are less sustainable on average.

Table 3 shows the cross-sectional regression results for individual cantons from 2008 to 2020.

Table 3: Cross-sectional cantonal-level results, 2008 to 2020

Canton	Primary surplus-to-GDP incl. all transfers	Primary surplus-to-GDP excl. resource equalization transfers	Average resource index	Average marginal absorption rate
AG	-0.3977**	-0.1864*	86.83	14.05%
AI	-0.0303	0.0505	83.83	16.79%
AR	0.2339	0.3992**	81.34	18.00%
BE	0.2365**	0.1532	75.51	15.71%
BL	0.0763**	0.0679*	99.44	5.70%
BS	-0.3110*	-0.3081	145.19	5.01%
FR	0.1438	0.0884	75.32	19.78%
GE	0.4449	0.4449	146.72	4.42%
GL	0.8815**	0.9079**	68.81	23.90%
GR	0.0162	0.0082	81.62	17.51%
JU	-0.0919	-0.2933***	64.75	25.21%
LU	0.3560***	0.3930	80.93	16.87%
NE	0.0133	-0.0348	92.79	10.32%
NW	-0.1034	0.3065**	137.13	5.34%
OW	0.3308***	-0.1102	87.77	14.71%
SG	0.4410**	0.4856**	78.09	17.94%
SH	0.2343	0.2802	97.00	7.50%
SO	0.0631	-0.0186	76.47	19.58%
SZ	1.1350***	1.9745***	155.17	5.09%
TG	0.2238	0.20993	76.63	19.49%
TI	-0.0200	-0.0219	97.48	6.34%
UR	0.3796**	0.3367**	63.03	26.14%
VD	0.1391***	0.1501***	105.39	4.30%
VS	0.0034	-0.1572**	67.36	22.19%
ZG	0.3941***	0.5010***	245.68	4.76%
ZH	0.0626	0.0539	123.09	3.69%

The reported coefficients show the fiscal reaction according to equation 2. *$p<0.1$; **$p<0.05$; ***$p<0.01$

The results reveal substantial heterogeneity across cantons between the fiscal reactions for both measures of the primary surplus. For the cantons of Bern, Jura and Lucerne which have constantly received resource equalization transfers and the canton of Obwalden, which has predominantly received transfers, fiscal sustainability depends largely on transfer payments from the resource equalization system. For the constantly contributing cantons of Zug and Schwyz, however, the resource equalization system appears to decrease the sustainability of their public budgets. For other cantons, such as Basel-Landschaft, Geneva, Glarus and Solothurn, the fiscal reaction does not seem to depend on the resource equalization system.

The rather high point estimate for the canton of Schwyz may be explained by a period of fiscal consolidation which commenced in 2015 (Federal Finance Administration, 2023b). The

statistically significant coefficient for the canton of St. Gallen may be a result of the cantonal fiscal rule which is found to be the most stringent across all cantons (Burret and Feld, 2018b).

While our results suggest that, on average, the cantons follow sustainable fiscal policies, the impact of resource equalization payments is not uniform across cantons.[3]

5.2   The Role of the Fiscal Equalization System

Building on the heterogeneity observed at the cross-sectional cantonal level, we amend our model with an interaction term between the lagged debt-to-GDP ratio and the resource index. In table 4 we report the results using the standard measure of the primary surplus-to-GDP including resource equalization transfers.

Table 4: Results including all fiscal transfers, 2008 to 2020

	Dependent variable:					
	Primary surplus-to-GDP incl. all transfers					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	0.0335	0.0112	0.0126	0.0254	0.0011	0.0024
	(0.1314)	(0.0743)	(0.0748)	(0.1338)	(0.0772)	(0.0778)
RI	-0.0017	0.0020	0.0022	-0.0024	0.0012	0.0014
	(0.0044)	(0.0028)	(0.0028)	(0.0044)	(0.0023)	(0.0023)
Lagged debt-to-GDP ratio*RI	0.1512	0.1257	0.1235	0.1544	0.1291	0.1272
	(0.1662)	(0.0810)	(0.0811)	(0.1663)	(0.0810)	(0.0812)
YVAR		-0.1133			-0.1076	
		(0.1857)			(0.1617)	
GVAR		-0.8582***			-0.8668***	
		(0.1589)			(0.1530)	
Output gap			0.0064			0.0065
			(0.0217)			(0.0189)
Expenditure gap			-0.8597***			-0.8682***
			(0.1621)			(0.1557)
Lagged dependent variable				0.1673*	0.2043***	0.2045***
				(0.0856)	(0.0593)	(0.0599)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Conditional marginal effect of lagged debt-to-GDP ratio	0.1844***	0.1370***	0.1358***	0.1794***	0.1299***	0.1292***
	(0.0523)	(0.0227)	(0.0226)	(0.0526)	(0.0208)	(0.0207)
Conditional marginal effect of RI	0.0103	0.0120	0.0120	0.0099	0.0114	0.0115
	(0.0124)	(0.0077)	(0.0079)	(0.0122)	(0.0077)	(0.0078)
Observations	338	338	338	338	338	338
Within R^2	0.3264	0.6928	0.6924	0.3399	0.7129	0.7126

Driscoll–Kraay standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01.
Conditional marginal effects evaluated for all variables at means.

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[3]   The individual results for the period 1991 to 2020 imply that the heterogeneity between the cantons was less pronounced when observing the whole time period, as seen in tables A.7 and A.8 in the appendix.

The interaction does not turn out to be statistically significant in any specification, suggesting that there is no relationship between the fiscal reaction of a canton and its resource index. The resource index itself also does not turn out to be statistically significant in any specification.

The conditional marginal effects of the lagged debt-to-GDP ratio shows that the fiscal reaction is statistically significant at the 1 percent level and positive with a point estimate of around 0.13. The coefficient of the resource index does not turn out to be statistically significant. Overall, our results suggest that there is no systematic relationship between the resource index and the fiscal reaction measured by the standard primary surplus-to-GDP ratio, but the cantons are still fiscally sustainable on average.

Table 5 shows the empirical results of the estimations using the primary surplus-to-GDP ratio excluding resource equalization transfers as the dependent variable.

Table 5: Results excluding resource equalization transfers, 2008 to 2020

	Dependent variable:					
	Primary surplus-to-GDP excl. resource equalization transfers					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	-0.2534*	-0.2745***	-0.2726***	-0.2373*	-0.2570***	-0.2556***
	(0.1360)	(0.0802)	(0.0806)	(0.1292)	(0.0709)	(0.0713)
RI	-0.0004	0.0034	0.0036	-0.0033	0.0003	0.0004
	(0.0049)	(0.0027)	(0.0027)	(0.0047)	(0.0023)	(0.0022)
Lagged debt-to-GDP ratio*RI	0.4097**	0.3827***	0.3801***	0.3918**	0.3630***	0.3609***
	(0.1639)	(0.0834)	(0.0835)	(0.1559)	(0.0725)	(0.0726)
YVAR		-0.0659			-0.0735	
		(0.2094)			(0.1804)	
GVAR		-0.8536***			-0.8602***	
		(0.1478)			(0.1456)	
Output gap			-0.0016			0.0014
			(0.0249)			(0.0212)
Expenditure gap			-0.8542***			-0.8610***
			(0.1506)			(0.1481)
Lagged dependent variable				0.2100**	0.2319***	0.2318***
				(0.0843)	(0.0598)	(0.0598)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Conditional marginal effect of lagged debt-to-GDP ratio	0.1553***	0.1072***	0.1065***	0.1535***	0.1050***	0.1044***
	(0.0516)	(0.0204)	(0.0203)	(0.0531)	(0.0203)	(0.0202)
Conditional marginal effect of RI	0.0321**	0.0338***	0.0338***	0.0279**	0.0291***	0.0291***
	(0.0130)	(0.0082)	(0.0084)	(0.0115)	(0.0068)	(0.0069)
Observations	338	338	338	338	338	338
Within R^2	0.7266	0.8705	0.8705	0.7364	0.8825	0.8824

Driscoll–Kraay standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01
Conditional marginal effects evaluated for all variables at means.

The interaction term is statistically significant at the 1 percent level in columns (2) and (3) as well as (5) and (6) and statistically significant at the 5 percent level in columns (1) and (4). The

coefficient is positive in all specifications which suggests that the fiscal reaction increases with higher values of the resource index.

The conditional marginal effect of the lagged debt-to-GDP ratio is statistically significant at the 1 percent level with a coefficient of around 0.10. The conditional marginal effect of the resource index is also positive and statistically significant at the 1 percent level in columns (2), (3), (5) and (6) while it is statistically significant at the 5 percent level in columns (1) and (4). Its coefficient is around 0.03. Our results suggest that, on average, the cantons have followed sustainable fiscal policies when accounting for payments from and into the resource equalization system.

However, the magnitude of the fiscal reaction depends on the resource index of the respective canton as seen in figure 6.

Figure 6: Conditional marginal effects of the lagged debt-to-GDP ratio
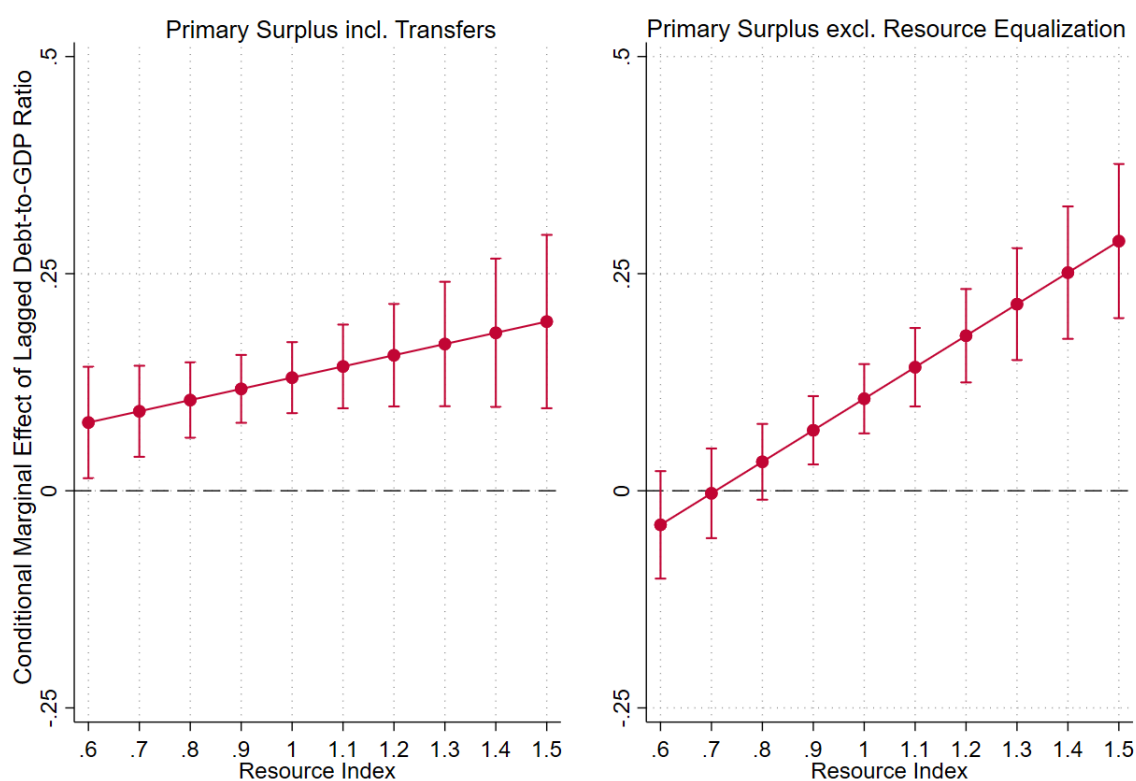
Note: Conditional marginal effects evaluated at different levels of the resource index and at all other variables at means. They are calculated following Brambor et al. (2006). The bars represent the 95 percent confidence intervals. The values are based on column (5) of tables 4 and 5.

The heterogeneity of the fiscal reactions is subtle for the standard measure of the primary surplus. A 1 percentage point increase in the lagged debt-to-GDP ratio prompts a statistically

significant increase in the primary surplus-to-GDP ratio of 0.08 to 0.19 percentage points. The fiscal reaction is statistically significant at the 5 percent level for cantons with a resource index of 60. Across all other specifications, it is statistically significant at the 1 percent level.

When we exclude payments originating from the resource equalization system, the heterogeneity of fiscal reactions becomes more evident. For cantons with a resource index between 60 and 80, a 1 percentage point increase in the lagged debt-to-GDP ratio does not lead to a statistically significant statistically significant increase in the primary surplus-to-GDP ratio. This means that from 2008 to 2020, without payments from resource equalization, 9 of the 26 cantons did not follow sustainable fiscal policies according to our model, on average. For cantons with a resource index between 90 and 150, a 1 percentage point increase in the debt-to-GDP ratio in the preceding year led to an increase in the primary surplus-to-GDP ratio in the current year of 0.07 to 0.29 percentage points.

