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Søren Risbjerg Thomsen*

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Introduction

How important is national politics compared to local politics for the outcome of local elections in Denmark, Norway and Sweden? The standard approach to this problem is to ask individual voters if they would vote for the same party at national as well as at local elections (Gilljam & Holmberg 1993, 57; Mouritzen 1997, 290). In contrast, this article uses an ecological approach where aggregate electoral and aggregate public opinion data about national politics party support is used to explain and predict the aggregate results of local elections. Further, the mathematical models and the estimated values of the parameters of the models are used to answer the question about the importance of national politics compared to local politics for the outcome of local elections.

Because of similarities as well as differences between the three Scandinavian countries in the period under study, they offer interesting

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opportunities for a comparative study. In this study, the comparative part of the analysis is only made at the national level. However, based on the results of a separate preliminary analysis of Danish data at the municipal level, it is argued that a more sophisticated comparative study could be carried out by including data from all three countries at this level. In this way, the article can be regarded as an argument for a more comprehensive comparative Scandinavian study.

The Problem

As all observers of voting behavior in Scandinavia know, the outcomes of local elections differ from the outcomes of national elections. Like in many other European countries with stable party systems, the outcomes of national elections are very much decided by national politics, while local elections are affected by local politics in the individual counties and municipalities. The importance of national events independent of local affairs at national elections is witnessed by the prevalence of what is known in Britain as "the swing," i.e., the uniform change of party support across nearly all constituencies since the last national election. This is also the reason it is possible to make a quite good forecast of the final national election results on election night based on a few local results. The dominance of the swing is also an indication that local politics has little impact on national elections.

In contrast, national politics seem to have an important impact on the outcomes of local elections in Scandinavia. Although the swing is not as uniform as at national elections, on average the party swing at local elections seems to reflect the change of party support in national politics to a certain extent. In this way, local politicians are to some degree victims of the affairs of national politicians. This is, of course, only relevant for those parties that participate in both national and local elections and not for the so-called "local lists." However, the support for these lists is, on average, quite low and quite stable in the Nordic countries.

Now, the primary problem in this article is to study and describe to which extent the national politics swing has an impact on the local politics swing in Denmark, Norway and Sweden at the national aggregate level. On the one hand, this level is not so interesting for an observer who wants to study how local party organizations in the individual counties and municipalities can influence local election result. On the other hand, it will indicate *the average impact* of national politics on local elections across all units.

Since the local successes and failures of a certain party tend to counterbalance each other across all local units, the importance of local politics is not so visible at the national aggregate level. For this reason, a methodology for studying the impact of national politics in the individual

units is proposed. With this methodology it should be possible to estimate a "normal" outcome of a local election in each unit considering the impact from national politics. Comparing actual local election results with these estimates could then assess the effects of local politics.

Local Elections in Scandinavia

The similarities of the three Scandinavian countries are that they are all small, affluent societies with high social welfare, with the same kind of multiparty system and with local elections in both counties and municipalities. The differences with regard to local elections concern the timing of the elections. Local elections are held with fixed intervals in all three countries, but they differ with regard to the timing of national elections in relation to local elections.

Tables 1–3 show the data about party support at national level in all three countries since about 1970 when administrative reforms were introduced in all three countries.

In Denmark and Norway, the national politics support for the parties is estimated by public opinion polls of party support "if a national election were to be held" at about the same time as the local elections. In Sweden, the estimation of the national politics party support at the same time as local elections is no problem, since local elections to counties and municipalities are held on the same date as the national election at regular three-year intervals. In comparison with Denmark and Norway, Sweden offers the opportunity to study the effect of synchronism of national and local elections. Another interesting difference concerning election dates exists between Denmark and Norway. In Denmark, local elections are held at regular four-year intervals, while the Prime Minister can call for a national election at any time. This means that national election dates are randomly distributed in relation to local election dates. In Norway, local elections are held exactly in the middle of the regular four-year period between national elections.

