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Central government control and fiscal adjustment: Norwegian evidence

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Central government control and fiscal adjustment: Norwegian evidence[*]

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Abstract

Norwegian local governments that violate the balanced budget rule (BBR) are placed in a register. 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 improve their operating surplus, mainly due to cost reductions.

1 Introduction

To which extent federations should decentralize fiscal decision making has been widely debated among politicians as well as economists over the last several decades. There are several arguments in favor of decentralized solutions. Tiebout (1956) argued that local governments will have strong incentives to provide efficient public goods, in order to attract tax paying residents. Moreover, decentralization offers the possibility to match local policies to local preferences (Oates, 1972). Thus, moving the responsibility for fiscal decisions to the local level should boost efficiency.

There is, however, a different side to the story. When local politicians focus exclusively on pleasing the voters in their own constituencies and expect to be bailed out in the case of a fiscal emergency, we may get inefficient outcomes. 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. In a recent study of Swedish local governments, Pettersson-Lidbom (2010) studies soft budgets based on a dynamic commitment problem. His findings suggest that the soft budget effect is clearly significant in economical as well as statistical terms. The predicted effect by going from a hard to a soft budget constraint is an increase in debt by more than 20%. These findings serve as an example that the costs associated with externality problems can be severe.

Such costs provide a likely explanation as to why many countries 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), it may not be able to effectively do so. This is illustrated in the study by Goodspeed (2002). He considers a Stackelberg game where the local governments' spending on public consumption is financed by local taxes, borrowing and grants from the central government. The local governments act as the Stackelberg leaders and decide simultaneously public spending, how much to collect in taxes and how much to borrow. The central government fills the role of the Stackelberg follower, and has to decide how to respond to borrowing in the local governments. If the central government increases grants to a local government that borrows (i.e. creates a soft budget constraint), this lowers the opportunity cost of borrowing and leads to excessive borrowing. The outcome is that a vote-maximizing central government has incentives to bail out local governments that borrow too much, even though it knows that it will be socially optimal to impose a hard budget constraint.

The rather pessimistic view suggested by Goodspeed is not, however, undisputed in the literature. In fact, several studies suggest that increasing expenditures is not an effective tool for incumbents seeking re-election. Drazen and Eslava (2010) study Colombian local governments and propose that the composition of spending may work just as well as the level of spending as a strategic tool. 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. Further, studies of US states in general conclude that restrictions may be a helpful tool in order to secure fiscal discipline, but that the efficiency of the restrictions vary with their design and institutional surroundings. Some key contributions are Holtz-Eakin (1988), Alt and Lowry (1994), Poterba (1994) and Bohn and Inman (1996).

Interestingly, Bohn and Inman found that the most important feature of a BBR is whether it is imposed ex ante or ex post.i.e. whether deficits are allowed to be carried to the next year or not. They conclude that ex ante rules, seem to be ineffective. The present paper contributes to the literature by studying fiscal adjustment in Norwegian local governments. The Norwegian local governments are subject to an ex ante BBR, allowing them to carry deficits to the next year. In order to battle persistent deficits, however, the central government has introduced a 'punishment' for the local governments who are unable to cover their deficits within two years after the initial deficit, the Register for State Review and Approval of Financial Obligations (*Robek*).

The Robek register is a list over local governments that violate the BBR, most often by having persistent deficits over a period of three years or more. 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 aim of the register is to stimulate fiscal discipline, and I will investigate how local governments in the register respond to being in the register. The findings in the paper clearly suggest that the register has the desired effect of stronger operational budget balance in the local governments. This indicates that the introduction of even a fairly mild punishment, in form of increased central government control and monitoring, may increase the efficiency of ex ante BBRs.

I also go one step further to see if this is due to reduced operational expenditures and increased property tax or whether the central government uses discretionary grants to bail out local governments in Robek. If local governments in Robek are bailed out, the de jure hard budget constraint is de facto a soft constraint and the register at least partly looses its function. The results indicate that such bailouts are not driving the results, but rather that the budget balance is strengthened through reductions in operational expenditures. Inclusion

in Robek does not seem to give a significant increase in property taxes.

