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Local government grants and income tax revenue: Redistributive politics in Norway 1900–1990*

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Abstract. An important aspect of the welfare state is public provision of private goods, primarily education and health care. In Norway the provision of these services has been organized through the local public sector. The development of the welfare state has to a large extent been the development of welfare communes. The important revenue sources of the local and county governments, grants and income tax revenue, have been controlled nationally, and the paper addresses the determinants of these revenues during 1900–1990. The approach combines a demand model of local public services emphasizing price and income-elasticities with a political economy model of central government ideology and strength. The decision making is understood as bargaining between the government and interest groups, and the political structure consequently is of importance for the policy outcome. The analysis shows how politics matter, and the results indicate that a minority coalition government implies 30% more grant and income tax revenue to local and county governments than one party majority in the long run.

1. Introduction

The growth of the Norwegian welfare state is strongly linked to the growth of the local public sector. Two thirds of the public service production is arranged by local and county governments, and they supply all the major welfare services, including primary school, secondary school, primary health care, hospitals, child care, care for the elderly and infrastructure. The local public spending has been growing steadily during the 20th century, rising from about 3% of GDP in 1900 to about 17% in 1990. The central government has arranged the expansion partly by rising grants to local and county governments and partly by allowing income tax revenue to expand. The national decision making process controlling the financing of the local public sector is addressed in this paper.

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The demand for income-elastic welfare services is the underlying economic driving force of the growth process. Since important services such as education and health care are socialized and decentralized to local and county governments, the growth of demand for welfare services is channelled towards the local public sector. As the welfare services basically include private goods and they are provided free of charge or heavily subsidized, permanent excess demand is observed. In the political system this excess demand appears as pressure for more spending from client groups and professions with a stake in the services. Interest groups tend to be active when publicly provided services have private and redistributive characteristics. The interest groups consequently impose negative externalities on each other, and the role of the central government is to internalize these externalities.

The ability to withstand interest group pressure and the willingness to expand the various services depend on the political structure of the central government. Two political dimensions are represented, ideology and strength. Ideology is measured by the share of socialist votes in parliamentary elections, assuming a socialist preference for public sector production. Three measures of political strength are applied: The duration of the government, an index based on majority/minority and one/multiple parties in government and a Herfindahl index of party fragmentation in parliament.

Our analysis of grants and income taxes in a unitary state can be compared with the study of federal assistance to state and local governments in the federalist US by Inman (1988). His emphasis on the decision making structure of Congress is the counterpart to our attention to type of government and composition of parliament. Borge and Rattsø (1994) is a companion paper addressing the politics of local public spending growth. Inman and Fitts (1990), Poterba (1994) and Roubini and Sachs (1989) are recent contributions to the understanding of political strength in other contexts. Garand (1988) has analyzed political factors influencing the spending growth of US states.

Section 2 describes the historical growth of local and county government grants and income tax revenue, and relates the growth process to economic experiences. The institutional history of the development of the local financial system is offered in Section 3, while the evolution of national politics is described in Section 4. Section 5 presents the modelling approach to central government decision making, and the econometric formulation is documented in Section 6. The analysis and the main findings are discussed in Section 7.

2. Grant and income tax financing of local public sector

The steady growth of the local public sector is documented in Table 1. The local public spending share of GDP (Share) has been rising over the whole

Table 1. The development of economic variables 1900–1990

	Share	Grant	Grant + tax	GDP	Price	Infl.
1900s	4.6	4.2	3.2	2.2	102.4	0.4
1910s	4.9	8.6	6.7	3.3	97.6	10.9
1920s	7.9	4.4	4.8	3.5	105.7	–4.4
1930s	8.6	8.0	2.7	2.8	107.7	0.4
1940s[a]	8.9	11.1	13.5	7.1	103.4	0.0
1950s	10.5	5.9	3.7	3.8	103.1	4.9
1960s	12.0	5.8	3.9	4.3	120.5	3.7
1970s	15.6	6.3	4.2	4.7	136.1	8.0
1980s	17.0	5.0	3.3	2.4	132.4	8.0

[a]Comprises only the years after the Second World War.

period, in particular during the 1920s and the 1970s. Grants to local and county governments show average real growth rate of above 5% for most of the decades, while the sum of grants and income tax revenue have had somewhat lower growth. The residual financing of the local spending has been subject to local control under strict law regulation and includes property taxes, wealth taxes, charges and loans (limited to investment). The fluctuating growth rates of grants and income tax revenues are the object of this study.