Another important difference between Sweden and the two other countries is that local lists outside the national political parties get more votes in Denmark and Norway (about eight percent in Denmark and about five percent in Norway). However, since we will concentrate on the parties, the party support in Tables 1 and 2 for Denmark and Norway is computed as percentages of all party votes, excluding local lists. In Denmark, since no county elections are held in Copenhagen City, the results from the municipal election in Copenhagen City are included in the county election results.

Table 1. Party Support at Supposed National (N), County (C), and Municipal (M) Elections in Denmark

Year	Type	A	B	C	D	E	F	G	K	P/O	Q	V	Y/Ø	Z	X
1970	N	40.8	13.6	19.3		0.6	5.2		0.6			17.4	1.4		1.0
1970	C	43.0	9.8	21.0		0.7	3.5		1.1			20.0	0.6		0.3
1970	M	46.8	8.6	20.9		0.4	3.4		1.1			17.9	0.6		0.3
1974	N	27.9	9.4	7.8	4.4	3.2	5.6		5.5		4.8	15.0	1.3	14.5	0.5
1974	C	33.3	8.6	13.1	2.3	1.7	4.4		3.7		3.5	19.6	1.1	8.4	0.3
1974	M	36.1	7.7	13.5	2.2	1.1	4.3		3.6		2.2	19.9	0.9	8.2	0.3
1978	N	39.6	3.6	11.6	4.0	3.5	3.8		3.2		2.0	11.5	3.6	13.3	0.3
1978	C	38.9	5.5	14.5	1.8	1.7	3.7		3.5		2.1	16.7	2.3	9.0	0.4
1978	M	40.8	4.9	14.9	1.4	1.1	3.4		3.6		1.4	17.1	2.2	8.8	0.4
1981	N	33.3	5.9	15.2	4.5	2.0	9.0		1.6		2.2	12.8	3.4	10.1	0.2
1981	C	35.9	6.0	17.1	1.7	1.1	6.8		1.9		1.7	17.3	3.1	7.0	0.3
1981	M	37.2	5.2	17.7	1.0	0.6	6.2		2.0		1.3	18.7	2.7	6.9	0.3
1985	N	31.7	4.6	24.4	3.1	1.0	13.8	1.3	0.5		2.3	12.0	2.1	2.8	0.5
1985	C	35.6	4.3	20.1	1.3	0.5	11.4	2.8	1.1		1.8	16.1	2.2	2.3	0.5
1985	M	38.0	3.7	20.4	0.8	0.3	11.4	1.3	1.2		1.3	17.8	2.0	1.9	0.1
1989	N	32.2	3.7	15.5	4.8	0.3	12.9	1.8	0.1	1.1	1.8	14.3		10.6	0.8
1989	C	36.5	3.5	15.0	2.6	0.3	11.1	2.1	0.0	0.8	2.0	18.3		7.2	0.9
1989	M	38.9	3.0	15.9	1.7	0.1	10.9	0.9	0.0	0.5	1.5	19.6		6.1	0.9
1993	N	32.7	3.7	11.9	2.3	0.2	8.7	0.4	0.0	0.8	1.9	28.3	1.8	6.9	0.4
1993	C	35.0	4.0	13.1	1.0	0.2	9.3	0.9	0.1	0.3	1.7	27.6	1.5	5.2	0.2
1993	M	37.8	3.1	14.0	0.6	0.1	8.8	0.4	0.1	0.2	1.3	27.7	1.2	4.7	0.2
1997	N	30.2	4.2	11.8	2.7		8.0			10.7	1.7	25.6	2.8	1.6	0.7
1997	C	34.1	4.8	12.5	1.0		8.2			7.0	1.7	25.8	2.8	1.8	0.2
1997	M	36.8	3.6	13.4	0.6		8.2			5.5	1.2	26.8	2.1	1.7	0.2

Party names: A = Social Democrats; B = Social Liberals; C = Conservatives; D = Center Democrats; E = Justice Party; F = Socialist People's Party; G = Green Party; K = Communist Party; P = Common Course; O = Danish People's Party (1997); Q = Christian People's Party; V = Agrarian Liberals; Y = Left Socialist; Ø = Left Alliance (from 1993); Z = Progress Party; X = Other. Party support at local elections in percent of party votes (local lists excluded). Expected national elections estimated by average support in public opinion polls about the time of the local elections (AIM and Greens/Børsen; Gallup/Berlingske Tidende; GfK-Observa/B.T.; Sonar/Jyllands-Posten; Vilstrup/Politiken). Results from municipal elections in the municipalities of Copenhagen and Frederiksberg are included in the county results.