The main conclusion is that the register seems to serve its purpose of strengthening the budget balance in the local governments in the intended way. My interpretation is that this is probably due to a combination of both 'formal' and 'informal' disciplining mechanisms. First, the formal mechanism is, as outlined above, that local governments in Robek are subject to closer central government monitoring and are forced to be more realistic in their budgeting. Second, an informal mechanism arises through that inclusion in Robek gives negative attention in local media. Thus it can be considered as a 'list of shame' for local politicians. The negative attention gives politicians seeking to win elections an extra incentive to exit the register and thus take the necessary steps in order to strengthen the budgetary balance.

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 from estimations of the net operating surplus are presented in Section 5, while Section 6 discusses what drives the effect on the net operating surplus. Section 7 presents some specifications tests with different variants of the Robek variable. Finally, some concluding remarks are offered in Section 8.

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. 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. Whereas the user charges are limited to cover costs and will

play no role in the analysis, I will return to property taxes below.

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.

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). Robek 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 formal 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

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

control, and must tighten their budgetary policy in order to be removed from the register. Before the Robek register was introduced in 2001, all local governments were under the same regime, i.e. all had to have budgets and resolutions to raise new loans approved by the county governor. 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 less control. The idea to abolish central government control of borrowing was first introduced by the commission that prepared the new Local Government Act of 1993. The majority of the committee argued that approval of local borrowing is an inefficient tool for avoiding crises. The minority argued, however, that the possibility to deny local governments borrowing was the only effective tool available in order to restrain local governments with fiscal imbalances.

In the end, the parliament agreed with the minority of the commission. The introduction of the Robek register several years later can be seen as a compromise, where the monitoring is primarily focused on local governments with fiscal imbalances. The idea was that it is better to focus the county governor's effort on the local governments in need of special attention, rather than spreading the effort on all local governments (see Borge and Rattsø (2002) for a more detailed discussion of the development of the regulatory framework).

Even though the central government does not impose very strict formal sanctions on the local governments in the register,[2] I expect that local politicians will be quite eager to get out of it. In addition to the formal mechanism reducing their fiscal autonomy as described above, one can also say that the Robek register in some sense is a 'list of shame'. I.e. there may also be an informal mechanism stimulating fiscal discipline in the local governments. Given this interpretation of the register, an additional mechanism may arise. Whereas entries to the register may 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.

The 'list of shame effect' was never mentioned as a target when establishing the register (officially at least). However, it is quite possible that the monitoring regime is actually more

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[2]In extreme cases, not observed during the last decades, the central government can take control over local finances.

effective in terms of promoting budget balance when it is only local governments in fiscal distress that are monitored. The reason is that the negative attention in local media associated with inclusion in the register is likely to give politicians extra motivation to strengthen the budget balance. In fact, the informal disciplining effect (i.e. publicity), may have unintentionally turned out to be a valuable supplement to the formal discipline (i.e. control of budgets and borrowing). If Robek is found to work as intended, it would be interesting to study whether it is the formal or informal mechanism that is most effective in terms of stimulating fiscal discipline. It is, however, beyond the scope of this paper to identify and study the isolated effect from the different mechanisms. Hence, I in this paper focus exclusively on the total effect from the register.

Entries and exits usually take place at two occasions during the year. The first occasion is in the winter/spring. During January/February the county governors control 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 more 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 which local governments that enter the register and which that exit it. Entries (exits) in the period January-May is most often due to failing (succeeding) in adopting a balanced budget. 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 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 provides a very intuitive interpretation of the effect from inclusion in

Robek. Since the budget is decided just before new year, the local governments will also have the same Robek status when deciding year t's budget as on January 1. Thus, this formulation allows me to study if local governments that are in Robek when deciding their budget respond to inclusion in the register.

One thing should be noted about this specification. Local governments that 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 register as soon as they have made the necessary changes to balance the budget.[3] 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 actual deficits. Given the aim of the paper, the suggested specification should be suitable. I will return briefly to this discussion in Section 7.

Table 1 lists the number of municipalities included in the Robek register when entering each year and descriptive statistics for the Robek variable.[4] 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.

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[3]The formal demand is that local governments that pass a budget with a net operating deficit will have to adopt a new one. Note that the central government prefers that the local governments are kept in Robek until they decide next year's budget to make sure that the budget process is thorough so that unrealistic budgets are not adopted. The 'default' is thus that local governments who fail to adopt a balanced budget are included from the spring in at least one year, until the spring of next year. However, the county governor can at his own discretion allow local governments to exit the register in the same year if he is convinced that the new budget is realistic.