Overall, the empirical results imply that receiving cantons are less fiscally sustainable on average than cantons paying into the system. Moreover, the coefficient of the conditional marginal effect of the lagged debt-to-GDP ratio is lower than in the specification in which we use the primary surplus-to-GDP ratio including transfers as the dependent variable, which is in line with the results of our baseline estimations.

5.3 Transfers, Taxes and Debt

The stated aim of the resource equalization system is to enable receiving cantons to increase their locational attractiveness. We examine whether the resource equalization funds are used to lower the tax burden. Figures 7 to 9 illustrate the results for income taxation.

Figure 7: Income taxation and resource equalization, single
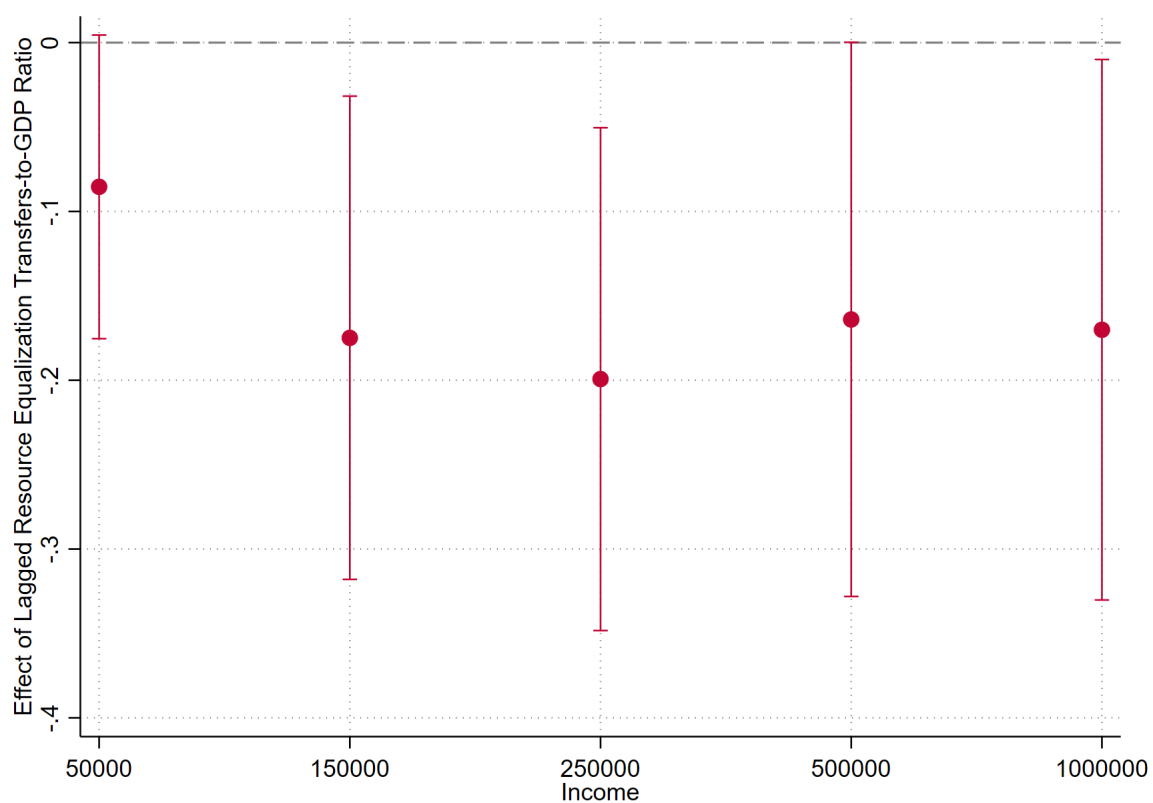
Note: Single persons without children are assumed. The bars represent 90% confidence intervals. Results stem from column 5 of tables A.10 to A.14.

Figure 8: Income taxation and resource equalization - married
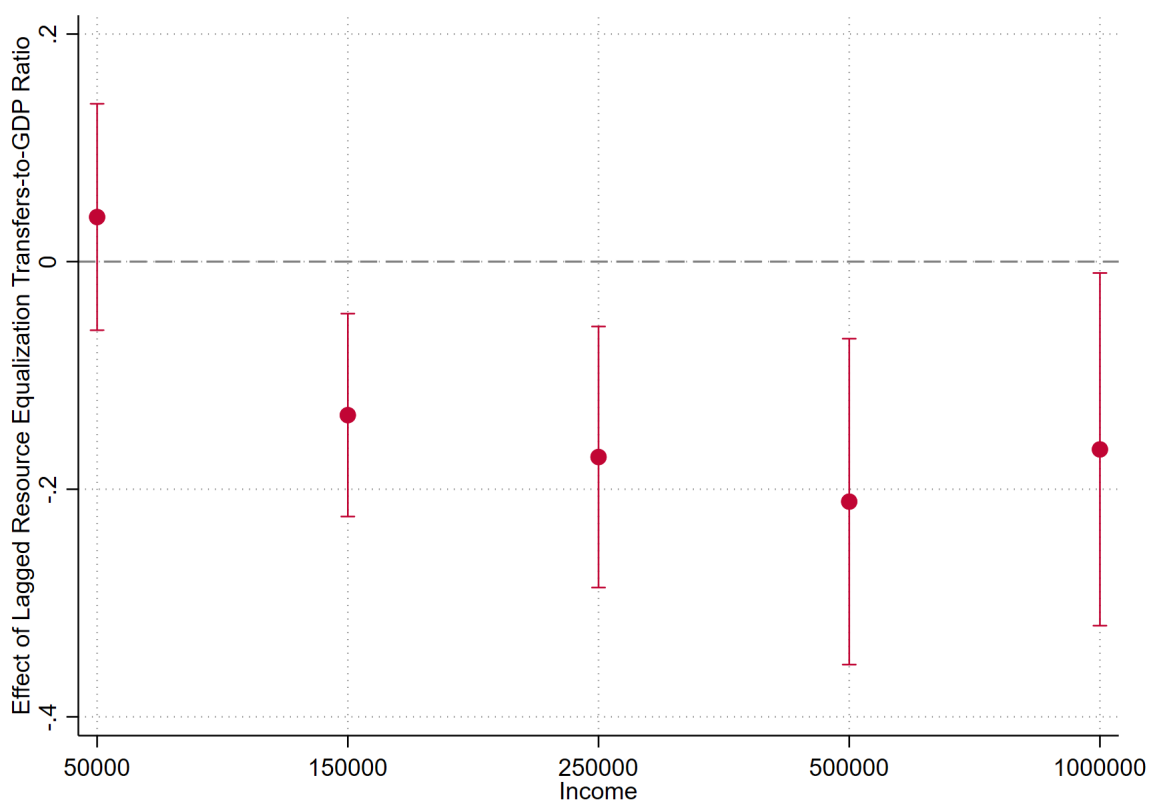
Note: Married couples with two children who both earn half of the reported income individually are assumed. The bars represent 90% confidence intervals. Results stem from column 5 of tables A.15 to A.19.

Figure 9: Income taxation and resource equalization - top incomes
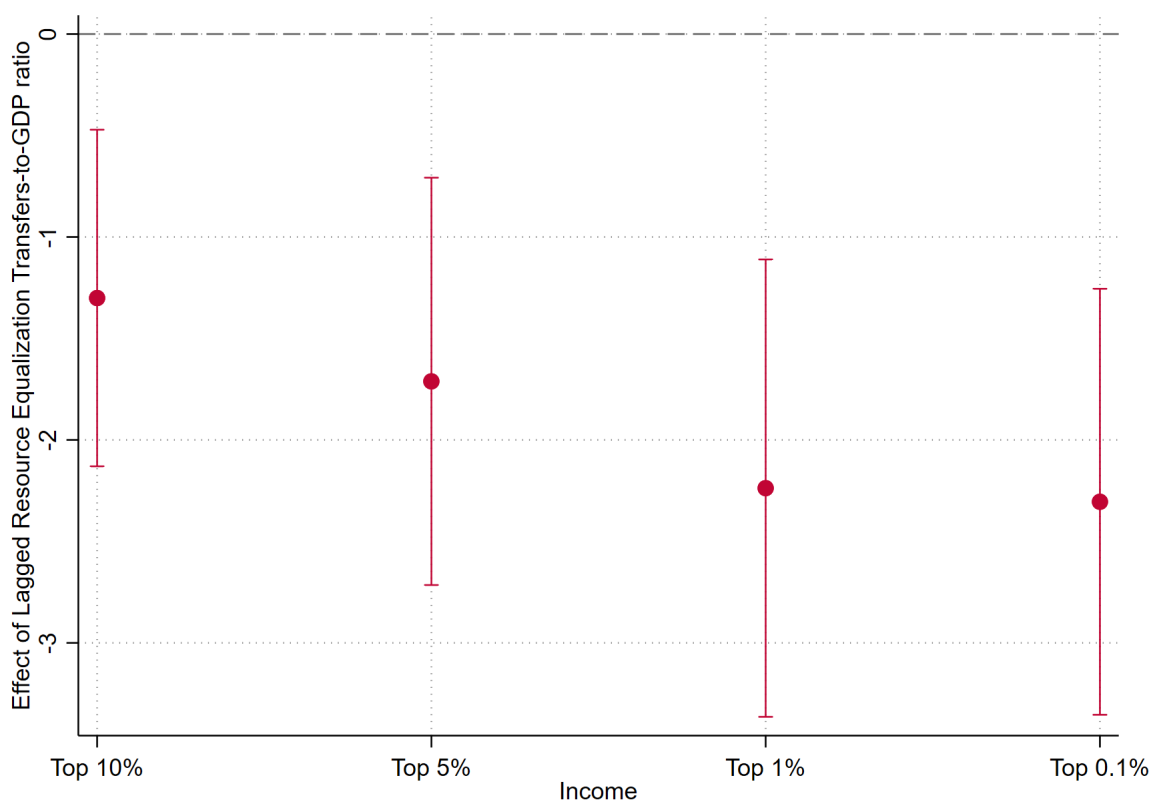
Note: The dependent variable is the percentage of income taxation revenues that the respective top incomes account for. The bars represent 90% confidence intervals. Results stem from column 5 of tables A.20 to A.23.

For income taxation, we find that an increase of revenues from resource equalization as a share of GDP is followed by a subsequent decrease of the cantonal tax burden on incomes by the cantonal governments across nearly all income steps we examine for single and married households. For example, our results suggest that after a 1 percentage point increase in the lagged resource equalization transfers-to-GDP ratio, the tax burden for single persons with a gross income of 150'000 Swiss francs decreases by 0.18 percentage points.

For both household types, however, we find that the tax burden is not decreased for low incomes, i.e. 50'000 Swiss Francs, after an increase in revenues from resource equalization. For the share of income tax revenues accounted for by the top incomes, we observe that the burden is lowered across the distribution. The magnitude is higher the more a household moves up the income distribution. The detailed estimations for different households and incomes are reported in tables A.10 to A.23.

This conditional correlation suggests that a portion of the financial resources allocated to cantonal governments via the resource equalization system is indeed utilized to lower the tax burden on incomes. Especially, the progressivity of the income tax schedule is lowered. However, we note that Brülhart and Schmidheiny (2013) argue for the period after the reform of the fiscal equalization system that income tax decreases in the receiving cantons might be a result of tax policy strategies that already started before 2008.

Figure 10 illustrates the empirical results regarding corporate taxation.

Figure 10: Corporate taxation and resource equalization
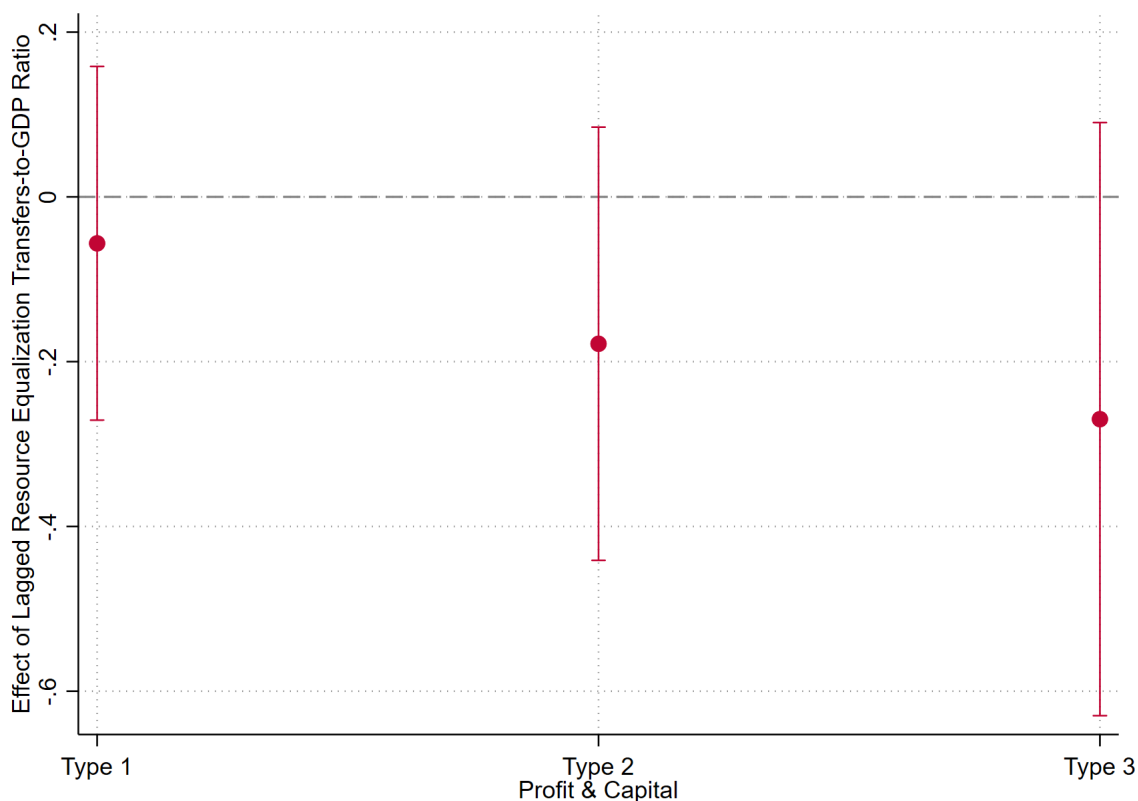
Note: Different capital and profit structures are assumed. Type 1: capital of 600'000 Swiss francs, profit of 120'000 Swiss francs. Type 2: capital of 2'000'000 Swiss francs, profit of 260'000 Swiss francs. Type 3: capital of 5'000'000 Swiss francs, profit of 1'000'000 Swiss francs. The bars represent 90% confidence intervals. Results stem from column 5 of tables A.24 to A.26.

