

Monitoring and fiscal adjustment: The Norwegian list of shame*

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Abstract

Norwegian local governments that violate the balanced budget regulation (BBR) imposed by the central government is placed in a register of local governments with weak fiscal performance. The consequence of being in the register is that the budget and resolutions to raise new loans must be approved by the county governor, the central government's representative in the county. Local governments in the register are subject to stronger central government control and must tighten their budgetary policy in order to be removed from the register. The findings suggest that local governments in the register strengthen their budgetary balance. This is due to both decreased spending and increased property taxes.

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1 Introduction

To which extent federations should decentralize fiscal decision making has been a widely debated topic among politicians as well as economists. There exist several interesting economic arguments pointing in the direction that fiscal decentralization should be expected to deliver favorable outcomes. Tiebout (1956) argued that local politicians have strong incentives to provide good services in order to attract residents. Furthermore, individuals may move to districts that suit their preferences (Oates, 1972) and local politicians have more information regarding the needs and preferences of the inhabitants in their area than the central politicians. Thus, moving the responsibility for fiscal decisions to the local level should provide a boost in efficiency.

There is, however, a different side to the story. When local politicians focus exclusively on pleasing the voters in their own constituencies, problems due to externalities may arise. Furthermore, if local governments expect to be bailed out in the case of a fiscal emergency, this will pervert the local politicians' incentives. A typical prediction is that they will collect too low taxes and have too high spending in order to please the voters in their electorates. Following the seminal work of Kornai (1979) this is referred to as the soft budget-constraint problem. The costs associated with externalities provide an important explanation as to why many central governments in recent years have imposed stricter surveillance of the fiscal policy in their respective local and regional governments. The book edited by Rodden et al. (2003) contains several examples of increasing central government monitoring of local governments' fiscal dispositions in a wide array of federations. Examples are found in the full range from highly developed countries like the US (Inman, 2003) and Canada (Bird and Tazzonyi, 2003), via economies in transition like Hungary (Wetzel and Papp, 2003) to less developed countries as Argentina (Webb, 2003) and India (McCarten, 2003).

However, even though the central government wants to monitor the local governments and impose balanced budget regulations (BBRs) in order to battle deficits, it may not be able to effectively impose such regulations. This is illustrated in the study by Goodspeed

(2002). He argues that a vote-maximizing central government will have incentives to bail out local governments even though it would be socially optimal to impose a hard budget constraint. The rather pessimistic view suggested by Goodspeed is not, however, undisputed in the literature. On the contrary, several studies suggest that it is possible for the central government to impose fiscal constraints on the regional governments.

Drazen and Eslava (2010) suggest that politicians who are eager to gain support from voters do not necessarily want to increase spending. A central point is that rational voters should be able to anticipate such incentives to manipulate the economy. Furthermore, it is not given that increasing expenditures is an effective tool for gaining votes, especially if the voters are fiscally conservative. Drazen and Eslava base their arguments on several empirical studies.

Peltzman (1992) found that US voters are less likely to support local officials who increase overall expenditures. Brender (2003) concludes that when Israeli voters are able to monitor the fiscal choices of local officials effectively, incurring in large deficits prior to elections will actually harm the incumbent's chance of being re-elected. Brender and Drazen (2008) studied a large panel of countries and found that deficits in the election year or over the term reduce the incumbents chance of re-election in developed countries and established democracies. At a very least, these findings indicate that voters do not necessarily punish incumbents for running a tight fiscal policy. Hence, it is not given that it is impossible for a central government to impose hard budget constraints effectively.

The present paper contributes to the literature by studying the Norwegian BBR and the consequence of violating it, the Robek register. The Robek register is a list over local governments that violate the BBR, most often by having persistent deficits. Thus they have to tighten their budgetary policy in order to be removed from the list. This paper is related to the empirical literature on fiscal adjustment. Some key contributions, studying fiscal performance in US states are Holtz-Eakin (1988), Alt and Lowry (1994), Poterba (1994) and Bohn and Inman (1996). In general these studies conclude that restrictions may be a helpful

tool in order to secure fiscal discipline. However, the efficiency of the restrictions vary with their design and institutional surroundings.

I will investigate if Norwegian local governments that are included in the Robek register take the necessary actions in order to strengthen their budgetary balance. The findings in the paper clearly suggest that the Robek register has the desired effect of stronger operational budget balance in the local governments. I also go one step further to see if this is due to reduced operational expenditures or increased property tax. Since the Robek register involves restrictions on borrowing, I will also study how the net debt and investments in the local governments are affected by inclusion in the register.

Among the tests of robustness I also check whether the central government uses discretionary funding to bail out local governments in Robek. If it does, the de jure hard budget constraint is de facto a soft constraint and the register at least partly loses its function. The results indicate that such bailouts are not driving the results, but rather that the budget balance is strengthened through both reductions in operational expenditures and increased property tax. Investments and net debt seems to be less affected by inclusion in the Robek register. The main conclusion is that the register seems to serve its purpose of strengthening the budget balance in the local governments effectively.