[4]The capital city Oslo which is both a local government and a county is omitted from the analysis.

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 variable	Mean (st.dev)
($N = 4288$)	0.17 (0.38)

Based on the 430 municipalities
in 2010.

A more thorough look at the data reveals that close to half of the local governments were in Robek when entering at least one of the years, 203 out of 430. 35 of these re-entered the register after being able to leave it, 1 of them re-entered twice. Thus we observe a total of 239 cases where local governments are included in the register. Further, it is interesting to see how long local governments that are included in Robek need to get out. In roughly 32% of the cases, the local governments got out of Robek after one year, while two years were needed in about 22% of the cases. Using three or four years to exit Robek is also quite usual, and occur in roughly 12% and 9% of the cases respectively. Thus, in almost 75% percent of the cases the local governments in Robek spent four years or less to get out of the register. We have that 3 local governments got out after being in Robek eight years in a row, 1 after being included nine years in a row.

Of the 48 local governments that were in Robek at the end of the sample, 18 had been included for just one straight year, 8 for two straight years and 3 for three straight years. Thus close to ²/₃ of the 48 had been in the register in three straight years or less in Robek. At the other end of the scale, 1 had been included for eight straight years, 2 for nine straight years and 3 local governments were included in all ten years of the sample. 16 of the 48 had

exited the register at some time and re-entered later on.

Finally, we take a look at the 35 local governments that re-entered the register. A first thought is that these local governments use shortsighted solutions to exit the register, but are unable to make lasting fiscal adjustments. Those that re-entered did, however, not spend much more time in Robek than those that entered only once. The "re-enters" were included on average 4.2 years, while the "one-timers" were included on average 3.5 years. A t-test reveals that the difference is significant at the 10% level. The average for those that were included only once becomes slightly lower (3.4) if we exclude the 3 local governments that were included in the register in all 10 years. The difference is then significant also at the 5% level. It is worth noting that as many as 11 of the "re-enters" were included for a total of only two years while 5 were included for a total of three years. Thus, close to half of the "re-enters" spent either two one-year periods or one one-year period and one two-year period in Robek.

Interestingly, most of them also managed to stay out of Robek for quite some time after exiting the first time. 2 were included in only the first and last year of the sample (2001 and 2010), leaving eight years out of Robek in between. 5 were out of the register in seven years while 2 were out for six years. On the other side, 6 were out for just one year while 3 were out for two years. The average time between then exit and re-entry is close to four years. Thus it seems that the local governments that re-entered the register do not perform much worse than those that entered only once.

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 for strengthening their budget balance. Hence, the outcome variable of most interest will be the net operating surplus. Table 2 shows descriptive statistics for the variable in each year. With the exception

of 2008, the averages are positive in all years, mostly in the range of roughly 2-3.4% of revenues. Importantly, the figures indicate that there is quite a lot of variation both across local governments and over time. Hence, it is possible to conduct meaningful analysis based on this variable.

Table 2: Net operating surplus (in % of revenues)

Year	Mean	(St.dev)
2001 ($N = 425$)	1.96	(4.21)
2002 ($N = 423$)	0.57	(4.63)
2003 ($N = 424$)	1.24	(4.47)
2004 ($N = 425$)	1.95	(3.39)
2005 ($N = 426$)	3.20	(4.41)
2006 ($N = 428$)	5.36	(4.27)
2007 ($N = 428$)	1.98	(8.22)
2008 ($N = 429$)	-0.12	(5.64)
2009 ($N = 429$)	3.38	(4.80)
2010 ($N = 426$)	2.70	(3.90)

Based on the 430 municipalities
in 2010.

Table 3 gives a first exploration into the link between the net operating surplus and the Robek register. The table offers a raw comparison of means (both over time and across local governments) between local governments that are included in the register and those that are not. This shows that local governments in Robek have a weaker budget balance. The raw comparison is not, however, very informative in terms of identifying a causal effect from inclusion in Robek. A negative budget balance 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 in the register must strengthen their balance in order to be removed from the register. Thus, I expect a more thorough econometric investigation to identify a positive treatment effect from inclusion in the Robek register on the net operating surplus.