The standard demand model of local public services emphasizes the role of income growth and relative prices. Over the decades, the GDP growth has been reasonably stable, about 3.5% per year, somewhat stronger during the post-World War II industrialization. The relative price of local public goods (price, relative to the GDP price index) has been stable up through the 1950s, and a possible Baumol (1967) effect seems to be limited to post 1960.

The central government control of public spending has been coordinated with active macroeconomic stabilization policies, definitely since 1935. After WWII, “national budgets” have been presented before parliament annually, and the allocations to local and county governments have been motivated by macroeconomic considerations. For most of the period, unemployment has been avoided, and inflation (and current account deficit) has been the main concern of stabilization policy. Except for the WWI inflation, the deflation of the 1920s, and the post-OPEC experience, the inflation rate has been fairly low. The fluctuating macroeconomic variables may explain variation in central government priority of local and county governments.

3. The institutional history of local public financing

The system of financing of the local and county authorities has developed from extreme decentralization to extreme centralization during the period under study. Before the turn of the century, the local authorities were primarily financed by local revenue sources. The tax laws of 1882 introduced a compulsory income tax in all local authorities. The design and the coverage of the income tax were determined by law, but each authority could determine its own income tax rate. Kjellberg (1981) has characterized this early period as laissez-faire national policy. Grants were of the matching kind or economic support to specific authorities determined case by case dependent on the local economy. In 1900, the national grants represented about 10% of the total revenues, the property tax was important, about 20% of tax revenues, and the main tax source, the income tax rate, varied significantly between the authorities.

The local autonomy regime broke down first and for all because economic differences between authorities developed. Income tax rate variation increased, and many authorities entered a debt crisis during the overall economic contraction in the 1920s. Redistributive concerns motivated a national response to the economic differences evolving. A maximum local income tax rate determined by the national parliament was established with the 1911 tax law. The maximum rate was first set at 10%, but most authorities had a tax rate well below the maximum. Over time the authorities drifted towards the maximum, even when the maximum rate itself was adjusted upwards. At first, the Ministry of Finance allowed many authorities to set the tax rate above the maximum. In 1927/1928, 319 out of 760 authorities were allowed to have a tax rate above the maximum 15%. As will be discussed below, the local authorities were gradually forced to set their tax rate below the regulated maximum. The tax law of 1911 was a serious blow to the local autonomy, and the local authorities have never regained their local control of revenues.

Since the regulations of the income tax system did not address the underlying income inequality, more national intervention was demanded. At first, *ad hoc* economic support to specific local authorities were linked to their unemployment problems. The role of equalization grants was formalized by the introduction of the "tax equalization fund" in 1936, the beginning of a new grant policy. A lump sum grant based on objective criteria (per capita income, unemployment etc.) was financed by a local authority tax on interests of bank deposits. This redistribution scheme, introduced to help the poor authorities, became the vehicle of increased national control of local revenues and spending. In 1939, the transfers represented 25% of total local revenues and the regulated income tax was the dominating source of tax revenue, above 80%.

The development of national economic controls of the local public sector during the 1930s was seen as a response to economic crisis, but was also the beginning of the welfare state. More and more the local and county governments were producing services (education, health care) defined by national laws and promoted and funded by matching grants. The growth of the welfare state was extended to all parts of the country by generous redistribution to the periphery to compensate for low income levels, arranged by the tax equalization fund.

After World War II, the regulation of the income tax continued. the maximum rate of the income tax was gradually enforced, and the tax rates of all authorities converged towards the maximum. A minimum income tax rate was introduced about 1955, since then allowing for a variation of tax rates of maximum 4 percentage points. Most local authorities had the maximum rate, and in 1977 the last and the richest local authority "gave in" – all municipalities have since had the maximum income tax rate. The process towards the maximum is easy to understand. Authorities with a lower tax rate expected to be punished by the tax equalization policy. The local income tax system guaranteed an expansion of both national control and local revenues. The expansion of the tax base guaranteed an automatic growth of local revenues in tandem with the overall expansion. In the period 1950 to 1975, the grants were a stable 20% of local revenues.