The remainder of the paper is organized as follows: Section 2 presents the Robek register and its institutional surroundings before the outcome variables are presented in Section 3. The empirical strategy is discussed in Section 4. The main results are presented in Section 5, while Section 6 discusses the robustness of these results. Finally, some concluding remarks are offered in Section 7.

2 The Robek register and institutional background

As in other Scandinavian countries, Norwegian local governments are important providers of welfare services like child care, primary and lower secondary education, primary health

care and care for the elderly. In the public debate, there is an often expressed concern that the local governments receive less funding than they need in order to provide the services demanded by their inhabitants. Given this (often quite heated) debate one may expect that the central government will find it difficult to impose a hard budget constraint on the local governments. This is because they have reasons to fear that inhabitants who are unsatisfied with locally provided public goods may blame the incumbent central government rather than the local politicians. However, it is a prioritized field for the central government to promote cost efficiency in the local governments in order to avoid widespread situations of fiscal distress. The Robek register is a specific tool intended for this purpose. This section provides a short description of the institutional setting in Norwegian local governments in general and the Robek register in particular.

The main revenue sources for the local governments are taxes, grants from the central government and user charges. Whereas the local governments have a large degree of discretion on the expenditure side, the revenues are heavily regulated under central standards. The opportunity to influence current revenues is in practice limited to property tax and user charges. The user charges are limited to cover costs and will play no role in the analysis. In fact it is not unusual to simply treat the whole revenue side as exogenous in studies of Norwegian local governments. I will do this most of the time, but I will also investigate whether inclusion in the Robek register has an effect on the property taxation in the local governments.

The political system at the local government level is a representative democracy where the members of the local council are elected every fourth year. The national parties are important players, and the national struggle between the socialist and non-socialist camps is mirrored at the local level. Compared to national politics, a main difference is that the majority coalition does not form a cabinet. The typical organization is an alderman model with an executive board with proportional representation from all major parties. The executive board is led by the mayor, and the members of the executive board, including the mayor and the deputy

mayor, are elected among the members of the local council.

Prior to each fiscal year, the local council makes decisions regarding current spending, revenue, investment activity and borrowing. The executive board and the chief administrative officer (*rådmannen*) are central players in the early stages of the budgetary process, and the executive board presents a budget proposal for the local council. The groupings in the local council are free to put forward own suggestions, either small or large changes to the proposal from the executive board, or totally different budget proposals. Finally the local council determines the budget either by voting over alternative budget proposals or issue by issue. The final vote takes place shortly before new year, around medio December.

Many of the local governments have a history of fiscal distress. Fiscal distress is broadly defined as actual fiscal performance in relation to the BBR. The main requirement in the Norwegian BBR is operational budget balance. In the budget (or ex ante), current revenues must be sufficient to cover current expenditures (wages and materials) and debt servicing costs (net interest payment and net installment on debt). The Register for State Review and Approval of Financial Obligations (*Robek*) is meant as a disciplining tool in order to secure that local governments do not have persistent deficits. The register lists local governments that have violated the BBR by passing a budget with a net operating deficit or have been unable to cover an actual deficit within two years.¹ The far most common reason for being in the register is that it has taken too long to cover a deficit.

The consequence of being in the register is that the budget and resolutions to raise new loans must be approved by the county governor, the central government's representative in the county. Local governments in the register are subject to stronger central government control, and must tighten their budgetary policy in order to be removed from the register. Even though the central government does not impose very strict sanctions on the local governments in the register, local politicians are certainly eager to exit the register. In some sense one could say that the Robek register is a "list of shame". Whereas entries to the register may

¹An actual deficit is covered when future surpluses are at least as large as the deficit.

be perceived as a signal to the voters of low abilities, exiting the register may act as a signal that the local politicians have high abilities and are able to prioritize.

Entries and exits usually occur at two occasions during the year. The first occasion is in the winter/spring. During January/February the county governors perform a control of the local governments' budgets and economic plans for the coming year. Local governments that pass a budget with a net operating deficit, will enter the register. If a local government is already in the Robek register, a thorough control is performed in order to ensure that the budget is in accordance with the requirements for local governments in the register. If it is not, a new budget must be adopted. The second occasion is during summer/fall. The local governments must have adopted their accounts from last year by June/July. Based on these accounts, the county governor decides who enters the register and who exits it. Entries (exits) in the period January-May is most often due to failing (succeeding) in adopting a balanced budget for the present year. Entries (exits) in the period June-December is most often due to failing (succeeding) in covering old deficits, based on the accounts from the previous year.