After studying the net operating surplus (Section 5) it will be interesting to go one step further and investigate whether the fiscal adjustment takes place in form of spending cuts or increased property tax revenues (Section 6). Descriptive statistics and a raw comparison of

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Table 3: 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	2.22	1.84	2.30	-0.46**
in % of revenues	(5.18)	(3.75)	(5.42)	
No. of observations	4253	726	3527	4253

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

means for gross total expenditures and property tax, both measured per capita, are presented in Table 4. Consistent with my hypotheses, the raw comparison does suggest that spending is lower in local governments in Robek. Still, of course, a conclusion cannot be made until after a proper econometric analysis.

Table 4: Descriptive statistics, other fiscal indicators. Fixed 2000 prices

	Full sample avg. (st.dev)	Avg. in Robek (st.dev)	Avg. not in Robek (st.dev)	Difference in averages
Gross total exp. per	45.22	41.50	45.97	-4.47***
capita in 1000 NOK	(13.55)	(8.64)	(14.22)	
No. of observations	3835	639	3196	
Propery tax per capita	1.50	0.79	1.64	-0.85***
in 1000 NOK	(3.58)	(1.10)	(3.88)	
No. of observations	3835	639	3196	4253

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

Property taxes have traditionally not been a very important source of revenues 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, since the Statistics Norway database only include the joint measure until this. Thus I use the non-separated measure of property tax in this paper. Since some local governments are likely to collect property taxes independently of their Robek status, OLS regressions are likely to underestimate the effect from inclusion in Robek when using the joint property tax measure. The problem should, however, to a large extent be solved by including local government fixed effects.

We observe from Table 4 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 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. The proceeding section outlines the empirical strategy used to test the hypotheses formally.

4 Empirical specification

As Borge (2005) and Tovmo (2007) I study fiscal performance in Norwegian local governments as a dynamic process. The starting point of the analysis is variations over (1), which is a dynamic panel model including time and local government fixed effects (LFE), captured by δ_t and α_i respectively.

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\begin{aligned}
y_{it} = \beta Robek_{it} + \iota Robek_{it-1} + \phi_1 y_{it-1} + \phi_2 y_{it-2} + \phi_3 y_{it-3} + \gamma_1 Revenue_{it} \\
+ \gamma_2 Revenue_{it-1} + \rho Inst_{it} + \theta ENOP_{it} + \mu Soc_{it} + \mathbf{Dem}_{it}\boldsymbol{\omega} + \alpha_i + \delta_t + \epsilon_{it}
\end{aligned}
\tag{1}
$$

y_{it} is the net operating surplus in percentage of revenues and $Robek_{it}$ is a dummy that equals 1 if local government i was included in Robek when entering year t. Hence, β is the coefficient that is of the most interest in this analysis. I also include the Robek status lagged by one year to investigate if the effect is direct or if there is some sluggishness in the effect. 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.[5] All reported regressions contain the Robek variable and time dummies. However, I also report results from regressions where some or all of the control variables are omitted, and with and without LFE.

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[5]Descriptive statistics for the control variables are provided in Appendix A.

The revenue measure includes the block grants from the central government and local tax on income and wealth, measured per capita. Property tax is excluded from the revenue measure since it is endogenously determined within the local governments and will act as a dependent variable in Section 6. I include the revenues both at time t and lagged by one year. I expect revenues to have a positive effect on the budget balance.

Local governments can experience fiscal stress without ever entering the Robek register, e.g. by having deficits they are just able to cover in time to avoid inclusion in Robek. Obviously, these have also tightened their budgetary policy. The true treatment effect from the register will be found only if I manage to identify the extra adjustment effect from inclusion in Robek and separate this from the general adjustment taken because of fiscal distress. Including lagged values of the net operating surplus should help to solve this problem since it captures fiscal distress in the past. Moreover, since the Robek status is dependent on earlier year's deficits it is essential to control for the budget balance in earlier years. Thus, I include three lags on the net operating surplus. The fixed effects estimates for the lagged dependent variable will likely suffer from Nickell bias (Nickell, 1981) due to the short time series utilized in this paper. Thus one should interpret the point estimates with some caution and rather let it serve simply as a control capturing fiscal distress in the recent past. As another measure of fiscal distress, I include the net debt payment (sum of net installment and interest payment) measured per capita ($Inst_{it}$).