A conventional understanding of the centralization of the financing of local governments emphasizes a rising share of grants in total local revenues. Grants are controlled by the central government and a higher grant share represents national influence on the local budget constraint. The distinction between national control related to grants and national control of local revenue sources is not that clear cut in a unitary state with an income tax revenue sharing system and tax laws determined at the national level. A nationally defined tax system may allow local discretion in tax rates, but central governments have often shown an interest to influence local tax rates as part of an overall tax policy. Centralization of local and county government financing in Norway includes both the growth of grants and increased national control of tax instruments and tax rates.

The balancing between grant and income tax financing of local government must be understood as the result of national politics with personal income distribution as the main issue. To be analyzed below, the demand pressure for local services asked for a growth of local and county government spending well above the general income growth. Two concerns have limited further expansion of the income tax as a source of revenue growth. Increased rates of the existing income tax system would have increased the taxation of low to middle income groups the hardest. On the other hand, allowing the local and county governments to enter the progressive parts of the income tax system would have increased per capita revenue inequalities between local and county governments and thereby asked for more equalization grants. Given the above political considerations, the central government has chosen to increase the grants to finance the local public growth after about 1975. Selective grants were constructed and expanded to promote new services in the local and county governments (expansion of primary school and compulsory secondary school, later expansion of the health care system, then care for the elderly and most recently kindergartens). Seen from the local level, income tax revenues, block grants and unconditional (closed ended) selective grants represent equally attractive sources of revenues. In 1986 the grant system was reconstructed, and most selective grants were consolidated into one block grant.

The mix of grant and income tax revenue, the grant system and the local discretion of the income tax have changed over time. To give a broad picture of the development of local and county government financing, we have chosen to concentrate on two variables, the level of grants and the sum of grants and income tax revenue.

4. The evolution of national politics

Our analysis attempts at linking the financial development of local and county governments and the national political priorities. The period after 1900 covers most of the history of parliamentarism and party politics in Norway. Parliamentarism was introduced in 1884, thereby defining a clear role for parties. At first, two parties were competing, the conservatives (Høyre) and the liberals (Venstre). In the early 1900s, combined with industrialization and urbanization, the labor movement came forward. There were strong controversies within the labor movement as to how to be represented in party politics, and the process was influenced by the Russian Revolution in 1917. Gradually the social democratic party established a strong position in the parliament, and since 1928 the main conflict within the parliament has been between the socialist and the non-socialist or bourgeois parties. The socialists have been represented by the social democrats and the communists up to 1961, later the communists have disappeared and a socialist party has been formed. On the non-socialist side, the conservatives have held together, while the liberals have experienced several splits – to christian-democrats and a farmers party. Later a “progressive” party to the right of the conservatives has been established.

The gradual shift at the political scene can be seen from the basis of the governments over time. During 1900–1918, governments of the liberal party or the conservative party were based on a majority in the parliament. The rest of the period up to World War II had minority governments, most of them based on the conservatives or the liberals, although the labor party and a new farmers party had governments for shorter periods. The labor party established a minority government in 1935. After WWII, the labor party had a strong period of majority control during 1945–1961.

The trend towards centralized control of local and county governments is related to the ideological shift represented by the growth of the labor movement and the social-democratic party in the first decades of this century. The supply of welfare services was seen as a national responsibility and was integrated into the national economic planning emerging. The local and county governments were considered as instruments of the central government more than independent units of local democratic control.

The “golden age” of the social democratic party was the period 1945–61 when they held majority in the parliament, most of the period under the strong leadership of Einar Gerhardsen as prime minister. Many consider this period also as the “golden age” of Norway, with stable income growth, full employment, industrialization and expansion of welfare services. The social democrats lost the majority in 1961, although there was a socialist majority, and they continued a minority government to the elections in 1965 (replaced by a conservative government for one month in 1963).

The non-socialists won the majority of the parliament in 1965, and a broad coalition of 4 parties (conservatives, liberals, farmers and christian-democrats) formed a government lasting until they gave up in 1970, and a social democratic minority government took over. The period of political stability was ended, and since 1970 various minority governments have ruled (except for a short period of a majority based non-socialist government 1984–85).

In this study, the ideological climate, as expressed by party representation in parliament, and the political strength of the government, are treated as exogenous determinants of local public financing. It seems realistic to assume that the size of the local public sector has not influenced national politics, and the explanation of varying strength and ideological orientation of governments is beyond this analysis.