For corporate taxation, we do not find a statistically significant reaction of the cantonal governments to an increase in the lagged resource equalization transfers-to-GDP ratio as shown in figure 10. Our findings imply that the transfers from the resource equalization system are not used to lower the corporate tax burden.[4]

Our findings are in line with Leisibach and Schaltegger (2019). The authors find negative margins on new corporate profits for almost all recipient cantons. Margins on new profits and incomes are derived by factoring in both the marginal absorption rates and the tax burden. The same results hold for new top incomes, but the negative margins are less pronounced. If the cantonal governments are unable to sustain their existing and planned spending without transfers from resource equalization, they might need to allocate the funds they receive from the system to meet their spending obligations. In such a scenario, cantonal governments might be disincentivized to reduce the tax burden. Rather than reducing taxes, they may opt to use the

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[4]   The detailed empirical results for corporate taxation are reported in tables A.24 to A.26.

transfers to maintain or increase their level of spending. This might create a fiscal dependency on transfers and give rise to concerns about the long-term sustainability of cantonal finances.

As cantonal taxes do not seem to broadly react to the equalization system incentives, one might worry that transfers might inadvertently reward less fiscally responsible behavior, thereby exacerbating fiscal disparities. Table 6 shows the empirical results of whether transfers from resource equalization subsidize cantonal debt.

Table 6: Relation between debt and resource equalization transfers, 2009 to 2020

	Dependent variable:					
	resource equalization transfers-to-GDP ratio					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	0.0319***	0.0328***	0.0326***	0.0102**	0.0089*	0.0095*
	(0.0060)	(0.0063)	(0.0062)	(0.0042)	(0.0045)	(0.0045)
YVAR		-0.0323			0.0841**	
		(0.0871)			(0.0319)	
GVAR		0.0075			-0.0016	
		(0.0150)			(0.0070)	
Output gap			0.0042			-0.0091**
			(0.0111)			(0.0038)
Expenditure gap			0.0070			-0.0002
			(0.0147)			(0.0064)
Lagged dependent variable				0.9313***	0.9399***	0.9362***
				(0.0459)	(0.0421)	(0.0428)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	312	312	312	312	312	312
Within R^2	0.9773	0.9774	0.9774	0.9954	0.9955	0.9954

Driscoll–Kraay standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01

The coefficient of the lagged debt-to-GDP ratio is statistically significant at the 1 percent level in columns (1) to (3), at the 5 percent level in column (4) and at the 10 percent level in columns (5) and (6), however. Focusing on our preferred specifications in columns (5) and (6), we find that a 1 percentage point increase in the debt-to-GDP ratio leads to a subsequent increase in the resource equalization transfers-to-GDP ratio of 0.009 to 0.01 percentage points. This effect is around one standard deviation of the resource equalization transfers-to-GDP ratio.

While debt is not an institutional determinant of transfers in the resource equalization system, our results imply that increases in the debt-to-GDP ratio coincide with increases in the transfers from resource equalization. The system is designed to redistribute resources to cantons with greater fiscal needs. This raises concerns about the effectiveness and efficiency of the equalization mechanism in achieving its objectives.

6 Robustness Checks

As a robustness check, we split our sample into two groups: Those cantons which consistently receive payments from the resource equalization system and those cantons that consistently pay into the system over the observation period between 2008 to 2020.[5] Hence, we separately compare the fiscal sustainability of cantons with a resource index that was consistently over 100 and cantons with a resource index consistently under 100. Results for constant recipients are shown in tables A.27 and A.28. Tables A.29 and A.30 present the results for constant contributors.

For constant recipients, the coefficient of the lagged debt-to-GDP ratio remains statistically significant at the 1 percent level across all specifications when we use the standard primary surplus-to-GDP ratio including transfers as the dependent variable. The fiscal reaction coefficient suggests a 0.14 percentage point increase in primary surplus-to-GDP including transfers in period t following a 1 percentage point increase in the debt-to-GDP ratio in period $t - 1$. When we estimate the model with the alternative primary surplus-to-GDP ratio excluding resource equalization as the dependent variable, the reaction remains statistically significant at the 1 percent level in columns (1) to (3) and at the 10 percent level in columns (4) to (6), though the coefficients are lower compared to those obtained by employing the standard primary surplus measure. These findings are in line with our baseline results.

For constant contributors, the results are statistically significant at the 1 percent level in columns (1) to (6) when including transfers in the primary surplus-to-GDP ratio. The point estimate of the lagged debt-to-GDP ratio is 0.12 which implies a weaker fiscal response compared to the recipient cantons when using the standard primary surplus-to-GDP measure. When we exclude payments into the resource equalization system from the primary surplus measure, the coefficient of the lagged debt-to-GDP ratio remains statistically significant at the 1 percent level across all specifications. The estimated coefficient is 0.13, which is slightly higher than the fiscal reaction observed when employing the primary surplus-to-GDP ratio including transfers. Overall, inferences of our results do not change.

We re-calculate the YVAR, GVAR and expenditure gap variables by subtracting the expenditures originating from the resource equalization system. These variables are employed to estimate the empirical models using the primary surplus-to-GDP ratio excluding resource equalization as the dependent variable (see tables A.31 and A.32). Inferences do not change.

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[5] Basel-Landschaft, Obwalden, Schaffhausen, Ticino, and Vaud, which have alternated between receiving payments and paying into the system in different years, were thus excluded from the estimations.

We use standard errors clustered at the cantonal level as a robustness check. Given our low number of 26 cantons as clusters, we use a wild bootstrap approach according to Cameron et al. (2008) with 1'000 repetitions to calculate the clustered standard errors. The lagged debt-to-GDP ratio remains statistically significant at the 1 percent level across all specifications using the primary surplus-to-GDP ratio including transfers as the dependent variable (see table A.33). When we use the primary surplus-to-GDP ratio excluding resource equalization as the dependent variable, the fiscal reaction is statistically significant at the 5 percent level in columns (1), (2) and (4) while it is statistically significant at the 10 percent level in columns (3), (5) and (6) (see table A.34). Using our amended model, inferences do not change, too (see tables A.35 and A.36).

We check whether our results change when we exclude individual cantons. Regardless of the exclusion of any canton, the coefficient of the lagged debt-to-GDP ratio using the primary surplus-to-GDP ratio including transfers as the dependent variable is statistically significant at the 1 percent level with a coefficient of 0.08 to 0.12. For the empirical model with the primary surplus-to-GDP ratio excluding resource equalization as the dependent variable, the lagged debt-to-GDP ratio is consistently statistically significant at least at the 5 percent level. The coefficients range from around 0.05 to 0.08, which is lower compared to the results using the standard measure of the primary surplus. Once we exclude either the canton of Aargau or Schwyz and use the amended empirical model, the interaction term does not turn out to be statistically significant when we use the primary surplus-to-GDP ratio including transfers. The conditional marginal effect of the resource index is statistically significant at the 10 percent level once we exclude the cantons of Aargau, Basel-Stadt, Glarus, Jura, Obwalden, Schaffhausen, Uri, Vaud and Zug. The results when we use the primary surplus-to-GDP ratio excluding resource equalization as the dependent variable remain robust.

To address potential endogeneity, we estimate our baseline model in levels. We use log real GDP to account for output fluctuations (see tables A.37 and A.38). When we do not control for log real GDP, the difference in the fiscal reaction is comparable in size to the estimate in our baseline estimations. Once we control for log real GDP, the difference is smaller. This indicates that the size of the economy matters for the fiscal reactions of cantonal governments. Once we include an interaction term of real debt with the resource index before equalization, we find that once we exclude payments from resource equalization the fiscal reaction partly depends on the resource index of the cantons (see tables A.39 and A.40). Overall, our inferences do not change.

Further, we follow Feld et al. (2020) and Bury et al. (2023a,b) and use the Common Correlated Effects Mean Group (CCEMG) estimator developed by Pesaran (2006). This method provides individual estimates for each of the 26 cantons, thereby controlling for time-invariant cantonal characteristics, and accounts for time-variant unobserved factors by incorporating the averages

of all variables of the other cantons. Further, the method accounts for differing long- and short-term cantonal fiscal reactions and reduces the problem arising from non-stationary time series by controlling for canton-specific deviations from the cross-cantonal mean of each variable (Bury et al., 2023b). Including fiscal transfers in our primary surplus measure, we find a fiscal reaction of the cantons of 0.16 to 0.17 percentage points which is statistically significant at the 5 percent level, while the reaction is statistically significant at the 10 percent level with a value of 0.09 percentage points excluding resource equalization in column (6). We conclude that our inferences remain robust (see tables A.41 and A.42). Once we amend our model with the interaction term, we no longer find a statistically significant fiscal reaction (see tables A.43 and A.44).

We further address potential Nickell bias in a robustness check as Nickell (1981) showed that dynamic panel estimations are not consistent for finite time horizons using the least-squares dummy variable estimator. We employ the bias-corrected least-squares dummy variable estimator according to Bruno (2005) using the Arellano and Bond (1991) estimator. The variance-covariance matrix is estimated using a bootstrap with 1,000 repetitions. While the differences between the magnitudes of the fiscal reaction depending on the definition of the primary surplus-to-GDP ratio are slightly different to our main results, overall inferences do not change (see tables A.45 and A.46).

Bury et al. (2023b) present evidence for the period of 1946 to 2017 that heterogeneity of the cantonal fiscal reactions partly stem from differences in the cantonal fiscal rules. We conclude that fiscal rules of the cantons do not drive our results, however. Our observation period is between 2008 to 2020 during which cantonal fiscal rules remained virtually unchanged, and most cantons had already established a fiscal rule. Consequently, the cantonal-fixed effects in our model should mostly capture the variations in the design of these rules.

Other factors such as electoral cycles and government ideology might also impact the fiscal reactions of the cantons. To account for this, we re-estimate our model and control for parliamentary elections and government ideologies. We included a dummy variable for election years which is 1 if a cantonal election happended in the respective year, and is 0 otherwise. Further, we follow Potrafke (2020) and measure government ideology by using dummy variables for center and leftwing governments based on Potrafke (2009). Data on the distribution of seats in the cantonal parliaments and executive governments stem from Vatter et al. (2020) and cantonal records. The categorization of Swiss parties on a left-right spectrum follows Vatter et al. (2020). With the control variables, the coefficient of the lagged debt-to-GDP ratio is statistically significant at the 1 percent level including as well as excluding payments from resource equalization. The magnitude of the fiscal reaction is 0.12 including transfers and 0.06 excluding transfers from resource equalization. The center government dummy turns out to be statistically significant in columns (1) and (4) on the 10

percent level using the primary surplus-to-GDP ratio including transfers as the dependent variable. Once we exclude payments from resource equalization, the center government dummy is statistically significant in columns (1) and (4) to (6) on the five and ten percent level. Overall, the coefficients suggest that center governments follow less fiscally prudent policies compared to right-wing governments (see tables A.47 and A.48). When we use our amended model, the results are consistent with our main estimation. Once we exclude payments stemming from resource equalization, we find a positive and statistically significant relationship between the lagged debt-to-GDP ratio and the resource index. We find evidence that center governments achieve lower primary surplus-to-GDP ratios than rightwing governments. The election variable does not turn out to be statistically significant in any specification (see tables A.49 and A.50). Overall, inferences of our results remain robust.