Several studies of Norwegian local governments have emphasized the impact of political strength. In particular interest for the present paper is the study by Borge (2005), who found that political strength reduces deficits. In addition political strength is shown to reduce administrative spending (Kalseth and Rattsø, 1998), to increase efficiency (Borge et al., 2008 among others) and improve maintenance of local public buildings (Borge and Hopland, 2012). I use the effective number of parties ($ENOP$), which is the inverse of the

traditional Herfindahl-Hirschman index

$$ENOP = \left(\sum_{p=1}^{P} SH_p^2 \right)^{-1} \tag{2}$$

where SH_p is the share of representatives from party p. The effective number of parties varies from close to 1.6 to nearly 7.4, with an average of 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.[6] Since I cannot rule out that socialist influence has an impact on economic outcomes, I control for the share of socialists (Soc) to avoid that the coefficient for political fragmentation captures ideological preferences. 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 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.

5   Robek and the net operating surplus

This section presents the results from estimations of various specifications of (1), reported in Table 5. Columns (A) and (B) report OLS estimates. These differ heavily from the LFE estimates (Columns (C)-(E)), and are most likely negatively biased. This is probably because

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

OLS, even with the rich set of controls used in Column (B), is unable to control adequately for the fiscal distress that places some local governments in Robek in the first place. When estimating using LFE the coefficients for the Robek variable come out with the expected signs and are all highly significant. The coefficients are also fairly stable across the very different specifications. The effect is somewhat reduced as more control variables are introduced, but the coefficients remain highly significant in both statistic and economic terms. The effect is strongest in the LFE estimation without control variables, reported in Column (C). The predicted effect from inclusion in Robek is an increase by 1.8 in the net operating surplus as percentage of revenues.

In Column (D) I include the same set of control variables as in (B) and the effect from inclusion in Robek is reduced to just above 1% of revenues. Revenue and debt payments at time t, come out with the expected signs. I.e. local governments with high revenues and low debt payments have a significantly stronger budgetary balance than local governments with low revenues and high debt payments. The coefficients for lagged revenues, however, come out with negative signs. This indicates that local governments with high revenues in the previous year, tend to overestimate their revenues in the present year and thus spend more and get a weaker budget balance. Local governments with low revenues in the last year, on the other hand, compensates by strengthening their budget balance in the present year.

I have also estimated the model using net the operating surplus per capita (in fixed 2000 prices) rather than the percentage of revenues on the left hand side. I then find that the budgetary balance is strengthen by roughly NOK 1000 in the most parsimonious fixed effects models (Column (C)) and around NOK 300 per capita in the most general (Columns (D) and (E)).

The effects of earlier years' net operating surpluses are also interesting. It is reasonable to expect that a low (high) surplus in one year is followed by a higher (lower) surplus in the coming year. The intuition is straightforward. If a local government has a very low surplus or a deficit in year $t-1$, it should seek to strengthen its balance in year t. Similarly, if

the surplus in year $t-1$ was high, the local government can afford to increase spending or reduce local taxes in year t, reducing the net operating surplus.

When looking at the one-year lag, however, the opposite seems to be the case. This indicates that, in the short run, persistence may dominate the reversion effect suggested above. Persistence is important in the case where local governments with weak balance in one year are unable to strengthen the balance in the next, while local governments with strong balance avoid increases in spending/tax reductions. The effect from the longer lags, are in accordance with the reversion hypothesis. The fact that the coefficients are small also indicates a low level of persistence.

A bit surprisingly, it seems that a low degree of party fragmentation is associated with lower net operating surpluses. This is surprising since it is common to assume that a strong political leadership (low fragmentation) will be more capable of running a tight fiscal policy. The results are also in contrast to the findings by Borge (2005) who found low levels of party fragmentation to give lower deficits in Norwegian local governments in the 1990s. It must be emphasized that I only include political fragmentation and the share of socialists as control variables and make no attempt to identify robust causal effects from the political variables.

However, a more thorough investigation of my data reveals that the link is consistently negative (i.e. has the expected sign) when using OLS, but that the sign switches when using LFE. Thus, the somewhat odd finding may be due to the limited time series variation in the political variables. The period includes only two local elections, in 2003 and 2007, and since LFE only studies how changes in party fragmentation affects changes in net operating surplus, one should not put too much interpretation into this. Finally we observe that demographic characteristics seem to have little effect on the net operating surplus. Neither the size of the population nor the age composition come out as significant in any of the estimations.