There are different ways to operationalize a variable based on the Robek register. As a benchmark approach I have chosen to formulate a dummy variable which equals 1 in year t if the local government was in the register January 1 in the same year. The motivation behind this formulation is that it will provide a very intuitive interpretation of the effect from inclusion in the Robek register. This is because year t 's budget is decided just before new year and local governments listed in the register will have to take this into consideration when deciding their budget. Hence, I simply ask: Do local governments that are included in the Robek register when deciding next year's budget act different than those that are not in the register?

Local governments who initially fail to have their budget approved in January/February, may enter the register during the first half of the year, and then exit it later the same year. The reason is that they can be removed from the list as soon as they have made the necessary changes in order to balance the budget. These will not be captured by the suggested

specification. However, the main aim of the study is to investigate how local governments that are in the register when deciding their budget for the coming year respond in order to get out of the register. The local governments that enter and exit the register within the same year are of less interest. This is because they often simply need some external pressure to overcome internal differences and be able to adopt a balanced budget and do not necessarily have problems related to persistent deficits. Given the aim of the paper, the suggested specification should be suitable. Anyway, since the choice of specification is not obvious, I will return to this in Section 6. There I test the robustness of my results by reporting results from regressions with lagged values of the Robek status and an alternative specification of the Robek variable. Table 1 lists the number of municipalities included in the Robek register when entering each year of the sample and descriptive statistics for the Robek variable.²

Table 1: Local governments in the Robek register

Year	In Robek
2001	56
2002	80
2003	79
2004	107
2005	117
2006	88
2007	73
2008	42
2009	44
2010	48
Robek dummy	Mean (st.dev)
($N = 4288$)	0.17 (0.38)
Based on the 430 municipalities in 2010.	

Before the Robek register was introduced in 2001, all local governments were subject to the strict regime. Hence, the introduction of the register was a liberalization, where the local governments that are able to manage their finances in a satisfying way become subjects to

²The capital city Oslo which is both a municipality and a county is omitted from the analysis.

less control. From Table 1 we observe an increase in the number of local governments in the register in the first half of the sample period, reaching a high in 2005. In the second half of the period the trend is declining, and the lowest number of municipalities in the register was in 2008. After 2008 we observe a small increase, but the sample is too short for me to say if this increase signals a new trend or is just due to random fluctuations.

3 The outcome variables

The point of the register is to ensure that local governments with weak fiscal performance take the necessary actions in order to reduce costs and/or increase revenues and thus strengthen their budget balance. Hence, the outcome variable of most interest will be the net operating surplus. Descriptive statistics and a raw comparison of means for the net operating surplus (measured as percentage of revenues) are presented in Table 2. The raw comparison of means between local governments that are included in the register and those that are not, shows that local governments in Robek have a weaker budget balance. The raw comparison is not, however, very informative in terms of causation. It is negative budget balance that is the most frequent reason for ending up in the register in the first place, drawing towards a negative correlation between budget balance and inclusion in Robek. However, local governments that are included in the register must strengthen their balance in order to be removed from the register. Thus, I expect that a more thorough econometric investigation will identify a positive treatment effect from inclusion in the Robek register on the net operating surplus.

Table 2: Descriptive statistics, net operating surplus

	Full sample avg. (st.dev)	Avg. in Robek (st.dev)	Avg. not in Robek (st.dev)	Difference in averages
Net operating surplus in % of revenues	2.22 (5.18)	1.84 (3.75)	2.30 (5.42)	-0.46**
No. of observations	4253	726	3527	4253

Even though the net operating surplus will be most emphasized in this paper, it will also be of great interest to study how inclusion in the register affects other fiscal indicators. Thus I will also place a series of important fiscal indicators on the left hand side and test whether

inclusion in the Robek register has the expected effect on these. The fiscal indicators are presented in Table 3.

Table 3: Descriptive statistics, other fiscal indicators

	Full sample avg. (st.dev)	Avg. in Robek (st.dev)	Avg. not in Robek (st.dev)	Difference in averages
Indicators included in the net operating surplus				
Gross total exp. per capita in 1000 NOK	56.19 (19.19)	50.46 (12.71)	57.37 (20.07)	-6.91***
No. of observations	4253	726	3527	4253
Property tax per capita in 1000 NOK	1.91 (4.66)	0.99 (1.42)	2.10 (5.05)	-1.11***
No. of observations	5243	726	3527	4253
Debt and investments				
Net debt per capita in 1000 NOK	34.69 (18.18)	34.40 (15.44)	34.75 (18.71)	-0.35
No. of observations	3383	585	2798	3383
Gross investment per capita in 1000 NOK	7.47 (6.78)	5.59 (4.33)	7.85 (7.13)	-2.26***
No. of observations	4253	726	3527	4253

*** p<0.01, ** p<0.05, * p<0.1

I include two indicators that are underlying in the analysis of the net operating surplus. These are the gross total expenditure and property tax, both measured per capita. These will indicate whether local governments choose to reduce their expenditures or increase their revenues when trying to improve their budget balance. Consistent with my hypotheses, the raw comparison does suggest that spending is lower in the local governments in Robek. Still, of course, a conclusion cannot be made until after a proper econometric analysis.