7   Concluding Remarks

We examine the effect of equalization transfers on the fiscal sustainability of Swiss cantonal governments from 2008 to 2020. We find that while cantons have pursued sustainable fiscal policies on average, their finances depend on the resource equalization system. Cantons with lower fiscal power, in particular, demonstrate less sustainable policies in the absence of these transfers. Notably, we find that transfers are not used to lower the corporate tax burden in recipient cantons. Hence, the current system disincentivizes cantons from expanding their tax bases, as it would affect their eligibility for equalization transfers. Additionally, we find a positive relationship between the debt-to-GDP ratio and the resource equalization transfers-to-GDP ratio, indicating further moral hazard.

Further analysis reveals a trend from 2008 to 2020 where cantons receiving consistent transfers have 15 percent higher government expenditures relative to GDP than contributing cantons. This disparity combined with an observed slower growth of Swiss GDP compared to the growth in resource equalization payments could potentially strain overall sustainability of the system. To address these challenges, we recommend revising the fiscal equalization mechanism to encourage cantons to broaden their tax bases without jeopardizing their financial support. Additionally, it is crucial to implement institutional safeguards to prevent the system from disproportionately favoring indebted cantons.

Our study underscores the crucial role of fiscal transfer systems in shaping sub-national fiscal sustainability. Our institutional setup, characterized by high transparency, fiscal autonomy, and the significant role of equalization transfers in cantonal budgets, is particularly well suited to identify the effects of fiscal equalization transfers. While set in Switzerland, the implications of our study are thus relevant for designing sustainable fiscal policies worldwide. Overall, the findings contribute to a broader understanding of how fiscal equalization systems

can be structured to balance equitable empowerment of less fiscally endowed regions with accountability and fiscal prudence.

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A Appendix

Table A.1: Test for cross-sectional dependence

Revenue to GDP	Expenditure to GDP	Debt to GDP	Primary Surplus incl. Transfers	Primary Surplus excl. Resource Equalization
16.37***	10.86***	9.09***	13.82***	13.91***
(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Cross-sectional dependence is tested using the Pesaran (2004) CD-test.
*p<0.1; **p<0.05; ***p<0.01. H0: Cross-sectional independence.

Table A.2: Results including fiscal transfers, 1991 to 2020

	Dependent variable:					
	Primary Surplus incl. Transfers					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	0.0587***	0.0524***	0.0518***	0.0565***	0.0509***	0.0503***
	(0.0132)	(0.0170)	(0.0171)	(0.0085)	(0.0120)	(0.0122)
YVAR		0.0249			-0.0130	
		(0.1464)			(0.1195)	
GVAR		-0.6072***			-0.5882***	
		(0.1632)			(0.1658)	
Output gap			-0.0130			-0.0070
			(0.0175)			(0.0133)
Expenditure gap			-0.6073***			-0.5888***
			(0.1636)			(0.1659)
Lagged dependent variable				0.3758***	0.3487***	0.3481***
				(0.0558)	(0.0492)	(0.0490)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	780	780	780	780	780	780
Within R^2	0.2781	0.4753	0.4756	0.3632	0.5483	0.5484

Driscoll–Kraay standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01

Table A.3: Results including fiscal transfers, 1991 to 2007

			Dependent variable:			
			Primary Surplus incl. Transfers			
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	0.1091***	0.1053***	0.1054***	0.0894***	0.0888***	0.0892***
	(0.0178)	(0.0160)	(0.0164)	(0.0185)	(0.0176)	(0.0180)
YVAR		-0.1757			-0.2074	
		(0.2026)			(0.1495)	
GVAR		-0.3844***			-0.3134***	
		(0.0466)			(0.0421)	
Output gap			0.0230			0.0318*
			(0.0267)			(0.0180)
Expenditure gap			-0.3857***			-0.3138***
			(0.0457)			(0.0425)
Lagged dependent variable				0.4124***	0.3739***	0.3746***
				(0.0818)	(0.0776)	(0.0778)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	442	442	442	442	442	442
Within R^2	0.4566	0.5182	0.5172	0.5542	0.5964	0.5956

Driscoll–Kraay standard errors are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A.4: Results excluding fiscal transfers, 1991 to 2020

			Dependent variable:			
			Primary Surplus excl. Transfers			
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	0.0656***	0.0572***	0.0573***	0.0563***	0.0490***	0.0490***
	(0.0168)	(0.0203)	(0.0206)	(0.0097)	(0.0126)	(0.0130)
YVAR		0.2497**			0.1674*	
		(0.1046)			(0.0949)	
GVAR		-0.5487***			-0.5414***	
		(0.1539)			(0.1549)	
Output gap			-0.0394**			-0.0278**
			(0.0157)			(0.0108)
Expenditure gap			-0.5449***			-0.5389***
			(0.1540)			(0.1548)
Lagged dependent variable				0.5403***	0.5353***	0.5355***
				(0.0537)	(0.0455)	(0.0453)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	780	780	780	780	780	780
Within R^2	0.8443	0.8705	0.8705	0.8854	0.9108	0.9108

Driscoll–Kraay standard errors are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A.5: Results excluding fiscal transfers, 1991 to 2007

	Dependent variable:					
	Primary Surplus excl. Transfers					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	0.1338***	0.1296***	0.1301***	0.0972***	0.0960***	0.0967***
	(0.0207)	(0.0185)	(0.0187)	(0.0209)	(0.0196)	(0.0197)
YVAR		-0.0074			0.0008	
		(0.1655)			(0.1562)	
GVAR		-0.2928***			-0.2114***	
		(0.0673)			(0.0575)	
Output gap			0.0064			0.0087
			(0.0248)			(0.0218)
Expenditure gap			-0.2916***			-0.2093***
			(0.0663)			(0.0570)
Lagged dependent variable				0.4819***	0.4570***	0.4572***
				(0.0983)	(0.0940)	(0.0940)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	442	442	442	442	442	442
Within R^2	0.8956	0.9015	0.9015	0.9198	0.9228	0.9229

Driscoll–Kraay standard errors are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A.6: Results excluding fiscal transfers, 2008 to 2020

	Dependent variable:					
	Primary Surplus excl. Transfers					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	0.1933***	0.1639***	0.1643***	0.1677***	0.1326***	0.1329***
	(0.0286)	(0.0185)	(0.0187)	(0.0380)	(0.0233)	(0.0232)
YVAR		-0.1318			-0.0633	
		(0.1845)			(0.1422)	
GVAR		-0.7778***			-0.8161***	
		(0.1557)			(0.1446)	
Output gap			0.0019			-0.0025
			(0.0228)			(0.0169)
Expenditure gap			-0.7788***			-0.8163***
			(0.1573)			(0.1457)
Lagged dependent variable				0.3265**	0.3848***	0.3854***
				(0.1186)	(0.1020)	(0.1024)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	338	338	338	338	338	338
Within R^2	0.8741	0.9201	0.9200	0.8851	0.9353	0.9353

Driscoll–Kraay standard errors are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A.7: Individual results, 1991 to 2020

	Coefficient of lagged debt-to-GDP ratio:			
Canton	Primary Surplus incl. Transfers	Primary Surplus excl. Transfers	Average Resource Index	Average Marginal Absorption Rate
AG	-0.0470	0.0609	86.83	14.05%
AI	0.1056***	-0.0009	83.83	16.79%
AR	0.3843**	0.2369	81.34	18.00%
BE	0.0825***	0.0439	75.51	15.71%
BL	0.0370	0.1655***	99.44	5.70%
BS	0.0416	0.0179	145.19	5.01%
FR	0.0177	-0.2085***	75.32	19.78%
GE	0.1180***	0.1594***	146.72	4.42%
GL	0.0439	0.4409***	68.81	23.90%
GR	0.2252**	0.2533***	81.62	17.51%
JU	0.1291**	0.0537	64.75	25.21%
LU	0.0499*	-0.0181	80.93	16.87%
NE	0.0737**	-0.0323	92.79	10.32%

Cross-sectional regressions: $pb = \alpha + \beta * d(t-1) + \gamma * GVAR + \delta * YVAR + \varepsilon$
$^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A.8: Individual results, 1991 to 2020

	Coefficient of lagged debt-to-GDP ratio:			
Canton	Primary Surplus incl. Transfers	Primary Surplus excl. Transfers	Average Resource Index	Average Marginal Absorption Rate
NW	0.0875	0.5231***	137.13	5.34%
OW	0.1006***	-0.1393***	87.77	14.71%
SG	0.2871***	0.1396	78.09	17.94%
SH	0.0387	-0.2953***	97.00	7.50%
SO	0.1039**	0.0730**	76.47	19.58%
SZ	0.5186***	-0.5671**	155.17	5.09%
TG	0.0614**	0.0148	76.63	19.49%
TI	-0.0269	0.1038***	97.48	6.34%
UR	0.0755*	0.2099***	63.03	26.14%
VD	0.0356	-0.0904*	105.39	4.30%
VS	0.0919***	0.0473	67.36	22.19%
ZG	0.1778	0.3064*	245.68	4.76%
ZH	0.0891***	0.0513	123.09	3.69%

Cross-sectional regressions: $pb = \alpha + \beta * d(t-1) + \gamma * GVAR + \delta * YVAR + \varepsilon$
$^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A.9: Results excluding fiscal transfers, 2008 to 2020

	Dependent variable:					
	Primary Surplus excl. Transfers					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	-0.0401	-0.0571	-0.0543	-0.0420	-0.0601	-0.0580
	(0.1041)	(0.0486)	(0.0488)	(0.1034)	(0.0469)	(0.0471)
RI	0.0172***	0.0211***	0.0214***	0.0119**	0.0149***	0.0151***
	(0.0044)	(0.0038)	(0.0036)	(0.0047)	(0.0042)	(0.0041)
Lagged debt-to-GDP ratio*RI	0.1907	0.1613***	0.1576***	0.1903	0.1603***	0.1577***
	(0.1290)	(0.0512)	(0.0514)	(0.1278)	(0.0487)	(0.0488)
YVAR		0.0583			0.0516	
		(0.1279)			(0.1039)	
GVAR		-0.8031***			-0.8271***	
		(0.1627)			(0.1483)	
Output gap			-0.0218			-0.0170
			(0.0157)			(0.0118)
Expenditure gap			-0.8013***			-0.8256***
			(0.1636)			(0.1491)
Lagged dependent variable				0.2693**	0.3185**	0.3180**
				(0.1186)	(0.1092)	(0.1091)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Conditional marginal effect of lagged debt-to-GDP ratio	0.1501***	0.1037***	0.1030***	0.1478***	0.0998***	0.0992***
	(0.0469)	(0.0166)	(0.0165)	(0.0496)	(0.0189)	(0.0187)
Conditional marginal effect of RI	0.0323***	0.0339***	0.0339***	0.0270***	0.0277***	0.0276***
	(0.0100)	(0.0063)	(0.0064)	(0.0090)	(0.0059)	(0.0059)
Observations	338	338	338	338	338	338
Within R^2	0.8838	0.9323	0.9324	0.8907	0.9419	0.9420

Driscoll–Kraay standard errors are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$
Conditional marginal effects evaluated for all variables at means.

Table A.10: Relation between income taxation and resource equalization transfers, 2009 to 2020

	Dependent variable:					
	income tax burden					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged revenues from equalization	-0.3385***	-0.3417***	-0.3390***	-0.0842*	-0.0854	-0.0839
	(0.0882)	(0.0954)	(0.0937)	(0.0459)	(0.0501)	(0.0500)
YVAR		-0.0312			-0.0077	
		(0.0803)			(0.0659)	
GVAR		0.0210			0.0066	
		(0.0205)			(0.0062)	
Output gap			-0.0002			-0.0019
			(0.0114)			(0.0102)
Expenditure gap			0.0208			0.0066
			(0.0208)			(0.0060)
Lagged dependent variable				0.5961***	0.5952***	0.5954***
				(0.0916)	(0.0924)	(0.0926)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	312	312	312	312	312	312
Within R^2	0.9964	0.9964	0.9964	0.9984	0.9984	0.9984

Driscoll–Kraay standard errors are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$
Single person without children with a gross income of 50'000 Swiss francs.

Table A.11: Relation between income taxation and resource equalization transfers, 2009 to 2020

			Dependent variable:			
			income tax burden			
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged revenues from equalization	-0.4973***	-0.4932***	-0.4936***	-0.1801**	-0.1749*	-0.1753**
	(0.1409)	(0.1494)	(0.1499)	(0.0726)	(0.0797)	(0.0792)
YVAR		0.0628			0.0773	
		(0.1347)			(0.1180)	
GVAR		0.0416			0.0216	
		(0.0441)			(0.0203)	
Output gap			-0.0107			-0.0133
			(0.0209)			(0.0186)
Expenditure gap			0.0427			0.0230
			(0.0445)			(0.0214)
Lagged dependent variable				0.5014***	0.5003***	0.5004***
				(0.0491)	(0.0501)	(0.0500)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	312	312	312	312	312	312
Within R^2	0.9970	0.9970	0.9970	0.9985	0.9985	0.9985

Driscoll–Kraay standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01
Single person without children with a gross income of 150'000 Swiss francs.