Finally, we take a look at the dynamics. These should be interpreted with some caution due to the limited sample length, but could still offer some valuable insight. The inclusion of the lagged Robek status in Column (D) shows an interesting picture. The first thing we note

is that the coefficient for the Robek status at time t drops only slightly compared to that in Column (D). Further, the coefficient for the time t status is almost twice the size of the coefficient for the lagged Robek status. The latter is also much weaker in terms of significance. This indicates that the effect from inclusion in Robek is direct. Further, the long-run effect can be calculated by scaling the coefficients from the Robek status, with the coefficients for the lagged dependent variable.[7] As discussed above, the fact that the coefficients for the lagged dependent surpluses are small, indicate a low level of persistence (i.e. we are far from observing a unit root). The conclusion is thus that the effect on the net operating surplus from inclusion in Robek is mostly due to an immediate effect. One should note, however, that Nickel-bias probably gives that the coefficients for the lagged dependent variable are somewhat underestimated and thus that the sluggishness may be underestimated.

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[7]By using the coefficients from Equation 1 we obtain the following expression for the long-run effect $(\beta+\iota)/[1-(\phi_1+\phi_2+\phi_3)]$. Long-run effects can also be calculated similarly in the models without lagged Robek status, by setting $\iota = 0$.

Table 5: Estimations of net operating surplus.

	(A)	(B)	(C)	(D)	(E)
Robek	-0.633***	0.311	1.846***	1.026***	0.827***
	(0.217)	(0.210)	(0.236)	(0.221)	(0.227)
Robek lagged by					0.445*
1 year					(0.236)
Local government		0.299***		0.306***	0.302***
revenue		(0.0507)		(0.0636)	(0.0638)
Net debt payment		-1.322***		-1.649***	-1.648***
		(0.136)		(0.0770)	(0.0768)
Effective number		-0.0806		0.444***	0.436**
of parties		(0.123)		(0.170)	(0.171)
Share of socialists		3.201***		4.963***	5.009***
in the local council		(0.996)		(1.905)	(1.907)
Population		-3.27e-06		-8.47e-05	-8.35e-05
		(4.65e-06)		(5.81e-05)	(5.79e-05)
Percentage of pop.		0.126		-0.116	-0.113
0-5 years		(0.157)		(0.233)	(0.233)
Percentage of pop.		-0.0347		-0.178	-0.177
6-15 years		(0.103)		(0.191)	(0.190)
Percentage of pop		-0.0624		-0.304	-0.305
80 years of more		(0.0931)		(0.287)	(0.287)
Net operating surplus		0.180***		0.0685***	0.0662***
lagged 1 year		(0.0452)		(0.0228)	(0.0228)
Net operating surplus		-0.0550		-0.124***	-0.128***
lagged 2 years		(0.0405)		(0.0291)	(0.0292)
Net operating surplus		0.0103		-0.0500*	-0.0493*
lagged 3 years		(0.0207)		(0.0286)	(0.0287)
Local government		-0.216***		-0.222***	-0.220***
revenue lagged 1 year		(0.0419)		(0.0386)	(0.0388)
Method	OLS	OLS	LFE	LFE	LFE
Observations	4,253	2,715	4,253	2,715	2,715
R-squared	0.084	0.540	0.122	0.647	0.648
Number of knr1			429	425	425

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

6 Spending cuts and increased property tax or bailouts?

The main conclusion from Section 5 is that there seems to be a clear positive effect on the net operating surplus from inclusion in Robek. The next question is then what drives this effect. Basically, there are two possibilities, the local governments can reduce their expenditures or increase their revenues. Thus, I investigate the effects from inclusion in Robek on the gross total expenditures and the property tax, both measured per capita.