To cover the development of ideology, and consistent with other studies in this area, notably Roubini and Sachs (1989) and Henrekson (1988), we identify the socialist share of votes in parliamentary elections. Table 2 documents

Table 2. Political indicators 1900–1990

	SOC	GOV	DUR	HERF
1900s	4.4	3.0	40	0.44
1910s	18.0	3.7	51	0.36
1920s	27.5	1.5	23	0.23
1930s	41.8	2.0	44	0.28
1940s	58.0	4.0	238	0.31
1950s	54.5	4.0	238	0.35
1960s	49.5	2.8	167	0.31
1970s	49.9	2.0	69	0.29
1980s	47.7	2.1	46	0.32

the growth and stagnation of the socialist votes, with a peak just after WWII with close to 60% of the total during 1945–50.

The varying strength of government is measured by an index combining majority/minority and coalition/non-coalition government:

1 – Minority coalition
2 – One party minority
3 – Majority coalition
4 – One party majority

The index is similar to the one adopted by Roubini and Sachs (1989), except that it is of interest to separate between one party and coalition minorities in our case. The average index for each decade is shown in Table 2 (GOV), and is another way of telling the above story. The social-democratic golden age (1945–1961) is a long period of one party majority government. During the 1920s and since 1972 basically minority governments have operated, maybe when strong government was most needed.

Since political strength is hard to measure, two other indicators of strength are included, the duration of government in months (DUR) and a Herfindahl index of the party fragmentation of government (HERF). The correlation between the three measures of strength is surprisingly low. In terms of duration, the long period of social-democratic control after WWII stands out in Table 2. The Herfindahl index shows only small variations in fragmentation of the parliament since the 1930s.

5. Modelling of decision making process

The budget decision of the central government involves macroeconomic stabilization, resource allocation and distribution policy. Many welfare services compete for resources within the budget, and the spending and the tax financing must take into account macroeconomic and distributional concerns. The allocation of resources to the local public sector forms only a small part of this decision, although they represent ⅔ of public sector service production. The motivation guiding the central government budget decision is an area of great controversy and alternative stories are offered.

In this study, we assume that a central government preference function exists and is exogenously given. In terms of resource allocation, the main choice of the government is between private and public disposal. If the decision making is reduced to the choice between local public and private consumption, the aggregate local welfare service desired by the central government can be written as a demand function dependent on relative price and income level. This is related to the conventional demand approach emphasizing price-, income- and congestion-effects, as summarized by Inman (1979). However, the median voter formulation is not relevant in a representative democracy. Here the demand function should be understood as a result of a political process, to be discussed below. The desires of the central government are confronted with interest groups trying to raise the production of publicly provided private goods in the county and local governments. Borge and Rattsø (1994) give a more detailed presentation of the bargaining model between the government and an interest group applied here.

The starting point is the central government demand function for local public service production per capita (X_G) dependent on the relative unit cost (P), per capita income (Y) and the population size (N):

$$X_G = AP^{\eta}Y^{\varepsilon}N^{\mu} \quad \mu = (\gamma - 1)(\eta + 1) \tag{1}$$

η and ε are the price- and income-elasticities of local public services respectively. γ is a congestion parameter that measures the degree of publicness of local public consumption.

A number of interest groups struggle for political influence to benefit from public services. The public services in question are basically private goods produced and distributed by the local and county governments. Each interest group, associated with a particular local service, has an incentive to influence the political process since the costs of the services are shared among all inhabitants. The demand function of the aggregate of the interest groups, X_I, looks like this:

$$X_I = A(\tau P)^{\eta} Y^{\varepsilon} N^{\mu} = A_I P^{\eta} Y \varepsilon N^{\mu} \quad A_I = A\tau^{\eta} > A \; 0 < \tau < 1 \qquad (2)$$

The actual cost of local public services (P) exceeds the perceived cost (τP), where τ is the tax share of the average interest group. The government and the interest groups share the same preferences, but only the government takes into account the total costs of the services.

The actual outcome of the bargaining process produces a compromise between X_G and X_I, where Θ is the relative bargaining strength of the government:

$$X = A\tau^{\eta(1-\Theta)} P^{\eta} Y^{\varepsilon} N^{\mu} \quad 0 < \Theta < 1 \qquad (3)$$

The stronger the bargaining power of the government, the lower production of local public services. A strong government is more capable of internalizing the externalities involved.