The Models

Thomsen (1986; 1992) proposed a model for national impact on local elections in Denmark, the swing model. With this model, the party swing at local elections, i.e., change of party support from one local election to the next, was found to be approximately proportional to the swing at supposed national elections. Since national parliamentary elections in Denmark are not held at the same time as local elections, the support at the supposed national elections were estimated by linear interpolation between actual national elections before and after the local elections. In Thomsen (1993), this crude

Table 2. Party Support at Supposed National (N), County (C), and Municipal (M) Elections in Norway

Year	Type	A	F	H	K	S	L	V	X
1963	N	46.2		21.3	9.0	9.1	5.6	8.8	
1963	M	48.9		21.1	7.3	8.8	5.0	9.0	
1967	N	43.9		20.6	8.0	9.7	7.7	10.1	
1967	M	45.8		20.2	7.4	9.7	6.6	10.3	
1971	N	42.5		18.5	9.1	12.8	8.7	8.4	
1971	M	44.8		19.2	9.4	12.4	5.1	9.1	
1975	N	37.5	1.6	21.3	13.9	10.6	7.4	3.2	4.4
1975	C	38.1	1.4	22.6	12.3	11.2	6.2	3.8	4.4
1975	M	40.0	0.8	23.0	12.1	11.3	6.2	3.9	2.6
1979	N	37.2	4.5	28.6	10.9	7.2	4.9	5.8	1.1
1979	C	36.0	2.5	29.9	10.2	8.6	5.7	5.3	1.8
1979	M	37.2	2.0	30.2	10.1	8.8	5.3	5.4	1.0
1983	N	39.2	7.1	27.5	8.4	6.0	5.6	4.2	2.0
1983	C	38.9	6.3	26.4	8.8	7.2	5.3	4.4	2.7
1983	M	39.9	5.4	26.6	8.7	7.7	6.6	4.6	0.5
1987	N	38.6	10.7	24.8	8.0	5.5	6.7	3.8	1.9
1987	C	35.9	12.3	23.7	8.1	6.8	5.7	4.3	3.2
1987	M	37.6	10.9	24.4	8.2	7.4	7.1	4.1	0.4
1991	N	31.0	8.1	23.1	8.0	10.0	14.0	3.3	2.5
1991	C	30.4	7.0	21.9	8.1	12.0	12.2	3.5	4.9
1991	M	31.5	6.8	22.4	8.1	12.0	13.6	3.9	1.7
1995	N	36.2	13.1	18.6	8.2	10.6	5.7	4.6	3.0
1995	C	31.3	12.0	19.9	8.5	11.7	7.9	4.7	3.9
1995	M	32.2	11.1	21.3	8.7	12.2	8.0	5.2	1.4

Party names: A = Labor Party; F = Progress Party; H = Conservatives; K = Christian People's Party; S = Center Party; L = Left wing (NKP, FV, RV); V = Liberals; X = Other. Party support at local elections in percent of party votes (local lists excluded). Expected national elections estimated by average support in public opinion polls about the time of the local elections (Gallup, NMD, NMI, NOI). Expected national election in 1995 from Rommetvedt (1996). There was no county election in Norway before 1975.

approach to estimation of national party support was replaced by estimation with public opinion polls about national politics party support at about the same time as local elections. With this new approach, the fit of the swing model was much improved.