Further, even though Robek seems to be working as it is supposed to do, there is one more potential worry to consider. I need also to investigate whether the central government provide extra funding (i.e. a bailout) for the local governments in Robek. Even though most

of the funding is exogenously given through a fixed formula, there is a considerable grant handed out on discretionary basis (*skjønnsmidler*).[8] These are administered by the same office that is responsible for the surveillance of the Robek registered local governments, the county governor. I thus estimate an equation similar to (1)

$$
\begin{aligned}
\kappa_{it} = {} & \beta Robek_{it} + \phi\kappa_{it-1} + \gamma_1 Revenue_{it} + \gamma_2 Revenue_{it-1} \\
& + \rho Inst_{it} + \theta ENOP_{it} + \mu Soc_{it} + \mathbf{Dem}_{it}\boldsymbol{\omega} + \lambda y_{it-1} + \alpha_i + \delta_t + \epsilon_{it}
\end{aligned}
\tag{3}
$$

where κ_{it} is either gross total spending, property tax revenue or discretionary grants, all measured per capita (in NOK 1,000 and fixed 2000 prices). The remaining variables are well known from the discussion of (1).[9] Results from the estimations are reported in Table 6.

Let us start by just briefly discussing Column (C). The interesting part here is whether local governments in Robek receive more discretionary grants and thus to some extent are bailed out. Importantly, the results in Column (C) clearly indicate that bailouts are not driving the results for the net operating surplus. The coefficient for the Robek variable is insignificant and, if anything, the negative sign suggests that local governments in Robek actually receive less discretionary grants.[10]

We then turn to the variables determined by policy measures available for the local governments.[11] The coefficient for the Robek variable comes out with the expected sign when estimating gross total expenditures and property tax, but is only significant when estimating the expenditures. It should be mentioned that the coefficient for the Robek variable comes out as significant also when estimating property taxes in more parsimonious models where less controls are included. Thus, it seems that at least some local governments also respond to inclusion in Robek by increasing their property taxes. Still the results indicate that

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[8]Descriptive statistics for the discretionary grants are provided in Appendix A.

[9]Since high (low) debt payments at time t all others equal will give higher (lower) spending (because debt payment is a part of the spending), I use lagged values of the debt payments when estimating gross total spending. The debt payments can then be interpreted as a constraint because of high debt.

[10]The county governors are allowed but not required to hold back discretionary grants to local governments in Robek that do not present a committing plan for fiscal adjustment. A negative, but insignificant sign indicates that this is done to some extent.

[11]All figures in this discussion are measured in fixed 2000 prices.

Table 6: Estimations of other fiscal variables (all per capita). Local government fixed effects.

	(A) Gross total expenditures	(B) Property tax	(C) Discretionary grants
Robek	-0.511***	0.0115	-0.0775
	(0.0934)	(0.0216)	(0.0472)
Local government	0.161***	0.00403	-0.0126
revenue	(0.0400)	(0.0104)	(0.0233)
Net debt payment		0.0190*	-0.00143
		(0.00995)	(0.00554)
Net debt payment	0.114**		
lagged 1 year	(0.0490)		
Effective number	0.0572	0.0598**	0.0171
of parties	(0.0742)	(0.0241)	(0.0420)
Share of socialists	-0.598	0.257	-1.062**
in the local council	(0.971)	(0.159)	(0.538)
Population	-0.000126***	-2.99e-05*	0.000191***
	(3.31e-05)	(1.53e-05)	(3.98e-05)
Percentage of pop.	-0.0296	-0.0543	0.112*
0-5 years	(0.103)	(0.0393)	(0.0662)
Percentage of pop.	0.0205	-0.0340	0.0835*
6-15 years	(0.0970)	(0.0216)	(0.0435)
Percentage of pop	0.146	-0.0465*	-0.0479
80 years of more	(0.131)	(0.0273)	(0.0895)
Gross total expenditure	0.646***		
lagged 1 year	(0.0550)		
Property tax		0.829***	
lagged 1 year		(0.0912)	
Discretionary			6.02e-05***
grants lagged 1 year			(8.70e-06)
Local government	-0.0798***	-0.0273	-0.00611
revenue lagged 1 year	(0.0292)	(0.0218)	(0.0284)
Net operating surplus	0.105***	0.000506	-0.00192
lagged 1 year	(0.0146)	(0.00349)	(0.00263)
Observations	2,939	2,939	2,100
R-squared	0.812	0.784	0.428
Number of knr1	427	427	424

Robust standard errors in parentheses. A constant term and time
dummies (not reported) included.
*** p<0.01, ** p<0.05, * p<0.1

local governments in fiscal distress use cost reductions rather than tax increases in order to strengthen their budgetary balance. The point estimate suggests that inclusion in Robek is associated with a reduction in spending per capita by roughly NOK 500, which is in the same area as the point estimates when estimating the net operating surplus in NOK. Thus we have that the strengthening of the budget balance seems to be almost entirely due to reduction of operational expenditures.