Table A.12: Relation between income taxation and resource equalization transfers, 2009 to 2020

			Dependent variable:			
			income tax burden			
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged revenues from equalization	-0.4917***	-0.4839***	-0.4852***	-0.2068**	-0.1993**	-0.2002**
	(0.1398)	(0.1472)	(0.1486)	(0.0750)	(0.0829)	(0.0827)
YVAR		0.1083			0.1076	
		(0.1545)			(0.1404)	
GVAR		0.0491			0.0294	
		(0.0525)			(0.0287)	
Output gap			-0.0173			-0.0180
			(0.0240)			(0.0222)
Expenditure gap			0.0510			0.0313
			(0.0531)			(0.0301)
Lagged dependent variable				0.4731***	0.4717***	0.4718***
				(0.0537)	(0.0547)	(0.0545)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	312	312	312	312	312	312
Within R^2	0.9971	0.9972	0.9972	0.9984	0.9984	0.9984

Driscoll–Kraay standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01
Single person without children with a gross income of 250'000 Swiss francs.

Table A.13: Relation between income taxation and resource equalization transfers, 2009 to 2020

			Dependent variable:			
			effective income tax burden			
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged revenues from equalization	-0.4781***	-0.4687**	-0.4709**	-0.1740*	-0.1640	-0.1652*
	(0.1486)	(0.1543)	(0.1565)	(0.0836)	(0.0914)	(0.0909)
YVAR		0.1297			0.1368	
		(0.1998)			(0.1740)	
GVAR		0.0552			0.0326	
		(0.0642)			(0.0354)	
Output gap			-0.0191			-0.0223
			(0.0304)			(0.0275)
Expenditure gap			0.0574			0.0350
			(0.0655)			(0.0372)
Lagged dependent variable				0.5219***	0.5208***	0.5210***
				(0.0648)	(0.0661)	(0.0659)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	312	312	312	312	312	312
Within R^2	0.9965	0.9966	0.9966	0.9982	0.9982	0.9982

Driscoll–Kraay standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01
Single person without children with a gross income of 500'000 Swiss francs.

Table A.14: Relation between income taxation and resource equalization transfers, 2009 to 2020

			Dependent variable:			
			effective income tax burden			
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged revenues from equalization	-0.4904***	-0.4775**	-0.4810**	-0.1827**	-0.1701*	-0.1721*
	(0.1504)	(0.1547)	(0.1578)	(0.0811)	(0.0891)	(0.0888)
YVAR		0.1719			0.1684	
		(0.2108)			(0.1788)	
GVAR		0.0555			0.0317	
		(0.0657)			(0.0373)	
Output gap			-0.0243			-0.0265
			(0.0308)			(0.0277)
Expenditure gap			0.0583			0.0346
			(0.0670)			(0.0390)
Lagged dependent variable				0.5212***	0.5199***	0.5202***
				(0.0616)	(0.0629)	(0.0628)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	312	312	312	312	312	312
Within R^2	0.9967	0.9967	0.9967	0.9983	0.9983	0.9983

Driscoll–Kraay standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01
Single person without children with a gross income of 1'000'000 Swiss francs.

Table A.15: Relation between income taxation and resource equalization transfers, 2009 to 2020

	Dependent variable:					
	effective income tax burden					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged revenues from equalization	-0.0068	-0.0011	-0.0014	0.0379	0.0392	0.0390
	(0.0519)	(0.0586)	(0.0583)	(0.0537)	(0.0554)	(0.0552)
YVAR		0.0671			0.0165	
		(0.0624)			(0.0271)	
GVAR		-0.0023			0.0033	
		(0.0071)			(0.0043)	
Output gap			-0.0119			-0.0027
			(0.0097)			(0.0049)
Expenditure gap			-0.0010			0.0036
			(0.0068)			(0.0047)
Lagged dependent variable				0.6494***	0.6488***	0.6485***
				(0.0829)	(0.0828)	(0.0823)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	312	312	312	312	312	312
Within R^2	0.7608	0.7619	0.7624	0.9056	0.9058	0.9058

Driscoll–Kraay standard errors are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$
Married couple with 2 children with a gross income of 50'000 Swiss francs.

Table A.16: Relation between income taxation and resource equalization transfers, 2009 to 2020

	Dependent variable:					
	effective income tax burden					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged revenues from equalization	-0.5116***	-0.5054***	-0.5032***	-0.1384***	-0.1349**	-0.1354**
	(0.1246)	(0.1267)	(0.1267)	(0.0425)	(0.0496)	(0.0484)
YVAR		0.0805			0.0543	
		(0.1023)			(0.0854)	
GVAR		0.0205			0.0170	
		(0.0292)			(0.0158)	
Output gap			-0.0198			-0.0105
			(0.0182)			(0.0143)
Expenditure gap			0.0224			0.0180
			(0.0297)			(0.0166)
Lagged dependent variable				0.5607***	0.5599***	0.5589***
				(0.0859)	(0.0874)	(0.0872)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	312	312	312	312	312	312
Within R^2	0.9948	0.9948	0.9948	0.9972	0.9972	0.9972

Driscoll–Kraay standard errors are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$
Married couple with 2 children with a gross income of 150'000 Swiss francs.

Table A.17: Relation between income taxation and resource equalization transfers, 2009 to 2020

	Dependent variable:					
	effective income tax burden					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged revenues from equalization	-0.5189***	-0.5044***	-0.5045***	-0.1793***	-0.1717**	-0.1726**
	(0.1293)	(0.1278)	(0.1299)	(0.0565)	(0.0639)	(0.0637)
YVAR		0.1823			0.1156	
		(0.1785)			(0.1439)	
GVAR		0.0323			0.0257	
		(0.0405)			(0.0247)	
Output gap			-0.0337			-0.0210
			(0.0298)			(0.0244)
Expenditure gap			0.0358			0.0279
			(0.0418)			(0.0264)
Lagged dependent variable				0.5107***	0.5084***	0.5075***
				(0.0577)	(0.0599)	(0.0601)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	312	312	312	312	312	312
Within R^2	0.9959	0.9960	0.9960	0.9978	0.9978	0.9978

Driscoll–Kraay standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01
Married couple with 2 children with a gross income of 250'000 Swiss francs.

Table A.18: Relation between income taxation and resource equalization transfers, 2009 to 2020

	Dependent variable:					
	effective income tax burden					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged revenues from equalization	-0.5170***	-0.5077***	-0.5092***	-0.2208**	-0.2109**	-0.2124**
	(0.1341)	(0.1398)	(0.1416)	(0.0717)	(0.0797)	(0.0796)
YVAR		0.1258			0.1349	
		(0.1593)			(0.1560)	
GVAR		0.0460			0.0312	
		(0.0511)			(0.0305)	
Output gap			-0.0202			-0.0217
			(0.0242)			(0.0242)
Expenditure gap			0.0482			0.0336
			(0.0518)			(0.0321)
Lagged dependent variable				0.4612***	0.4603***	0.4603***
				(0.0514)	(0.0524)	(0.0522)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	312	312	312	312	312	312
Within R^2	0.9969	0.9970	0.9970	0.9982	0.9982	0.9982

Driscoll–Kraay standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01
Married couple with 2 children with a gross income of 500'000 Swiss francs.

Table A.19: Relation between income taxation and resource equalization transfers, 2009 to 2020

	Dependent variable:					
	effective income tax burden					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged revenues from equalization	-0.4961***	-0.4846***	-0.4875***	-0.1769**	-0.1650*	-0.1669*
	(0.1450)	(0.1487)	(0.1514)	(0.0781)	(0.0863)	(0.0856)
YVAR		0.1535			0.1586	
		(0.2090)			(0.1845)	
GVAR		0.0520			0.0321	
		(0.0613)			(0.0345)	
Output gap			-0.0222			-0.0249
			(0.0310)			(0.0287)
Expenditure gap			0.0545			0.0348
			(0.0628)			(0.0365)
Lagged dependent variable				0.5270***	0.5261***	0.5263***
				(0.0604)	(0.0616)	(0.0615)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	312	312	312	312	312	312
Within R^2	0.9964	0.9965	0.9965	0.9982	0.9982	0.9982

Driscoll–Kraay standard errors are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$
Married couple with 2 children with a gross income of 1'000'000 Swiss francs.

Table A.20: Relation between tax shares and resource equalization transfers, 2009 to 2019

	Dependent variable:					
	tax share of top 10% incomes					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged revenues from equalization	-1.6170**	-1.5615**	-1.5679**	-1.3407**	-1.3007**	-1.3150**
	(0.5198)	(0.5683)	(0.5686)	(0.4297)	(0.4576)	(0.4536)
YVAR		0.2799			0.2528	
		(0.4815)			(0.4039)	
GVAR		-0.1100			-0.0027	
		(0.1569)			(0.1645)	
Output gap			-0.0416			-0.0285
			(0.0727)			(0.0623)
Expenditure gap			-0.1079			-0.0013
			(0.1562)			(0.1646)
Lagged dependent variable				0.3776***	0.3773***	0.3771***
				(0.1087)	(0.1087)	(0.1087)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	286	286	286	286	286	286
Within R^2	0.9984	0.9984	0.9984	0.9986	0.9986	0.9986

Driscoll–Kraay standard errors are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A.21: Relation between tax shares and resource equalization transfers, 2009 to 2019

	Dependent variable:					
	tax share of top 5% incomes					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged revenues from equalization	-2.0393***	-1.9519**	-1.9811***	-1.7727***	-1.7114**	-1.7413***
	(0.5606)	(0.6212)	(0.6147)	(0.5074)	(0.5537)	(0.5422)
YVAR		0.4453			0.3650	
		(0.5289)			(0.4877)	
GVAR		-0.1659			-0.0620	
		(0.1854)			(0.1971)	
Output gap			-0.0453			-0.0303
			(0.0740)			(0.0681)
Expenditure gap			-0.1635			-0.0603
			(0.1870)			(0.1988)
Lagged dependent variable				0.2870**	0.2841**	0.2843**
				(0.0982)	(0.0988)	(0.0990)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	286	286	286	286	286	286
Within R^2	0.9972	0.9972	0.9972	0.9974	0.9974	0.9974

Driscoll–Kraay standard errors are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A.22: Relation between tax shares and resource equalization transfers, 2009 to 2019

	Dependent variable:					
	tax share of top 1% incomes					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged revenues from equalization	-2.3381***	-2.3009***	-2.3147***	-2.2695***	-2.2376***	-2.2525***
	(0.6268)	(0.6603)	(0.6537)	(0.5935)	(0.6217)	(0.6150)
YVAR		0.1763			0.1702	
		(0.5376)			(0.5364)	
GVAR		-0.0907			-0.0721	
		(0.2191)			(0.2376)	
Output gap			-0.0154			-0.0132
			(0.0767)			(0.0764)
Expenditure gap			-0.0898			-0.0714
			(0.2198)			(0.2383)
Lagged dependent variable				0.0621	0.0599	0.0598
				(0.0775)	(0.0824)	(0.0824)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	286	286	286	286	286	286
Within R^2	0.9914	0.9914	0.9914	0.9914	0.9914	0.9914

Driscoll–Kraay standard errors are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A.23: Relation between tax shares and resource equalization transfers, 2009 to 2019

	Dependent variable:					
	tax share of top 0.1% incomes					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged revenues from equalization	-2.2411***	-2.2247***	-2.2489***	-2.3203***	-2.3047***	-2.3282***
	(0.6187)	(0.6156)	(0.6173)	(0.5877)	(0.5790)	(0.5815)
YVAR		0.0353			0.0422	
		(0.4557)			(0.4544)	
GVAR		-0.1040			-0.1269	
		(0.1813)			(0.1959)	
Output gap			0.0206			0.0188
			(0.0678)			(0.0692)
Expenditure gap			-0.1050			-0.1277
			(0.1833)			(0.1980)
Lagged dependent variable				-0.0754	-0.0795	-0.0793
				(0.0717)	(0.0765)	(0.0765)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	286	286	286	286	286	286
Within R^2	0.9697	0.9697	0.9697	0.9699	0.9699	0.9699

Driscoll–Kraay standard errors are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A.24: Relation between corporate taxation and resource equalization transfers, 2009 to 2020

	Dependent variable:					
	corporate tax burden					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged revenues from equalization	-0.6508***	-0.6733***	-0.6502***	-0.1792	-0.1783	-0.1569
	(0.0993)	(0.0915)	(0.0887)	(0.1035)	(0.1464)	(0.1366)
YVAR		-0.3299			-0.1826	
		(0.7572)			(0.4470)	
GVAR		-0.1920			-0.2709	
		(0.2137)			(0.2235)	
Output gap			0.0105			-0.0106
			(0.0897)			(0.0457)
Expenditure gap			-0.1950			-0.2717
			(0.2278)			(0.2317)
Lagged dependent variable				0.6802***	0.6926***	0.6942***
				(0.0501)	(0.0475)	(0.0452)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	312	312	312	312	312	312
Within R^2	0.9948	0.9948	0.9948	0.9967	0.9968	0.9968

Driscoll–Kraay standard errors are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$
Corporation with a profit of 260'000 Swiss francs and equity of 2'000'000 Swiss francs.