In spite of a quite good fit of the swing model in all three countries, the model is criticized from a theoretical point of view. The main argument is that the logic of the swing model has absurd consequences for long-term electoral dynamics. Especially, it can, in the long run, lead to extreme deviations between national and local elections. To comply with this criticism, a *feedback model* is suggested. It is only a minor modification of the swing model with a slightly better fit at the national level, but it leads to much better prediction of the long-term dynamics and to more interesting comparisons between the three countries. Further, it turns out that a non-linear version of

Table 3. Party Support at National (N), County (C), and Municipal (M) Elections in Sweden

Year	Type	M	C	F	K	G	S	V	X
1970	N	11.5	19.9	16.2	1.8		45.3	4.8	0.4
1970	C	11.7	19.5	16.2	1.8		45.6	4.4	0.8
1970	M	11.8	18.8	16.1	1.8		45.3	4.4	1.7
1973	N	14.3	25.1	9.4	1.8		43.6	5.3	0.6
1973	C	13.8	25.2	9.5	2.1		43.8	5.0	0.6
1973	M	13.9	23.7	10.4	2.1		43.2	5.1	1.7
1976	N	15.6	24.1	11.1	1.4		42.7	4.8	0.4
1976	C	14.9	23.2	10.9	1.9		43.7	4.7	0.6
1976	M	15.1	22.1	11.3	2.0		43.0	4.9	1.5
1979	N	20.3	18.1	10.6	1.4		43.2	5.6	0.8
1979	C	18.6	18.6	10.4	2.0		43.9	5.5	1.0
1979	M	18.6	17.7	10.5	2.1		43.0	5.8	2.4
1982	N	23.6	15.5	5.9	1.9	1.7	45.6	5.6	0.2
1982	C	21.9	16.0	5.7	2.4	1.9	46.6	5.1	0.4
1982	M	21.7	15.3	6.0	2.4	1.6	45.5	5.4	2.1
1985	N	21.3	10.1	14.2	2.3	1.5	44.7	5.4	0.5
1985	C	20.7	12.0	13.2	2.0	2.0	44.4	5.1	0.5
1985	M	20.6	11.9	12.4	2.0	2.5	42.6	5.3	2.6
1988	N	18.3	11.3	12.2	2.9	5.5	43.2	5.8	0.7
1988	C	17.9	12.4	12.3	3.1	4.8	43.7	5.3	0.6
1988	M	18.1	12.5	11.3	2.8	5.6	41.6	5.5	2.6
1991	N	21.9	8.5	9.1	7.1	3.4	37.7	4.5	7.7
1991	C	23.2	11.0	10.8	7.0	3.1	38.3	4.8	1.7
1991	M	22.2	11.2	9.6	5.8	3.6	36.6	4.8	6.3
1994	N	22.4	7.7	7.2	4.1	5.0	45.3	6.2	2.2
1994	C	20.2	9.4	7.4	3.7	4.6	45.5	6.0	3.1
1994	M	20.2	10.1	6.9	3.2	5.3	43.4	6.0	4.9

Party names: M = Conservatives; C = Center Party; F = People's Party; K = Christian Democrats; G = Green Party; S = Social Democrats; V = Leftist Party; X = Other. Party support in percent of all valid votes. The local elections were held on the same dates as the national elections.

the feedback model is superior to the swing model at lower aggregate levels than the national level.

The Swing Model

The percentage of *national politics support* for a party at local election no. t is denoted P_t, while *local politics support* for the same party at the same time is denoted Q_t. Please note that in the comparative analysis of the three Scandinavian countries, local politics support is not the support for the party in a local county or municipality, but the aggregated national result across all local units at either the county or the municipal election.

The *national politics swing* is called (lower case) p_t, and it is simply computed by subtracting the old national support from the new national support between two elections:

(1) $p_t = P_t - P_{t-1}$.

Similarly, the local politics swing is

(2) $q_t = Q_t - Q_{t-1}$.

The local politics swing can be either the swing at county or at municipal elections.