Property taxes have traditionally been a negligible revenue source for Norwegian local governments. In most of the sample period (until 2007) it was restricted to urban areas and certain facilities, notably hydroelectric plants. The power plants can be taxed without taxing other properties, and local governments with such plants are likely to tax these independently of the Robek register. This is because levying tax on such plants is basically tax exporting, since the local voters do not have to pay the tax themselves but gain the benefits from the high revenues. Unfortunately, I am only able to separate residential property tax from other property taxes in the short period from 2007-2010. Thus I use the non-separated measure of property tax in this paper even though it is likely to underestimate the true effect of the Robek register. We observe that local governments in Robek collect significantly

less property tax than others. However, this difference probably just illustrates that local governments with high revenues from property tax are less likely to end up in the register in the first place. I expect that local governments that are listed in the Robek register will increase property taxes in order to get out of the register. This yet again clarifies the need for a formal econometric investigation in order to identify true causal relationships.

I then move on to two indicators that are not directly related to the net operating balance. The first indicator is the net debt per capita.³ Local governments in Robek have to apply to the county governor in order to be allowed new borrowing. This restriction gives that we may expect that local governments in the register over time will borrow less than those that are not in the register. However, we observe that the raw data suggests that there is no difference between local governments that are included in the register compared to those that are not. Still, my hypothesis is that a more thorough econometric analysis will reveal a negative effect on debt from inclusion in the Robek register.

Intuitively, the restrictions with regards to borrowing lead us to expect that local governments in the Robek register will have to cut down on investments. However, if the local governments in the Robek register choose to reduce investments, to a larger extent than other expenditures, this may have adverse consequences. In fact, reducing investments in times of fiscal stringency is often considered to be a myopic policy. This is because postponement of necessary investments in practice involves moving expenditures ahead in time. It has become a popular claim that public investment is an easy target in periods of fiscal consolidation. Roubini and Sachs (1989, p. 108-109) argue that “in periods of restrictive fiscal policies and fiscal consolidation capital expenditures are the first to be reduced (often drastically) given that they are the least rigid component of expenditures”. Based on panel data for a sample of 22 OECD countries, De Haan et al. (1996) and Sturm (1998, ch 3) find evidence in favor of the hypothesis that public investment is reduced as share of public spending during periods of fiscal stringency.

³Installment and interest payments are parts of the operating expenditures. These of course depend on the level of debt as is studied here.

Hence, if we observe a large reduction in investments, relative to other expenditures, this indicates that the Robek register does not work as intended. If the effect is that it causes an investment backlog in the local governments, this may actually give an increase in long-run expenditures. Note that if we observe a large reduction in investments, this may also indicate that the county governors are too reluctant to allow borrowing and is not necessarily due too myopic local politicians. However, the adverse consequences will be the same whether the cuts are due to myopic local politicians or rigid county governors. Consistent with the hypothesis, we observe that local governments in Robek on average have lower investments than other local governments. The proceeding section outlines the empirical strategy used to test the hypotheses formally.

4 Empirical specification

The starting point of the analysis is variations over (1), which is a regression equation including time and municipality fixed effects (MFE), captured by δ_t and α_i respectively.

$$y_{it} = \beta Robek_{it} + \gamma Revenue_{it} + \theta ENOP_{it} + \mu Soc_{it} + \mathbf{Dem}_{it}\boldsymbol{\omega} + \alpha_i + \delta_t + \epsilon_{it} \quad (1)$$

y_{it} is the outcome variable and $Robek_{it}$ is a dummy that equals 1 if local government i was included in the Robek register when entering year t . Hence, β is the coefficient that is of the most interest in this analysis. I have also tried to include a variable capturing how many years the local governments have been listed, but this does not provide any additional knowledge. The remainder of the variables aim to capture effects from fiscal capacity, political strength and composition and demographic characteristics and primarily serve as control variables in this paper.⁴ All regressions contain the Robek variable and time dummies, while I also report results from estimations without the control variables and MFE. Details are served underway.

⁴Descriptive statistics for the control variables are provided in Appendix A.

The indicator of fiscal capacity is local government revenue. I use an indicator of real per capita revenue published by the Ministry of Local Government, which is widely accepted as the most reliable indicator of fiscal capacity. The starting point is the sum of block grants and local tax revenues. Most taxes are of the revenue sharing type, and the tax revenues comprise income and wealth tax from individuals, as well as the property tax. Since the block grant system provides compensation for high spending needs, the revenues must be “deflated” in order to capture the real differences across local governments. An index of spending needs from the spending needs equalization system is used as deflator. It captures unfavorable cost conditions related to population size, settlement pattern, the age composition of the population, and social factors. Since most taxes are of the revenue sharing type, the revenue measure can be interpreted as an indicator of fiscal capacity. Differences in fiscal capacity reflect differences in tax bases and the design of the grant system. Note that since the property tax is included in this revenue measure, I omit the revenue variable when estimating the property tax. I have also tried to estimate the property tax while including the total revenues and this does not affect the results.