Table A.25: Relation between corporate taxation and resource equalization transfers, 2009 to 2020

	Dependent variable:					
	corporate tax burden					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged revenues from equalization	-0.6000***	-0.6214***	-0.6010***	-0.2690	-0.2698	-0.2514
	(0.1488)	(0.1721)	(0.1672)	(0.1522)	(0.2004)	(0.1924)
YVAR		-0.3178			-0.1482	
		(0.7032)			(0.3957)	
GVAR		-0.1965			-0.2569	
		(0.1863)			(0.2113)	
Output gap			0.0144			-0.0109
			(0.0833)			(0.0405)
Expenditure gap			-0.1997			-0.2575
			(0.1999)			(0.2184)
Lagged dependent variable				0.6980***	0.7075***	0.7092***
				(0.0505)	(0.0479)	(0.0453)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	312	312	312	312	312	312
Within R^2	0.9951	0.9952	0.9952	0.9969	0.9971	0.9971

Driscoll–Kraay standard errors are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$
Corporation with a profit of 1'000'000 Swiss francs and equity of 5'000'000 Swiss francs.

Table A.26: Relation between corporate taxation and resource equalization transfers, 2009 to 2020

	Dependent variable:					
	corporate tax burden					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged revenues from equalization	-0.3622**	-0.3845***	-0.3617**	-0.0527	-0.0564	-0.0355
	(0.1572)	(0.1215)	(0.1262)	(0.0917)	(0.1195)	(0.1130)
YVAR		-0.3419			-0.2025	
		(0.8060)			(0.4505)	
GVAR		-0.2333			-0.3006	
		(0.2137)			(0.2381)	
Output gap			0.0136			-0.0068
			(0.0947)			(0.0446)
Expenditure gap			-0.2367			-0.3018
			(0.2291)			(0.2466)
Lagged dependent variable				0.7427***	0.7547***	0.7562***
				(0.0479)	(0.0471)	(0.0444)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	312	312	312	312	312	312
Within R^2	0.9944	0.9945	0.9945	0.9966	0.9968	0.9968

Driscoll–Kraay standard errors are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$
Corporation with a profit of 120'000 Swiss francs and equity of 600'000 Swiss francs.

Table A.27: Results including fiscal transfers, constant receivers, 2008 to 2020

	Dependent variable:					
	Primary Surplus incl. Transfers					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	0.1634***	0.1455***	0.1461***	0.1578***	0.1374***	0.1380***
	(0.0270)	(0.0247)	(0.0251)	(0.0280)	(0.0264)	(0.0269)
YVAR		-0.1011			-0.0278	
		(0.2591)			(0.2325)	
GVAR		-0.6684***			-0.6944***	
		(0.1581)			(0.1486)	
Output gap			0.0072			-0.0052
			(0.0410)			(0.0360)
Expenditure gap			-0.6685***			-0.6938***
			(0.1593)			(0.1499)
Lagged dependent variable				0.1397	0.2088**	0.2100**
				(0.0842)	(0.0705)	(0.0717)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	195	195	195	195	195	195
Within R^2	0.3294	0.5765	0.5762	0.3431	0.6064	0.6064

Driscoll–Kraay standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01

Table A.28: Results excluding tesource rqualization, constant receivers, 2008 to 2020

	Dependent variable:					
	Primary Surplus excl. Resource Equalization					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	0.1059***	0.0880***	0.0889***	0.0863*	0.0619*	0.0625*
	(0.0273)	(0.0234)	(0.0239)	(0.0400)	(0.0297)	(0.0299)
YVAR		-0.1161			0.0049	
		(0.2766)			(0.2390)	
GVAR		-0.6610***			-0.6964***	
		(0.1534)			(0.1456)	
Output gap			0.0064			-0.0115
			(0.0416)			(0.0335)
Expenditure gap			-0.6610***			-0.6954***
			(0.1538)			(0.1464)
Lagged dependent variable				0.1853*	0.2526**	0.2540**
				(0.1018)	(0.0845)	(0.0857)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	195	195	195	195	195	195
Within R^2	0.8268	0.8863	0.8862	0.8337	0.8989	0.8989

Driscoll–Kraay standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01

Table A.29: Results including fiscal transfers, constant payers, 2008 to 2020

	Dependent variable:					
	Primary Surplus incl. Transfers					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	0.1351**	0.1370***	0.1372***	0.1021***	0.1237***	0.1244***
	(0.0512)	(0.0317)	(0.0307)	(0.0328)	(0.0311)	(0.0300)
YVAR		0.0590			-0.0202	
		(0.3207)			(0.3253)	
GVAR		-1.0546***			-1.0284***	
		(0.2329)			(0.2427)	
Output gap			-0.0120			-0.0063
			(0.0315)			(0.0325)
Expenditure gap			-1.0522***			-1.0295***
			(0.2303)			(0.2386)
Lagged dependent variable				0.5050*	0.1931*	0.1903*
				(0.2397)	(0.0909)	(0.0978)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	78	78	78	78	78	78
Within R^2	0.2401	0.7771	0.7773	0.2884	0.7838	0.7838

Driscoll–Kraay standard errors are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A.30: Results excluding resource equalization, constant payers, 2008 to 2020

	Dependent variable:					
	Primary Surplus excl. Resource Equalization					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	0.1506**	0.1541***	0.1543***	0.1210***	0.1328***	0.1343***
	(0.0509)	(0.0304)	(0.0295)	(0.0324)	(0.0305)	(0.0297)
YVAR		0.2392			-0.0175	
		(0.3793)			(0.3706)	
GVAR		-1.0429***			-0.9877***	
		(0.2658)			(0.2627)	
Output gap			-0.0394			-0.0167
			(0.0368)			(0.0357)
Expenditure gap			-1.0329***			-0.9894***
			(0.2606)			(0.2567)
Lagged dependent variable				0.6824**	0.4365**	0.4279**
				(0.3113)	(0.1676)	(0.1715)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	78	78	78	78	78	78
Within R^2	0.4978	0.8173	0.8179	0.5544	0.8389	0.8391

Driscoll–Kraay standard errors are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A.31: Results excluding resource equalization with alternative specification of business cycle and expenditure indicators, 2008 to 2020

	Dependent variable:					
	Primary Surplus excl. Resource Equalization					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	0.1155***	0.0830***	0.0834***	0.1042**	0.0696***	0.0699***
	(0.0350)	(0.0155)	(0.0154)	(0.0388)	(0.0172)	(0.0170)
YVAR		-0.0582			-0.0320	
		(0.2749)			(0.2299)	
GVAR		-0.8569***			-0.8701***	
		(0.1588)			(0.1578)	
Output gap			-0.0059			-0.0066
			(0.0251)			(0.0213)
Expenditure gap			-0.8566***			-0.8696***
			(0.1614)			(0.1599)
Lagged dependent variable				0.2323*	0.2675***	0.2677***
				(0.1077)	(0.0821)	(0.0827)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	338	338	338	338	338	338
Within R^2	0.7053	0.8496	0.8496	0.7181	0.8664	0.8664

Driscoll–Kraay standard errors are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A.32: Results excluding resource equalization with alternative specification of business cycle and expenditure indicators, 2008 to 2020

	Dependent variable:					
	Primary Surplus excl. Resource Equalization					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	-0.2534*	-0.2635***	-0.2620***	-0.2373*	-0.2455***	-0.2444***
	(0.1360)	(0.0828)	(0.0835)	(0.1292)	(0.0741)	(0.0747)
RI	-0.0004	0.0029	0.0031	-0.0033	-0.0003	-0.0002
	(0.0049)	(0.0027)	(0.0026)	(0.0047)	(0.0022)	(0.0021)
Lagged debt-to-GDP ratio*RI	0.4097**	0.3721***	0.3698***	0.3918**	0.3516***	0.3499***
	(0.1639)	(0.0877)	(0.0879)	(0.1559)	(0.0772)	(0.0776)
YVAR		-0.0864			-0.0938	
		(0.2222)			(0.1920)	
GVAR		-0.8536***			-0.8623***	
		(0.1490)			(0.1470)	
Output gap			0.0020			0.0051
			(0.0260)			(0.0225)
Expenditure gap			-0.8543***			-0.8633***
			(0.1519)			(0.1494)
Lagged dependent variable				0.2100**	0.2379***	0.2380***
				(0.0843)	(0.0597)	(0.0598)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Conditional marginal effect of lagged debt-to-GDP ratio	0.1553***	0.1076***	0.1069***	0.1535***	0.1052***	0.1046***
	(0.0516)	(0.0213)	(0.0212)	(0.0531)	(0.0210)	(0.0209)
Conditional marginal effect of RI	0.0321**	0.0324***	0.0325***	0.0279**	0.0276***	0.0276***
	(0.0130)	(0.0078)	(0.0082)	(0.0115)	(0.0068)	(0.0070)
Observations	338	338	338	338	338	338
Within R^2	0.7266	0.8692	0.8691	0.7364	0.8818	0.8817

Driscoll–Kraay standard errors are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$
Conditional marginal effects evaluated for all variables at means.

Table A.33: Results including fiscal transfers with clustered standard errors, 2008 to 2020

	Dependent variable:					
	Primary Surplus incl. Transfers					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	0.1642***	0.1319***	0.1322***	0.1565***	0.1220***	0.1223***
	(0.0342)	(0.0291)	(0.0292)	(0.0335)	(0.0267)	(0.0267)
YVAR		-0.1127			-0.0980	
		(0.1433)			(0.1463)	
GVAR		-0.8566***			-0.8663***	
		(0.1142)			(0.1098)	
Output gap			0.0053			0.0042
			(0.0221)			(0.0225)
Expenditure gap			-0.8577***			-0.8672***
			(0.1146)			(0.1101)
Lagged dependent variable				0.1649**	0.2060***	0.2064***
				(0.0607)	(0.0448)	(0.0452)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	338	338	338	338	338	338
Adjusted R^2	0.2333	0.6442	0.6344	0.2457	0.6663	0.6660

Standard errors clustered at the cantonal level are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A.34: Results excluding resource equalization with clustered standard errors, 2008 to 2020

	Dependent variable:					
	Primary Surplus excl. Resource Equalization					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	0.1155**	0.0837**	0.0841*	0.1042**	0.0705*	0.0708*
	(0.0403)	(0.0367)	(0.0366)	(0.0382)	(0.0305)	(0.0302)
YVAR		-0.0366			-0.0123	
		(0.1500)			(0.1581)	
GVAR		-0.8520***			-0.8638***	
		(0.1188)			(0.1119)	
Output gap			-0.0092			-0.0100
			(0.0231)			(0.0245)
Expenditure gap			-0.8515***			-0.8631***
			(0.1185)			(0.1116)
Lagged dependent variable				0.2323***	0.2642***	0.2644***
				(0.0789)	(0.0755)	(0.0762)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	338	338	338	338	338	338
Adjusted R^2	0.6680	0.8291	0.8206	0.6813	0.8473	0.8474

Standard errors clustered at the cantonal level are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A.35: Results including fiscal transfers with clustered standard errors, 2008 to 2020

	Dependent variable:					
	Primary Surplus incl. Fiscal Transfers					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	0.0335	0.0112	0.0126	0.0254	0.0011	0.0024
	(0.1473)	(0.1251)	(0.1258)	(0.1437)	(0.1195)	(0.1200)
RI	-0.0017	0.0020	0.0022	-0.0024	0.0012	0.0014
	(0.0043)	(0.0034)	(0.0034)	(0.0043)	(0.0033)	(0.0033)
Lagged debt-to-GDP ratio*RI	0.1512	0.1257	0.1235	0.1544	0.1291	0.1272
	(0.1921)	(0.1455)	(0.1459)	(0.1891)	(0.1416)	(0.1418)
YVAR		-0.1133			-0.1076	
		(0.1346)			(0.1383)	
GVAR		-0.8582***			-0.8668***	
		(0.1128)			(0.1082)	
Output gap			0.0064			0.0065
			(0.0207)			(0.0210)
Expenditure gap			-0.8597***			-0.8682***
			(0.1135)			(0.1088)
Lagged dependent variable				0.1673**	0.2043***	0.2045***
				(0.0614)	(0.0458)	(0.0461)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Conditional marginal effect of lagged	0.1844***	0.1366***	0.1358***	0.1794***	0.1299***	0.1292***
debt-to-GDP ratio	(0.0569)	(0.0376)	(0.0372)	(0.0563)	(0.0363)	(0.0359)
Conditional marginal effect of RI	0.0103	0.0120	0.0120	0.0099	0.0114	0.0115
	(0.0132)	(0.0111)	(0.0111)	(0.0129)	(0.0106)	(0.0106)
Observations	338	338	338	338	338	338
Adjusted R^2	0.2360	0.6492	0.6428	0.2488	0.6710	0.6615

Standard errors clustered at the cantonal level are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$
Conditional marginal effects evaluated for all variables at means.