The working of the political system is complex, and the above is clearly a stylized representation of the possible influence of interest groups. Political theory is only of limited help to understand this interaction. The most direct understanding of the bargaining compromise refers to actual bargaining taking place. Bargaining over wages and working conditions with public sector trade unions determines important elements of the costs of public service production.

In the model specification, we link the bargaining strength to characteristics of the political structure, the index (GOV) based on majority/minority and one/multiple parties in government, the duration of government (DUR) and the Herfindahl index measuring party fragmentation of the parliament (HERF):

$$\Theta = \Theta \underset{+}{(\text{GOV}},\ \underset{+}{\text{HERF}},\ \underset{+}{\text{DUR})} \qquad (4)$$

The second political economy aspect built in is the ideological orientation of the government. The share of socialist votes in the parliament (SOC) represents ideology, expected to represent a higher priority of the local public sector.

So far the model reflects the government choice between local public goods and private consumption. The resource allocation is determined in conflict with interest groups taking into account the political structure. Added to this, the government also has macroeconomic concerns. The desired use of resources in the public sector, including local and county governments, is adjusted as part of stabilization policy considerations. A complete model consequently must include macroeconomic variables that the government responds to, typically the rate of inflation and unemployment. The constant term of the compromise demand function is influenced by these political factors:

$$\mathrm{A} = \mathrm{A}(\underset{+}{\mathrm{SOC}},\ \underset{-}{\Delta\mathrm{cpi}},\ \underset{+}{\mathrm{UNEMP}}) \tag{5}$$

The political economy model (3)–(5) determines the demand for central financing of local and county governments to be estimated.

6. Operationalization and econometric formulation

The starting point of the empirical analysis is a dynamic version of a logarithmic transformation of equation (3):

$$\begin{aligned} \mathrm{x} &= \beta_0 + \sum_{\mathrm{i}=1}^{2} \beta_{\mathrm{i}}\mathrm{x}(-\mathrm{i}) + \sum_{\mathrm{i}=0}^{2} \eta_{\mathrm{i}}\mathrm{p}(-\mathrm{i}) + \sum_{\mathrm{i}-0}^{2} \varepsilon_{\mathrm{i}}\mathrm{y}(-\mathrm{i}) \\ &+ \sum_{\mathrm{i}=0}^{2} \mu_{\mathrm{i}}\mathrm{n}(-\mathrm{i}) + \sum_{\mathrm{i}=0}^{2} \phi_{\mathrm{i}}\mathrm{z}(-\mathrm{i}) + \mathrm{u} \end{aligned} \tag{6}$$

Small letters indicate logarithmic transformations of the original variables and (–i) that the variable is lagged i years. With this general formulation the long run price- and income elasticities are given by:

$$\eta = \frac{\sum_{\mathrm{i}=0}^{2} \eta_{\mathrm{i}}}{1 - \beta_1 - \beta_2} \tag{7}$$

$$\varepsilon = \frac{\sum_{\mathrm{i}=0}^{2} \varepsilon_{\mathrm{i}}}{1 - \beta_1 - \beta_2} \tag{8}$$

The documentation of Table 1 showed that grants and income tax revenue increased steadily during the period under study, and they are clearly non-stationary. The time-series properties of the variables were checked by performing augmented Dickey-Fuller tests. Non-stationarity cannot be rejected. The null hypothesis is clearly rejected for the growth rates of the same variables. Consequently, the levels are I(1), while their growth rates are I(0).

To avoid problems of spurious correlations, it is convenient to rewrite equation (6) such that the dependent variable is stationary. Without imposing any restrictions this can be done as follows:

$$\Delta x = \beta_0 + (\beta_1 - 1)\Delta x(-1) + (\beta_1 + \beta_2 - 1)x(-2) + \sum_{i=0}^{2} \eta_i p(-i) + \sum_{i=0}^{2} \varepsilon_i y(-i) + \sum_{i=0}^{2} \mu_i n(-i) + \sum_{i=0}^{2} \phi_i z(-i) + u_t \tag{6'}$$

The left-hand side of (6′) is stationary. Then the equation is balanced if and only if the structural part of the right-hand side is I(0). Several of the explanatory variables are I(1), among these are p(–1), y(–1) and x(–2). Hence, the structural part of the right-hand side is stationary only if the I(1) variables form a cointegrating vector. If this is the case, the error term u will be I(0). Thus, to check if an equation like (6′) is balanced it is sufficient to test if the error term is stationary. This is done by performing an augmented Dickey-Fuller test on the residuals.