Several studies of Norwegian local governments have emphasized the impact of political strength. Political strength is shown to reduce administrative spending (Kalseth and Rattsø, 1998), to increase efficiency (Borge et al., 2008 among others), to reduce the budget deficit (Borge, 2005) and improve maintenance of local public buildings (Borge and Hopland, 2011). A traditional Herfindahl-Hirschman index has been the most widely used indicator of political strength. It is a measure of the party fragmentation in the local council, and is calculated as

$$HHI = \sum_{p=1}^P SH_p^2 \quad (2)$$

where SH_p is the share of representatives from party p . The index takes the maximum value of 1 when a single party holds all the seats in the local council, while the minimum value of $1/P$ is attained when the seats are equally divided among the P parties. The index can

be interpreted as the probability that two randomly drawn members of the council belong to the same party. Alternatively, we can say that it captures the number of parties in the local council and the distribution of seats among them. The value of the index is reduced (fragmentation increases) when the number of parties increases and when the number of seats are more equally divided among a given number of parties.

In this paper I use the inverse of the Herfindahl-Hirschman index as indicator of political strength. This indicator can be interpreted as the effective number of parties (*ENOP*). In my sample, the effective number of parties varies from close to 1.6 to nearly 7.4, with an average just above 4.2 (both across local governments and over time). In Norway, the socialist camp is dominated by the Labor party, while the non-socialist camp is more fragmented. As a consequence, there is a negative correlation between party fragmentation and the share of socialists in the local council.⁵ Since I cannot rule out that socialist influence has an impact on economic outcomes, I will also control for the share of socialists (*Soc*) to avoid obtaining a biased estimate of the effective number of parties. This is useful, even though the political fragmentation also just serves as a control in this study. Socialist parties are defined as the social democrats (The Labor Party) and all parties to its left.

The demographic characteristics included are the population size and variables capturing age composition. I include the share of the population below school age (0-5 years), the share of the population in primary and lower secondary schools (6-15 years) and the share of elderly citizens (80 years and above). Kindergartens, primary and lower secondary schools and care for the elderly are the major tasks for a local government, and these demographic variables may capture the relative strength of different interest groups.

The main worry for this study is that there are certainly systematical differences between the local governments that frequently occur in the Robek register and those that do not. This will especially be a problem when estimating equation (1) while omitting the MFE (i.e. plain OLS). The problem will to some extent be solved by applying MFE, since the inference

⁵The correlation between the effective number of parties and the share of socialists (both across local governments and over time) is -0.37.

then is solely based on local governments that have both entered and exited Robek during the period. However, there is no guarantee that MFE will solve the problem completely. I will thus utilize the structure of the balanced budget rule to restrict the sample to local governments that are fairly similar in terms of fiscal performance. Firstly I create a variable that captures persistent deficits. Let r_{it} denote local government i 's net result at time t . The variable then takes the following form

$$x_{it} = \begin{cases} a_{it} = r_{t-2} + r_{t-1} + r_t \text{ if } r_{t-2} < 0, r_{t-2} + r_{t-1} < 0 \text{ and } \sum_{t-k}^{t-3} r_{it} \geq 0, k > 3 \\ \text{missing otherwise} \end{cases} \quad (3)$$

(3) identifies x_{it} as a variable that comes into play in the first year local government i is in risk of violating the BBR, i.e. when a deficit in period $t - 2$ has not been covered in year $t - 1$. (4) follows up and defines x_i in the years to follow. When being non-missing, the variable is simply equal to the accumulated deficit measured in percentage of revenues (a_{it}). Once the deficit is covered in a period $t + \tau$, $x_{it+\tau+1}$ will per definition be missing.

$$x_{it+\tau} = \begin{cases} a_{it+\tau} = a_{it+\tau-1} + r_{it+\tau} \text{ if } a_{it+\tau-1} < 0 \\ \text{missing otherwise} \end{cases} \quad (4)$$

In words, when x_{it} goes from being missing to non-missing this means that local government i did not have a sufficiently large surplus last year ($t - 1$) to cover the deficit from two years ago ($t - 2$). In order to avoid a conflict with the BBR, the local government must cover the accumulated deficit in the present year (t). Hence, a negative x_{it} indicates that the BBR has been violated, while a non-negative x_{it} indicates that the deficit was covered during year t . The variable keeps running until the accumulated deficit is covered. Once the deficit is covered, i.e. x_{it} is non-negative, x_{it+1} will be missing. Further I define the median and standard deviation of x_{it} (both across local governments and over time) as x_m and σ_x respectively. Finally, the local governments may use disposable funds, denoted z_{it} , in order to

cover their deficits. The variables x_{it} and z_{it} give me the opportunity to perform an analysis based on local governments that are similar in terms of fiscal performance but have different treatment statuses. In practice I do this by defining

$$\lambda_{it} = \begin{cases} 1 & \text{if } x_{it} \neq \text{missing and } z_{it} \leq 0 \\ 0 & \text{otherwise} \end{cases} \quad (5)$$

$$\kappa_{it} = \begin{cases} 1 & \text{if } x_m - \sigma_x < x_{it} < x_m + \sigma_x \text{ and } z_{it} \leq 0 \\ 0 & \text{otherwise} \end{cases} \quad (6)$$