Table A.36: Results excluding resource equalization with clustered standard errors, 2008 to 2020

	Dependent variable:					
	Primary Surplus excl. Resource Equalization					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	-0.2534	-0.2745**	-0.2726*	-0.2373	-0.2570**	-0.2556**
	(0.1484)	(0.1318)	(0.1326)	(0.1450)	(0.1257)	(0.1263)
RI	-0.0004	0.0034	0.0036	-0.0033	0.0003	0.0004
	(0.0055)	(0.0041)	(0.0040)	(0.0051)	(0.0036)	(0.0035)
Lagged debt-to-GDP ratio*RI	0.4097**	0.3827***	0.3801***	0.3918**	0.3630**	0.3609**
	(0.1752)	(0.1354)	(0.1361)	(0.1774)	(0.1367)	(0.1370)
YVAR		-0.0659			-0.0735	
		(0.1067)			(0.1307)	
GVAR		-0.8536***			-0.8602***	
		(0.1141)			(0.1081)	
Output gap			-0.0016			0.0014
			(0.0171)			(0.0201)
Expenditure gap			-0.8542***			-0.8610***
			(0.1142)			(0.1083)
Lagged dependent variable				0.2100***	0.2319***	0.2318***
				(0.0683)	(0.0724)	(0.0728)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Conditional marginal effect of lagged	0.1553***	0.1072***	0.1065***	0.1535***	0.1050***	0.1044***
debt-to-GDP ratio	(0.0487)	(0.0326)	(0.0323)	(0.0500)	(0.0315)	(0.0311)
Conditional marginal effect of RI	0.0321**	0.0338***	0.0338***	0.0279**	0.0291**	0.0291**
	(0.0135)	(0.0113)	(0.0113)	(0.0130)	(0.0109)	(0.0110)
Observations	338	338	338	338	338	338
Within R^2	0.6899	0.8522	0.8521	0.7001	0.8654	0.8653

Standard errors clustered at the cantonal level are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$
Conditional marginal effects evaluated for all variables at means.

Table A.37: Results including fiscal transfers in levels, 2008 to 2020

	Dependent variable:			
	primary surplus-to-GDP incl. all transfers			
	(1)	(2)	(3)	(4)
Lagged debt	0.1218***	0.1384***	0.1227***	0.1393***
	(0.0235)	(0.0296)	(0.0297)	(0.0322)
Log GDP		-5725.57		-5724.61
		(9448.43)		(9486.83)
lagged dependent variable			-0.0103	-0.0103
			(0.1369)	(0.1364)
Canton- and year-fixed effects?	✓	✓	✓	✓
Observations	338	338	338	338
Within R^2	0.1950	0.1960	0.1950	0.1960

Driscoll Kraay standard errors are reported in parantheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A.38: Results excluding resource equalization in levels, 2008 to 2020

	Dependent variable:			
	primary surplus-to-GDP excl. resource equalization transfers			
	(1)	(2)	(3)	(4)
Lagged debt	0.0772***	0.1278***	0.0754**	0.1259***
	(0.0249)	(0.0283)	(0.0281)	(0.0293)
Log GDP		-17479.94**		-17350.68**
		(7842.01)		(7665.13)
lagged dependent variable			0.0390	0.0332
			(0.1190)	(0.1153)
Canton- and year-fixed effects?	✓	✓	✓	✓
Observations	338	338	338	338
Within R^2	0.4378	0.4441	0.4382	0.4443

Driscoll Kraay standard errors are reported in parantheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A.39: Results including fiscal transfers in levels, 2008 to 2020

	Dependent variable:			
	primary surplus-to-GDP incl. all transfers			
	(1)	(2)	(3)	(4)
Lagged debt	-0.1866	-0.1966	-0.1974	-0.2111
	(0.2766)	(0.3079)	(0.2643)	(0.2915)
RI	-109.6123	-447.8452	-83.0536	-539.1836
	(1723.7376)	(1843.7945)	(1740.8564)	(1858.3558)
Lagged debt*RI	0.0032	0.0033	0.0033	0.0034
	(0.0027)	(0.0030)	(0.0025)	(0.0028)
Log GDP		2270.11		3064.03
		(13540.55)		(13501.67)
lagged dependent variable			-0.0573	-0.0581
			(0.1061)	(0.1058)
Canton- and year-fixed effects?	✓	✓	✓	✓
Conditional marginal effect of lagged debt	0.1306***	0.1285***	0.1354***	0.1326***
	(0.0310)	(0.0332)	(0.0301)	(0.0323)
Conditional marginal effect of RI	7002.4080	6842.1080	7379.218	7168.425
	(6786.181)	(6349.064)	(6381.301)	(6027.733)
Observations	338	338	338	338
Within R^2	0.2102	0.2102	0.2111	0.2112

Driscoll Kraay standard errors are reported in parantheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A.40: Results excluding resource equalization in levels, 2008 to 2020

	Dependent variable:			
	primary surplus-to-GDP excl. resource equalization transfers			
	(1)	(2)	(3)	(4)
Lagged debt	-0.4336	-0.3395	-0.4492	-0.3542
	(0.2697)	(0.2895)	(0.2606)	(0.2832)
RI	-802.9252	2371.8423	-760.0931	2494.8854
	(1628.3670)	(1907.9923)	(1691.4913)	(2042.2576)
Lagged debt*RI	0.0053*	0.0046	0.0055*	0.0048
	(0.0027)	(0.0028)	(0.0026)	(0.0027)
Log GDP		-21308.00		-21823.51*
		(11981.43)		(12156.24)
lagged dependent variable			-0.0478	-0.0516
			(0.1103)	(0.1072)
Canton- and year-fixed effects?	✓	✓	✓	✓
Conditional marginal effect of lagged debt	0.0998***	0.1194***	0.1018***	0.1220***
	(0.0327)	(0.0323)	(0.0309)	(0.0291)
Conditional marginal effect of RI	11156.82*	12661.45**	11595.58*	13171.47**
	(6537.509)	(6177.809)	(6424.516)	(6050.515)
Observations	338	338	338	338
Within R^2	0.4676	0.4693	0.4681	0.4699

Driscoll Kraay standard errors are reported in parantheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A.41: Results including fiscal transfers using the CCEMG estimator, 2008 to 2020

	Dependent variable:					
	Primary Surplus incl. Transfers					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	0.1851**	0.0940	0.1024*	0.2347**	0.1683**	0.1642**
	(0.0867)	(0.0583)	(0.0576)	(0.1092)	(0.0779)	(0.0716)
YVAR		0.1321			0.1309	
		(0.2546)			(0.4075)	
GVAR		-0.8432***			-0.9797***	
		(0.0849)			(0.1493)	
Output gap			-0.0301			-0.0379
			(0.0279)			(0.0452)
Expenditure gap			-0.8428***			-0.9860***
			(0.0824)			(0.1496)
Lagged dependent variable				0.0335	-0.0041	-0.0163
				(0.0845)	(0.1181)	(0.1152)
CSA dependent variable	1.0470***	0.9064***	0.9022***	1.0572**	0.6966*	0.6668**
	(0.2603)	(0.2151)	(0.2128)	(0.4420)	(0.3620)	(0.3079)
CSA lagged debt-to-GDP ratio	-0.2706	-0.0763	-0.0658	-0.3162	0.0596	0.0897
	(0.2038)	(0.1594)	(0.1564)	(0.2118)	(0.2741)	(0.2552)
CSA YVAR		-0.1713			-0.1867	
		(0.3323)			(0.6708)	
CSA GVAR		0.7171***			0.8899***	
		(0.2169)			(0.3229)	
CSA output gap			0.0370			0.0372
			(0.0427)			(0.0783)
CSA expenditure gap			0.7033***			0.8302***
			(0.2200)			(0.3200)
CSA lagged dependent variable				-0.0199	-0.0097	0.0293
				(0.3609)	(0.2189)	(0.2078)
Constant	0.0014	-0.0043	-0.0054	0.0080	-0.0223	-0.0243
	(0.0112)	(0.0098)	(0.0097)	(0.0162)	(0.0232)	(0.0214)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	338	338	338	338	338	338

Standard errors are reported in parentheses. $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A.42: Results excluding tesource equalization using the CCEMG estimator, 2008 to 2020

	Dependent variable:					
	Primary Surplus excl. Resource Equalization					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	0.1862**	0.1134	0.1174	0.2115**	0.0908	0.0926*
	(0.0852)	(0.0731)	(0.0738)	(0.0961)	(0.0570)	(0.0556)
YVAR		0.2327			-0.0028	
		(0.2624)			(0.3929)	
GVAR		-0.8228***			-0.8494***	
		(0.0857)			(0.1073)	
Output gap			-0.0512			-0.0261
			(0.0337)			(0.0395)
Expenditure gap			-0.8166***			-0.8506***
			(0.0814)			(0.1046)
Lagged dependent variable				0.0549	0.1351	0.1113
				(0.0644)	(0.1003)	(0.1029)
CSA dependent variable	1.0491***	0.9745***	0.9702***	0.9613**	1.0793***	0.9672***
	(0.3209)	(0.2731)	(0.2695)	(0.4507)	(0.3768)	(0.2961)
CSA lagged debt-to-GDP ratio	-0.2408	-0.0835	-0.0669	-0.3670	-0.0233	0.0197
	(0.2515)	(0.1964)	(0.1974)	(0.2953)	(0.1923)	(0.1753)
CSA YVAR		-0.1854			0.2715	
		(0.3050)			(0.7007)	
CSA GVAR		0.7484***			1.2595***	
		(0.2502)			(0.3246)	
CSA output gap			0.0445			-0.0117
			(0.0410)			(0.0865)
CSA expenditure gap			0.7353***			1.2372***
			(0.2550)			(0.3204)
CSA lagged dependent variable				0.1487	-0.2012	-0.1333
				(0.2702)	(0.2179)	(0.2085)
Constant	-0.0004	-0.0050	-0.0064	0.0082	-0.0081	-0.0124
	(0.0154)	(0.0141)	(0.0142)	(0.0196)	(0.0164)	(0.0148)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	338	338	338	338	338	338

Standard errors are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A.43: Results including fiscal transfers using the CCEMG estimator, 2008 to 2020

	Dependent variable:					
	Primary Surplus incl. Transfers					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	-0.3124	0.6587	1.3852	4.9793	-0.5118	1.3577
	(3.5770)	(2.8923)	(3.1791)	(4.8699)	(1.1516)	(1.3799)
RI	-0.0015	-0.0016	-0.0010	0.0041	0.0009	0.0024
	(0.0023)	(0.0027)	(0.0029)	(0.0036)	(0.0023)	(0.0025)
Lagged debt-to-GDP ratio*RI	-0.0013	-0.0054	-0.0129	-0.0546	0.0063	-0.0132
	(0.0435)	(0.0326)	(0.0372)	(0.0581)	(0.0129)	(0.0174)
YVAR		-0.2434			0.5772	
		(0.6995)			(0.9503)	
GVAR		-0.9829***			-1.7496***	
		(0.1416)			(0.5942)	
Output gap			0.0221			-0.1813
			(0.0826)			(0.1296)
Expenditure gap			-0.9750***			-1.9249**
			(0.1408)			(0.7922)
Lagged dependent variable				-0.1141	0.2160	0.1482
				(0.1099)	(0.4519)	(0.5669)
CSA dependent variable	1.1185**	0.6653	0.5935	0.9826**	-0.9191	-0.7724
	(0.5246)	(0.6237)	(0.6266)	(0.4033)	(1.0256)	(1.0279)
CSA lagged debt-to-GDP ratio	-1.0243	-1.5755	-1.5733	-1.3178	1.1747	2.4076
	(1.4851)	(1.2305)	(1.2340)	(1.9095)	(2.2269)	(3.2639)
CSA RI	-0.0009	-0.0011	-0.0012	-0.0013	-0.0029	-0.0015
	(0.0018)	(0.0013)	(0.0013)	(0.0016)	(0.0032)	(0.0040)
CSA lagged debt-to-GDP ratio*RI	0.0058	0.0157	0.0155	0.0116	0.0033	-0.0110
	(0.0190)	(0.0150)	(0.0149)	(0.0212)	(0.0241)	(0.0321)
CSA YVAR		0.5892			-1.0033	
		(0.7632)			(1.9368)	
CSA GVAR		1.0088**			0.6932	
		(0.4882)			(0.9526)	
CSA output gap			-0.0567			0.4207
			(0.1013)			(0.3783)
CSA expenditure gap			0.8975*			1.6606
			(0.5112)			(1.5193)
CSA lagged dependent variable				-0.1607	-0.9264	-1.0508
				(0.4982)	(1.0159)	(1.1691)
Constant	0.2776	0.3012	0.2483	-0.3916	0.0832	-0.1939
	(0.1727)	(0.3347)	(0.3260)	(0.4897)	(0.2158)	(0.3055)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	338	338	338	338	338	338

Standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01

Table A.44: Results excluding resource equalization using the CCEMG estimator, 2008 to 2020