7 Sensitivity tests

Before concluding the paper, I need to address two issues regarding the Robek variable. Firstly, as stated in Section 2 it is not obvious how one should define the Robek variable. In the benchmark formulation the dummy was equal to 1 only if the local government was included in the register when entering the year. I have argued that the benchmark formulation is suitable, because I aim to study how inclusion in Robek when deciding the budget and entering the budgetary year affects local government behavior. However, in this section I try out a more general dummy formulation where the dummy equals 1 if the local government was listed in Robek at any time during the year.[12] This formulation captures also the local governments that were allowed to exit the register the same year as they entered it.

Secondly, local governments that are included in Robek in January may know that their economic performance in the preceding year was so strong that they are certain to exit the register during the present year. This would reduce the need for fiscal adjustment in year t, and my benchmark formulation would thus underestimate the effect from Robek. Similarly, a local government may not be in Robek in January, but know that the performance last year was so bad that it will certainly enter the register before next year. This may give that the local government either starts the adjustment prior to the entrance, or that it postpones adjustments that it would otherwise have made in the present year until after entering the register. Starting the adjustment early would mean that my benchmark underestimates the Robek effect, while a postponement would give that I overestimate the effect. I address these issues in two alternative ways. Firstly, I create a new Robek variable that is equal to 1 if a local government is in Robek both at time t and $t + 1$. Secondly, I use next year's Robek status rather than the present year's status.

Column (A) in Table 7 is identical with Column (D) in Table 5 and represent the benchmark specification. The full set of control variables are included in all regressions in the table, but not reported in order to save space. The only thing that separates Column (A)

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[12]Descriptive statistics for the alternative Robek variable is given in Appendix A.

Table 7: Specification tests. LFE with net operating surplus in year t as dependent variable.

Robek specification	(A)	(B)	(C)	(D)
Benchmark	1.026*** (0.221)			
In Robek at any time during year t		0.941*** (0.229)		
In Robek both in year t and $t+1$			0.863*** (0.255)	
Robek status in year $t+1$				0.889*** (0.273)
Observations	2,715	2,715	2,715	2,297
R-squared	0.647	0.647	0.645	0.683
Number of knr1	425	425	425	425

Robust standard errors in parentheses. A constant term, all control variables
from Table 5, Column (D) and time dummies (not reported) included
*** p<0.01, ** p<0.05, * p<0.1

from the others is that I in Columns (B)-(D) introduce the different specifications suggested above and use these instead of the benchmark. The predicted effect from inclusion in Robek drops slightly in all alternative specifications, but still hovers around 1. These findings add strength to my interpretation of the benchmark results.

8 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 have violated the BBR. The formal 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. In addition to the formal consequence, negative publicity in local media may provide an additional source of incentives for local politicians to take the necessary actions to strengthen the budgetary balance. The empirical analysis is based on a rich panel data from the establishment of the register in 2001 until 2010, and I estimate a dynamic panel model. The findings suggest that local governments that are included in the register lower their total expenditures and thus strengthen their budgetary balance. Importantly, the results for the

net operating surplus are not driven by bailouts. The main conclusion is that the register seems to serve its purpose of strengthening the budget balance in the local governments as intended. Hence, the introduction of even a mild 'punishment' may improve the efficiency of ex ante BBRs. My interpretation is that this is probably due to a combination of formal and informal mechanisms. First, local governments in Robek are subject to closer central government monitoring and must be more realistic in their budgeting. Second, inclusion in Robek gives negative attention in local media, and can be considered as a "list of shame" for local politicians. This negative attention should ensure that vote-maximizing politicians are eager to exit the register and thus take the necessary steps in order to strengthen the budgetary balance.

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A   Descriptive statistics

Variable	Mean (st.dev)
Alternative Robek variable ($N = 4300$)	0.22 (0.42)
Discretionary funds (in NOK 1,000 per cap) ($N = 2998$)	0.86 (1.19)
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 (in NOK 1,000 per cap) ($N = 4476$)	32.93 (9.91)
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)