The regression presented in (1) will then be repeated when imposing the restrictions that (5) and (6) equal 1 are imposed one by one. Note that the Robek regulations are not quite as straightforward as illustrated above (see Section 2). However, the aim of this procedure is not to predict which local governments that enter Robek, but to ensure that I do not base the inference on comparison of very different local governments. The suggested formulation should be suitable for this purpose. The λ_{it} is the least strict of the cut-offs. All local governments with accumulated deficits over at least two years and no disposable funds are included when using this cut-off. However, it is not impossible that the local governments in properly dire straits differ from those with just slightly poor performance. Thus κ_{it} removes all local governments that are above or below one standard deviation from the median x_{it} in year t . The different cut-offs should then both ensure that I compare treated and untreated observations that are otherwise similar and simultaneously check if the results are sensitive to different sample cut-offs.

5 Results

Table 4 presents results from estimations of (1) with the net operating surplus as percentage of revenues on the left hand side. In Columns (A)-(E) I estimate the equation using the

full sample, while the different cut-offs are introduced in Columns (F)-(I). In Column A I estimate a simple OLS regression, including only the Robek dummy on the left hand side. This comes out as significant with a contra-intuitive negative sign. Plain OLS without control variables is similar to the raw comparison of means in Section 3 and cannot be given a causal interpretation. In the remaining columns I control for unobservable characteristics by including MFE and/or the sample cut-offs. In these cases we have that all the coefficients for the Robek dummy come out with the expected signs and are highly significant. The effects seem also to be of economic significance, indicating that the register works as intended. The OLS estimates are consistently lower than the MFE estimates. However the estimates become more similar when using the strictest cut-off suggesting that the cut-offs serve their purpose, i.e., they reduce problems related to unobservable characteristics. The quantitative examples below are all based on the MFE estimates since I expect these to present the cleanest treatment effect.

When considering the full sample, inclusion in the Robek when deciding the budget is associated with a strengthening of the net operating surplus as percentage of the revenues by close to 2 percent. This is a very strong predicted effect given that the average net operating surplus in the full sample is just over 2 percent of the revenues. Further, we observe that the effect is amazingly unaffected by exclusion of the control variables.

The effect is also robust to the different cut-offs intended to secure similar treatment and control groups, even though the size of the coefficient varies somewhat depending on the cut-off. When using the least restrictive cut-off (λ_{it}) we observe an effect on the net operating surplus as percentage of revenues of 3 percent. This is quite a bit above the result for the full sample. The effect is smaller when using the more restrictive cut-off (κ_{it}). However, even though the effect is reduced compared to the less restrictive cut-offs, it is still only slightly lower than when using the full sample.

Hence, there seems to be a clear positive effect on the net operating surplus from inclusion in the Robek register. I then turn the attention to the other fiscal indicators. To save space,

Table 4: Estimations of net operating surplus (in % of revenues).

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
	Full sample	Full sample	Full sample	Full sample	Full sample	$\lambda_{it} = 1$	$\lambda_{it} = 1$	$\kappa_{it} = 1$	$\kappa_{it} = 1$
Robek	-0.633*** (0.217)	1.846*** (0.236)	1.829*** (0.233)	1.830*** (0.231)	1.840*** (0.237)	1.381*** (0.427)	3.046*** (0.765)	0.875** (0.357)	1.311** (0.526)
Effective number of parties				0.188 (0.153)	0.188 (0.151)	-0.0256 (0.190)	0.0599 (0.500)	-0.0505 (0.190)	-0.375 (0.547)
Share of socialists in the local council				1.565 (1.489)	1.681 (1.496)	1.239 (1.012)	8.030 (5.639)	-0.694 (1.043)	-0.404 (6.230)
Local government revenue			0.0648*** (0.0165)	0.0628*** (0.0167)	0.0626*** (0.0168)	0.0387** (0.0186)	-0.0118 (0.0472)	0.0567*** (0.0172)	0.0489 (0.0663)
Population					-3.61e-05 (5.11e-05)	1.68e-05*** (5.01e-06)	0.000113 (0.000353)	1.54e-05*** (5.37e-06)	0.000188 (0.000663)
Percentage of pop. 0-5 years					0.139 (0.206)	0.0671 (0.231)	-1.079 (0.927)	0.405* (0.219)	-2.680*** (0.639)
Percentage of pop. 6-15 years					-0.182 (0.143)	0.269* (0.162)	0.0714 (0.719)	0.109 (0.170)	-1.868*** (0.601)
Percentage of pop 80 years of more					0.0308 (0.261)	0.182 (0.153)	-0.690 (1.496)	0.291** (0.130)	-0.537 (0.984)
Method	OLS	MFE	MFE	MFE	MFE	OLS	MFE	OLS	MFE
Observations	4,253	4,253	4,252	4,212	4,211	289	289	230	230
R-squared	0.084	0.122	0.136	0.135	0.136	0.258	0.348	0.278	0.424
Number of knr1		429	429	427	427		116		107