	Dependent variable:					
	Primary Surplus excl. Resource Equalization					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	-0.8516	0.3504	0.9602	3.2017	-0.7631	-0.8271
	(3.5807)	(2.9185)	(3.2937)	(4.5969)	(1.0728)	(1.8599)
RI	-0.0015	-0.0015	-0.0009	0.0032	-0.0013	-0.0019
	(0.0023)	(0.0026)	(0.0029)	(0.0031)	(0.0018)	(0.0028)
Lagged debt-to-GDP ratio*RI	0.0061	-0.0005	-0.0066	-0.0357	0.0150	0.0198
	(0.0437)	(0.0333)	(0.0392)	(0.0536)	(0.0130)	(0.0228)
YVAR		-0.3234			0.7623	
		(0.7142)			(1.0019)	
GVAR		-0.9762***			-1.4955***	
		(0.1363)			(0.3911)	
Output gap			0.0323			-0.3847
			(0.0861)			(0.2575)
Expenditure gap			-0.9688***			-1.9972***
			(0.1352)			(0.7451)
Lagged dependent variable				-0.1672	-0.1237	0.2697
				(0.1872)	(0.4400)	(1.0001)
CSA dependent variable	1.1146**	0.6723	0.6118	1.1609**	0.2793	0.9441
	(0.5107)	(0.5789)	(0.5695)	(0.5784)	(0.6657)	(0.6070)
CSA lagged debt-to-GDP ratio	-1.0402	-1.4610	-1.4430	-1.6985	2.0917	8.0045
	(1.4263)	(1.1214)	(1.1146)	(1.3164)	(3.1820)	(8.1162)
CSA RI	-0.0014	-0.0014	-0.0016	-0.0009	0.0021	0.0084
	(0.0016)	(0.0011)	(0.0011)	(0.0018)	(0.0033)	(0.0085)
CSA lagged debt-to-GDP ratio*RI	0.0059	0.0142	0.0138	0.0071	-0.0184	-0.0806
	(0.0180)	(0.0134)	(0.0132)	(0.0172)	(0.0288)	(0.0768)
CSA YVAR		0.6664			-1.9213	
		(0.7644)			(2.3470)	
CSA GVAR		0.9741**			2.0309*	
		(0.4589)			(1.2096)	
CSA output gap			-0.0566			0.9637
			(0.1014)			(0.7814)
CSA expenditure gap			0.8786*			5.1302
			(0.4814)			(3.2975)
CSA lagged dependent variable				0.6722	-0.1262	-0.6692
				(0.4770)	(0.7000)	(1.8711)
Constant	0.3188*	0.3158	0.2679	-0.2664	-0.1804	-0.7448
	(0.1764)	(0.3016)	(0.3000)	(0.4404)	(0.2779)	(0.7194)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	338	338	338	338	338	338

Standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01

Table A.45: Results using the bias corrected least-squares dummy variable estimator, 2008 to 2020

	Dependent variable:					
	Primary Surplus incl. Transfers			Primary Surplus excl. Resource Equalization		
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	0.1536***	0.1027***	0.1025***	0.1413***	0.0876***	0.0872***
	(0.0362)	(0.0201)	(0.0200)	(0.0386)	(0.0225)	(0.0225)
YVAR		0.0105			-0.0495	
		(0.1195)			(0.1342)	
GVAR		-0.9358***			-0.9347***	
		(0.0411)			(0.0461)	
Output gap			-0.0086			-0.0011
			(0.0171)			(0.0192)
Expenditure gap			-0.9371***			-0.9373***
			(0.0409)			(0.0458)
Lagged dependent variable	0.3167***	0.2976***	0.2951***	0.3656***	0.3584***	0.3559***
	(0.0548)	(0.0321)	(0.0321)	(0.0554)	(0.0348)	(0.0346)
Observations	338	338	338	338	338	338

Standard errors are reported in parentheses. Variance-covariance matrix based on bootstrap with 1000 repetitions.
Bias correction using the Arellano and Bond (1991) estimator. $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A.46: Results using the bias corrected least-squares dummy variable estimator, 2008 to 2020

	Dependent variable:					
	Primary Surplus incl. Transfers			Primary Surplus excl. Resource Equalization		
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	-0.1043	-0.1002	-0.0990	-0.1430	-0.1426**	-0.1415*
	(0.1234)	(0.0693)	(0.0694)	(0.1286)	(0.0726)	(0.00725)
RI	-0.0152	-0.0082	-0.0081	0.0085	0.0159**	0.0160**
	(0.0122)	(0.0068)	(0.0068)	(0.0126)	(0.0072)	(0.0071)
Lagged debt-to-GDP ratio*RI	0.2800**	0.2201***	0.2185***	0.3075**	0.2486***	0.2472***
	(0.1290)	(0.0724)	(0.0725)	(0.1774)	(0.0759)	(0.0758)
YVAR		-0.0041			-0.0452	
		(0.1222)			(0.1282)	
GVAR		-0.9323***			-0.9385***	
		(0.0421)			(0.0441)	
Output gap			-0.0057			-0.0003
			(0.0175)			(0.0183)
Expenditure gap			-0.9337***			-0.9408***
			(0.0419)			(0.0438)
Lagged dependent variable	0.3079***	0.2974***	0.2953***	0.3312***	0.3203***	0.3182***
	(0.0557)	(0.0330)	(0.0330)	(0.0554)	(0.0337)	(0.0337)
Observations	338	338	338	338	338	338

Standard errors are reported in parentheses. Variance-covariance matrix based on bootstrap with 1000 repetitions.
Bias correction using the Arellano and Bond (1991) estimator. $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A.47: Results including fiscal transfers, political factors, 2008 to 2020

			Dependent variable:			
			primary surplus-to-GDP incl. all transfers			
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	0.1545***	0.1262***	0.1267***	0.1459***	0.1157***	0.1162***
	(0.0287)	(0.0189)	(0.0190)	(0.0280)	(0.0194)	(0.0193)
Government ideology (left)	-0.0011	0.0026	0.0026	-0.0016	0.0021	0.0021
	(0.0020)	(0.0026)	(0.0026)	(0.0020)	(0.0029)	(0.0029)
Government ideology (center)	-0.0059*	-0.0017	-0.0016	-0.0062*	-0.0020	-0.0019
	(0.0031)	(0.0019)	(0.0018)	(0.0032)	(0.0018)	(0.0017)
Election	0.0009	0.0007	0.0007	0.0010	0.0008	0.0008
	(0.0006)	(0.0005)	(0.0005)	(0.0006)	(0.0006)	(0.0006)
YVAR		-0.1193			-0.1094	
		(0.2070)			(0.1767)	
GVAR		-0.8547***			-0.8626***	
		(0.1510)			(0.1461)	
Output gap			0.0032			0.0027
			(0.0208)			(0.0174)
Expenditure gap			-0.8560***			-0.8638***
			(0.1548)			(0.1492)
Lagged dependent variable				0.1757*	0.2085***	0.2088***
				(0.0837)	(0.0607)	(0.0615)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	325	325	325	325	325	325
Within R^2	0.3305	0.6925	0.6920	0.3454	0.7134	0.7130

Driscoll–Kraay standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01

Table A.48: Results excluding resource equalization, political factors, 2008 to 2020

	Dependent variable:					
	primary surplus-to-GDP excl. resource equalization					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	0.1057***	0.0780***	0.0786***	0.0925**	0.0630***	0.0635***
	(0.0276)	(0.0161)	(0.0162)	(0.0316)	(0.0188)	(0.0185)
Government ideology (left)	-0.0034	0.0003	0.0003	-0.0030	0.0008	0.0008
	(0.0026)	(0.0029)	(0.0029)	(0.0022)	(0.0030)	(0.0031)
Government ideology (center)	-0.0073**	-0.0031	-0.0030	-0.0075**	-0.0033*	-0.0032*
	(0.0032)	(0.0020)	(0.0019)	(0.0032)	(0.0018)	(0.0017)
Election	0.0009	0.0007	0.0007	0.0009	0.0007	0.0007
	(0.0006)	(0.0005)	(0.0005)	(0.0006)	(0.0006)	(0.0006)
YVAR		-0.0478			-0.0327	
		(0.2742)			(0.2303)	
GVAR		-0.8460***			-0.8571***	
		(0.1489)			(0.1469)	
Output gap			-0.0113			-0.0108
			(0.0252)			(0.0211)
Expenditure gap			-0.8456***			-0.8566***
			(0.1526)			(0.1499)
Lagged dependent variable				0.2413**	0.2702***	0.2703***
				(0.1020)	(0.0814)	(0.0820)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Observations	325	325	325	325	325	325
Within R^2	0.7118	0.8521	0.8522	0.7255	0.8692	0.8693

Driscoll–Kraay standard errors are reported in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A.49: Results including fiscal transfers, political factors, 2008 to 2020

	Dependent variable:					
	primary surplus-to-GDP incl. all transfers					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	0.0258	-0.0090	-0.0069	0.0180	-0.0182	-0.0163
	(0.1343)	(0.0757)	(0.0759)	(0.1356)	(0.0759)	(0.0761)
RI	-0.0000	0.0000	0.0000	-0.0000	0.0000	0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Lagged debt-to-GDP ratio*RI	0.0015	0.0014	0.0013	0.0015	0.0014*	0.0014
	(0.0017)	(0.0008)	(0.0008)	(0.0017)	(0.0008)	(0.0008)
Government ideology (left)	-0.0002	0.0038	0.0038	-0.0007	0.0033	0.0033
	(0.0014)	(0.0022)	(0.0022)	(0.0014)	(0.0025)	(0.0025)
Government ideology (center)	-0.0054*	-0.0014	-0.0013	-0.0056*	-0.0016	-0.0015
	(0.0027)	(0.0016)	(0.0015)	(0.0028)	(0.0016)	(0.0015)
Election	0.0010	0.0007	0.0007	0.0011	0.0008	0.0008
	(0.0007)	(0.0005)	(0.0005)	(0.0007)	(0.0006)	(0.0006)
YVAR		-0.1150			-0.1151	
		(0.1905)			(0.1604)	
GVAR		-0.8591***			-0.8656***	
		(0.1498)			(0.1440)	
Output gap			0.0039			0.0047
			(0.0216)			(0.0181)
Expenditure gap			-0.8607***			-0.8673***
			(0.1537)			(0.1473)
Lagged dependent variable				0.1771*	0.2053***	0.2053***
				(0.0836)	(0.0611)	(0.0618)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Conditional marginal effect of lagged debt	0.1728***	0.1292***	0.1284***	0.1673***	0.1226***	0.1219***
	(0.0479)	(0.0237)	(0.0237)	(0.0479)	(0.0230)	(0.0229)
Conditional marginal effect of RI	0.0001	0.0001*	0.0001*	0.0001	0.0001*	0.0001*
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Observations	325	325	325	325	325	325
Within R^2	0.3368	0.7007	0.7002	0.3519	0.7208	0.7204

Driscoll–Kraay standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01

Table A.50: Results excluding resource equalization, political factors, 2008 to 2020

	Dependent variable:					
	primary surplus-to-GDP excl. resource equalization					
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged debt-to-GDP ratio	-0.2603*	-0.2937***	-0.2912***	-0.2447*	-0.2774***	-0.2754***
	(0.1376)	(0.0800)	(0.0801)	(0.1317)	(0.0695)	(0.0697)
RI	0.0000	0.0000	0.0000	-0.0000	0.0000	0.0000
	(0.0001)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Lagged debt-to-GDP ratio*RI	0.0040**	0.0039***	0.0039***	0.0038**	0.0037***	0.0037***
	(0.0016)	(0.0008)	(0.0008)	(0.0016)	(0.0007)	(0.0007)
Government ideology (left)	-0.0006	0.0034	0.0034	-0.0007	0.0034	0.0034
	(0.0016)	(0.0021)	(0.0021)	(0.0013)	(0.0024)	(0.0024)
Government ideology (center)	-0.0060**	-0.0020	-0.0019	-0.0062**	-0.0021	-0.0021
	(0.0026)	(0.0015)	(0.0014)	(0.0027)	(0.0015)	(0.0014)
Election	0.0010	0.0007	0.0007	0.0011	0.0008	0.0008
	(0.0007)	(0.0005)	(0.0005)	(0.0007)	(0.0006)	(0.0006)
YVAR		-0.0692			-0.0857	
		(0.2151)			(0.1808)	
GVAR		-0.8540***			-0.8591***	
		(0.1385)			(0.1360)	
Output gap			-0.0042			-0.0000
			(0.0248)			(0.0203)
Expenditure gap			-0.8547***			-0.8602***
			(0.1422)			(0.1390)
Lagged dependent variable				0.2186**	0.2360***	0.2357***
				(0.0834)	(0.0632)	(0.0631)
Canton- and year-fixed effects?	✓	✓	✓	✓	✓	✓
Conditional marginal effect of lagged debt	0.1425***	0.0988***	0.0980***	0.1400***	0.0960***	0.0952***
	(0.0461)	(0.0223)	(0.0222)	(0.0475)	(0.0228)	(0.0227)
Conditional marginal effect of RI	0.0003**	0.0004***	0.0004***	0.0003**	0.0003***	0.0003***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Observations	325	325	325	325	325	325
Within R^2	0.7321	0.8744	0.8743	0.7427	0.8868	0.8867

Driscoll–Kraay standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01