7. The economics and politics of local public financing

Both economic and political determinants of the financing of local and county governments are identified. The economic factors are consistent with the standard demand model of local public services. The political structure clearly influences the decision making process. The econometric results are reported in Tables 3 and 4. Alternative estimates using different variables representing political strength are reported. A Dickey-Fuller test on the residuals concludes that the preferred equation is balanced.

The economic demand variables, relative price and GDP per capita, come out with the expected signs. In the grant equation, the long run income elasticity is about 1.9, extremely elastic compared to other studies. The interpretation of this result should take into account that grants are only one of the revenue components decided at the national level. The elasticity reflects the increasing role of grants in the financing of local and county governments. The price elasticity of grants is not significant at the 10% level.

When grants and income tax revenues are evaluated together, the income elasticity of the total is about 1.4, significantly larger than 1. Wagner's (1883) law clearly is in the numbers. Interestingly, the price elasticity is large, –2. The rising relative price of local services since the late 1950s (Table 1) has stimulated some substitution to private services. Given the high responsiveness to higher costs, Baumol's (1965) cost disease has not been important.

Given the size of the local public sector, the revenues of the sector cannot be determined independent of the stabilization policy. This understanding is confirmed in the data. Macroeconomic booms, captured by increased inflation rate, has a negative impact on the growth of the local public sector. This is consistent with the view that the central government uses the local public sector as a tool in a Keynesian-type stabilization policy.

The political variables show a strong and consistent effect on the financial situation of local and county governments. As expected, grants come out as the important short run response policy, while income tax revenue takes time to adjust. The ideological variable, the share of socialist votes, clearly affects the priorities of the government. If the share of socialist votes increases by 10%, grants are increased by 4–5% in the short run, while the sum of grants and income taxes is increased by about 2%. The long run effect of such a permanent shift in ideology implies a rise in the level of both grant and income tax revenue of about 12%. The estimates can be related to historical experiences. The reduced support of the socialist parties from the 1950s to the 1960s and the 1970s (from about 55% to 50%), led to a reduction of the national financing of the local public sector by about 6%. The color of the government matters, but it is not the only factor of importance.

Our understanding of the importance of government strength seems to be confirmed. All the three measures of strength show a clear negative impact on the financial situation of local and county governments. Again grants represent the strong short run response, while income tax revenue adjusts over time. Grants are reduced by 3% when the government is changed from multi-party to one-party based or from one-party minority to multi-party majority (the GOV index, columns A). The sum of grants and income tax revenue is reduced by 1.5% in the short run. The long run effect of such a change of government is about 10%, both in the level of grants and income tax revenue.

Comparing the extremes, relative to a minority coalition, a one-party majority government will lead to reduced levels of grants and income taxes of about 30% in the long run. The strength can be compensated by ideology. But the share of socialist votes must be 25% higher with a one-party majority government to compensate for the difference from a minority coalition. Given the reasonably stable socialist support since WWII (Table 2), we conclude that strength is the main factor explaining variations in local and county government financing.

Our analysis explains a puzzle discussed in Sørensen’s (1988) analysis of public sector growth in Norway. He says that

> “I find no support for the view that the larger the proportion of socialist representatives, the greater the growth of the government sector. In fact, the parameters indicate a weak negative relationship, suggesting that a non-socialist dominated parliament tends to accelerate government growth” (p. 285).

Table 3. Selected estimation results, grants
Standard errors in parentheses

	A	B	C
x(–2)	–0.351***	–0.341***	–0.369***
	(0.060)	(0.062)	(0.064)
p(–2)	–0.392	–0.203	–0.261
	(0.244)	(0.224)	(0.227)
y(–2)	0.684***	0.649***	0.709***
	(0.131)	(0.132)	(0.139)
Δ^2cpi	–0.379**	–0.381**	–0.403**
	(0.170)	(0.174)	(0.171)
SOC(–1)	0.442***	0.505***	0.369**
	(0.168)	(0.176)	(0.174)
GOV(–2)	–0.032**		
	(0.013)		
DUR(–2)		–0.025	
		(0.016)	
HERF(–2)			–0.363*
			(0.182)
η	–1.12	–0.59	–0.71
ε	1.95	1.90	1.92
T	83	83	83
R^2_{adj}	0.47	0.45	0.46
DW	1.98	1.88	1.86

Notes: * denotes significance at the 10% level; ** at the 5% level and *** at the 1% level. T is the number of observations.