Robust standard errors (clustered on the municipality level) in parentheses. A constant term (not reported) included.
*** p<0.01, ** p<0.05, * p<0.1

Table 5: Estimation of other fiscal variables. Municipality fixed effects.

	(A) Gross exp. per cap.	(B) Prop. tax per cap.	(C) Net debt per cap.	(D) Gross inv. per cap.
Full sample				
Robek	-0.694*** (0.214)	0.134* (0.0694)	-1.176* (0.699)	-1.001*** (0.277)
Observations	4,211	4,212	3,343	4,424
R-squared	0.899	0.186	0.343	0.064
Number of knr1	427	427	426	427
$\lambda_{it} = 1$				
Robek	-1.922*** (0.594)	0.301** (0.123)	-1.794 (2.072)	0.214 (0.732)
Observations	289	289	277	289
R-squared	0.905	0.449	0.259	0.166
Number of knr1	116	116	115	116
$\kappa_{it} = 1$				
Robek	-1.444*** (0.484)	0.176* (0.0968)	-0.495 (2.344)	0.899 (0.767)
Observations	230	230	222	230
R-squared	0.925	0.435	0.344	0.218
Number of knr1	107	107	107	107

Robust standard errors (clustered on the municipality level) in parantheses.

All control variables from Table 4, time dummies and
a constant term (not reported) included

*** p<0.01, ** p<0.05, * p<0.1

I only report results from estimations including the full set of controls and MFE. Columns (A)-(B) give results from estimations of total spending and property tax, while Columns (C)-(D) present results from estimations of net debt and investments. At the top of the Table, I utilize the full sample, while the different cut-offs are introduced in the lower rows.

When estimating the indicators that are underlying for the net operating surplus, the coefficients for the Robek dummy come out with their expected signs and are all significant, most of them highly. This indicates that the local governments use both reduction in expenditures and increased tax revenues in order to strengthen their operational budget balance. Inclusion in the Robek register is associated with a reduction in total expenditures by NOK 700 per capita. This is a fairly modest but still important effect given that the sample average is just above NOK 56,000. When introducing the cut-offs, we observe an effect roughly between NOK 1,500-1,900 depending on the cut-off.

When looking at the full sample we observe that inclusion in the Robek register is associated with an increase in property taxes by NOK 134 per capita. With a sample average of roughly NOK 1,900, this is an economically significant effect. When we keep in mind that

the average in the local governments in the Robek register is as low as NOK 990, the effect seems even stronger. Finally, we observe that the property tax also seems to be affected stronger when studying the restricted samples than when using the full sample. The effect varies from about NOK 170 to NOK 300, depending on the cut-off.

I then turn the attention to net debt and investments. Inclusion in the Robek register is associated with a reduction in net debt per capita of close to NOK 1,200 when studying the full sample. This is roughly 3 percent of the average in the full sample and must be considered as an economically significant effect. However, the effect is never significant when studying the smaller samples where the cut-offs ensure more similar treatment and control groups. Hence, it seems that the Robek register does actually not have an important effect on borrowing. The effect on gross investment per capita is also quite strong in terms of economic as well as statistical significance when studying the full sample. A reduction of NOK 1,000 must be considered a large effect given a full sample average of close to NOK 7,400. However, as with borrowing, the effect vanishes when I introduce the sample cut-offs.

6 Tests of robustness

Table 6: Robustness tests. Municipality fixed effects

	(A)	(B)	(C)	(D)	(E)	(F)
	Discretionary funds	Net op. surplus (% of revenues)	Gross exp. per cap.	Prop. tax per cap.	Net debt per cap.	Gross inv. per cap.
$\lambda_{it} = 1$						
Test of bailout policy						
Robek (benchmark)	-328.6 (505.8)					
Observations	277					
Number of knr1	115					
R-squared	0.274					
Lagged Robek dummy						
Robek (lagged)		2.739*** (0.85)	-0.994* (0.531)	0.180** (0.0709)	-2.333* (1.385)	0.647 (0.484)
Observations		289	289	290	277	289
R-squared		0.335	0.898	0.404	0.263	0.17
Number of knr1		116	116	116	115	116
Alternative Robek dummy						
Robek (alternative)		2.092*** (0.676)	-1.956** (0.907)	0.126 (0.141)	-1.479 (2.131)	-1.438 (0.955)
Observations		289	289	290	277	289
R-squared		0.298	0.903	0.397	0.256	0.184
Number of knr1		116	116	116	115	116

Robust standard errors (clustered on the municipality level) in parantheses. All control variables from Table 4, time dummies and a constant term (not reported) included

*** p<0.01, ** p<0.05, * p<0.1

Tables 4 and 5 suggest that the Robek register forces local governments to tighten their budgetary policy. Thus Robek seems to be working as it is supposed to do. It is also interesting that the local governments do not seem to sacrifice investments in order to be able to keep other expenditures high and property taxes low. This indicates that local politicians do not have a myopic response to the Robek register, but rather perform a fiscal consolidation that can have positive effects also in the long run. However, I need also to investigate whether the central government provide extra funding (i.e. a bailout) for the local governments in the register. Even though most of the funding is exogenously given through a fixed formula, there is a considerable grant handed out on discretionary basis (*skjønnsmidler*). These are administered by the same office that is responsible for the surveillance of the Robek registered local governments, the county governor.

In the upper part of Table 6 I present results from regressions where I test if the county governors give more discretionary funds⁶ to local governments in Robek, and thus perform a

⁶Descriptive statistics for the discretionary funds are provided in Appendix A.

bailout policy. The results clearly indicate that this is not a problem for my analysis. The coefficients for the Robek register are far from being significant. If anything, the negative sign suggests that local governments in Robek actually receive less discretionary funds. Hence, it does not seem that the improvement of the budget balance is due to bailouts.

Further, as stated in Section 2 it is not obvious how one should define the Robek variable. The benchmark formulation was chosen because my primary interest is to study how inclusion in the Robek register when deciding the budget affects local government behavior. To test the robustness of the estimates in the previous section, I will now repeat the analysis, utilizing information about the register in alternative ways.

Firstly, it is possible that there will be some sluggishness in the adaptation. Thus, I in the middle part of Table 6 put one lag on the benchmark Robek dummy. We observe that the results do not change dramatically. However we now obtain a significantly negative coefficient when estimating the debt per capita, even though the coefficient hardly change from the benchmark specification. This indicates that inclusion in the Robek register also leads to lower debt in local governments, but that it will take some time for this effect to take place. The coefficients for the net operating surplus as percentage of revenues hardly change at all. The coefficients for gross total expenditure per capita and property tax per capita are somewhat lower when using the lagged Robek dummy, but both are still significant.

Finally, in the lower parts of Table 6 I use an alternative specification of the Robek dummy.⁷ In the previous section the dummy was equal to 1 only if the local government were included in the register when entering the year. I use a more general dummy formulation where the dummy equals 1 if the local government has been listed in the Robek at any time during the year. We observe that the results do not differ substantially from those obtained when using the benchmark formulation. The most important exception is that the Robek variable does not come out as significant when estimating the property tax. The coefficient for the net operating surplus as percentage of revenues is a bit lower than in the benchmark,

⁷Descriptive statistics for the alternative Robek dummy is given in Appendix A.

but it is still highly significant. The coefficients for gross expenditure per capita and are very similar to those in the benchmark formulation.

7 Conclusions

In this paper I have studied how Norwegian local governments respond to inclusion in the Robek register, which is the list of local governments that violate the BBR imposed by the central government. The consequence of being in the register is that the budget and resolutions to raise new loans must be approved by the county governor, the central government's representative in the county. Local governments in the register are subject to stronger central government control, and must tighten their budgetary policy in order to be removed from the register. The findings suggest that local governments that are included in the register lower their total expenditures and increase the property tax. Thus they strengthen their budgetary balance which is the essence of any balanced budget regulation. It is also interesting to note that the findings actually suggest that inclusion in Robek has less effect on investments than on other expenditures. This indicates that local politicians do not simply postpone expenses, but are actually able to perform proper reductions in operational spending. The inevitable conclusion is then that the Robek register seems to serve its purpose effectively.

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A Descriptive statistics

Variable	Mean (st.dev)
Alternative Robek dummy ($N = 4300$)	0.22 (0.42)
Discretionary funds (in NOK 1,000 per cap) ($N = 3429$)	4236 (8455)
Effective number of parties ($N = 4669$)	4.22 (1.10)
Share of socialists in the local council ($N = 4703$)	0.37 (0.15)
Local government revenue ($N = 4710$)	107 (23)
Population ($N = 4704$)	10815 (31800)
Share of children (%), 0-5 years ($N = 4702$)	7.09 (1.17)
Share of youths (%), 6-15 years ($N = 4704$)	13.61 (1.42)
Share of elderly (%), 80 years and more ($N = 4704$)	5.48 (1.59)