When ideology is separated from strength, his result can easily be understood. Non-socialist dominated parliaments and governments have tended to be coalitions with short durations.

The two other measures of government strength, duration (DUR, columns B) and fragmentation of parliament (HERF, columns C), show the same kind of effect. Increased duration of government and less fragmentation of parliament holds back on grants and income tax revenue.

The evolution of the Norwegian political system is discussed in Section 4, and two long periods of political turbulence can easily be identified. The first period of shifting governments, often of the minority variant, was during the depression (1920–1940). Since the breakdown of the majority governments in 1970, the country has had another period of little political stability. We shall not attempt at explaining the development of political structure. But it seems like that political instability goes hand in hand with economic instability. Then governments tend to be weak when they are most needed to be strong.

Table 4. Selected estimation results, sum of grants and income tax revenue
Standard errors in parentheses

	A	B	C	D
x(–2)	–0.162***	–0.152***	–0.162***	–0.177***
	(0.036)	(0.036)	(0.036)	(0.036)
p(–2)	–0.386***	–0.318***	–0.327***	–0.457***
	(0.118)	(0.111)	(0.109)	(0.116)
y(–2)	0.228***	0.211***	0.218***	0.234***
	(0.060)	(0.059)	(0.058)	(0.059)
Δ^2cpi	–0.475***	–0.475***	–0.481***	–0.351***
	(0.082)	(0.083)	(0.081)	(0.093)
ΔUNEMP				0.016***
				(0.006)
SOC(–1)	0.229***	0.255***	0.195**	0.265***
	(0.084)	(0.088)	(0.083)	(0.081)
GOV(–2)	–0.015**			–0.021***
	(0.006)			(0.007)
DUR(–2)		–0.015**		
		(0.008)		
HERF(–2)			–0.157**	
			(0.070)	
η	–2.38	–2.09	–2.02	–2.58
ε	1.41	1.39	1.35	1.32
T	97	97	99	79
R^2_{adj}	0.46	0.45	0.46	0.57
DW	1.44	1.43	1.50	1.45

Notes: * denotes significance at the 10% level, ** at the 5% level and *** at the 1% level. T is the number of observations.

8. Concluding remarks

We have shown that both ideology and strength of the central government are important to understand the development of local public finance in Norway. The priority of the local public sector is related to ideology, here the share of socialist votes. The implementation of the desired policy must take into account the bargaining between the government and interest groups. A strong government is able to hold back on the spending pressure, with significant effects as regards the financing of the local public sector.

The analysis shows how the central government arranges the grant system and the income tax to finance local and county governments. Grants are the short run instrument to change priorities, and grants have a strong short run response to shifts in both ideology and strength. Over time the income tax system is adjusted to balance the financial package, reacting to ideology and strength similar to grants.

The political aspects of the expansion of local and county government financing before WWII involves the progress of socialism and weak governments. After WWII, the socialism has been on a declining trend, but the strength of governments has been declining too. Local and county governments have been allowed to expand. The strong one-party socialist government of the 1950s (the Gerhardsen government) was able to hold back on the local financing compared to conservative minority coalitions of the 1980s.

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Appendix: Documentation of the variables

X	–	grants and sum of grants and income tax revenue per capita, deflated by the national account's price index for local public spending. Grant data cover 1900–1990, while grant + income tax data cover 1886–1990.
Y	–	gross domestic product per capita measured in real terms.
P	–	the ratio between the price index for local public spending and the GDP price index.
CPI	–	the consumer price index.
N	–	the population size.
SOC	–	the share of socialist representatives in the parliament.
GOV	–	index for government strength.
DUR	–	the duration of the government, number of months.
HERF	–	a Herfindahl-index for the party fragmentation of the parliament.

Six major sources are used in constructing the data. These are: NOS: National Accounts, NOS: Historical Statistics, NOS: Public Sector Finances, NOS: Population and Housing Census, NOS: Statistical yearbook and SES: Trends in Norwegian Economy 1865–1960, all from the Central Bureau of Statistics. The data on the consumer price index before 1900 is taken from Hodne et al. (1993), while the unemployment data for the years 1919–1939 are taken from Hodne et al. (1992).