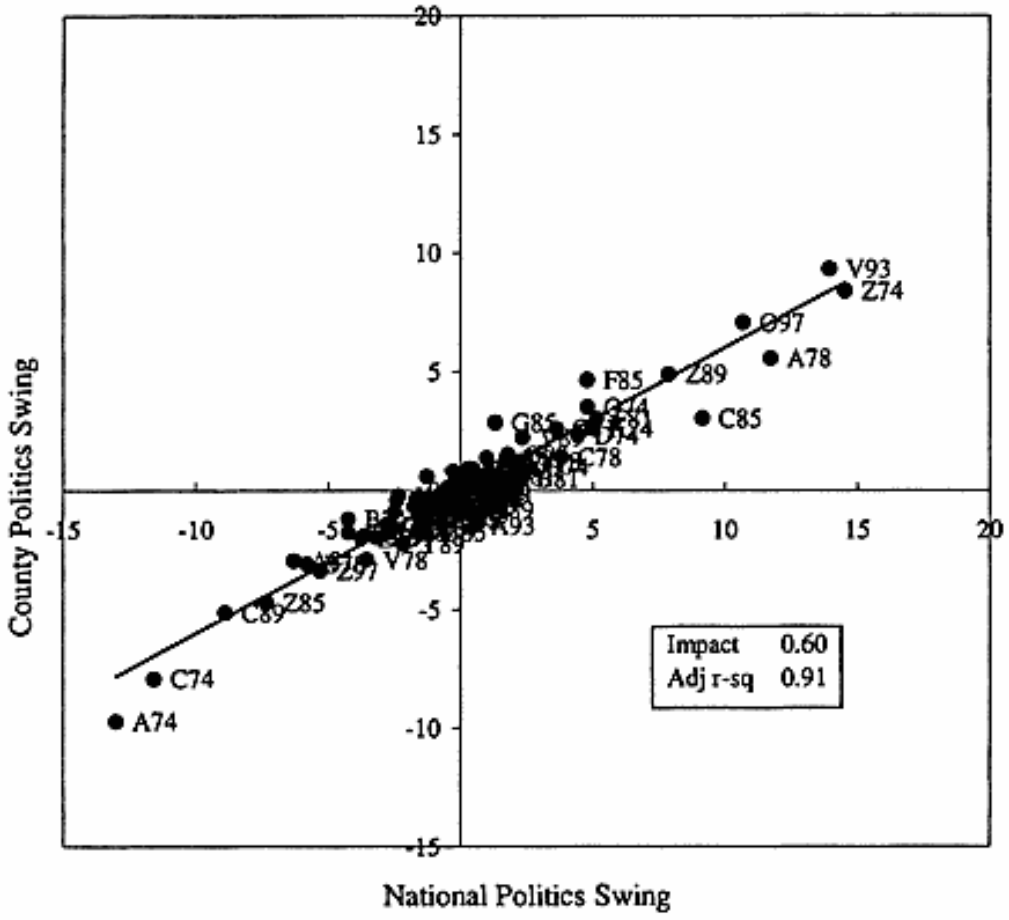
The *swing model* is the simple linear regression model with intercept forced to zero

(3) $q_t = ap_t + e_t$

which means that the local politics swing is proportional to the national swing with the multiplication factor a, also called the *national impact* on the local election. As will be discussed in more detail below, the term hints that the causal direction is supposed to go from national to local politics. If, for example, impact a is 0.5 then the local politics swing is only half the size of the national politics swing. e_t is a random "error" component with zero expectation, accounting for the deviations from exact proportionality. The coefficient a is estimated with the ordinary least square method.

In Figure 1, the national politics swing for all the parties at all election periods in Denmark from 1970 to 1997 is indicated on the horizontal axis, while the county politics swing is indicated on the vertical axis. A party letter (taken from Table 1) and the year of the new election denote a certain party in a certain election period. For example the point denoted by "A74" in the lower left part of the scattergram indicates that from 1970 to 1974, the Social Democrats lost about 13 percent in national support and about 10 percent in municipal support (which can also be inferred from Table 1). If the swing model is valid, then most points should be close to a straight line going through the origin of the coordinate system. The box in the lower right part of the figure shows that the average impact across all election periods and across all parties is 0.60 (the slope of the line is 0.60), and the coefficient of determination, called r-square (adjusted), is 0.91. This means that 91 percent of the variation in local swing across all election periods and across all parties can be explained by the national swing. The r-square value can also be interpreted as the degree of uniformity of the national impact on municipal elections across all election periods and parties.

Figure 1. Denmark: County Politics Swing by National Politics Swing 1970–1997.

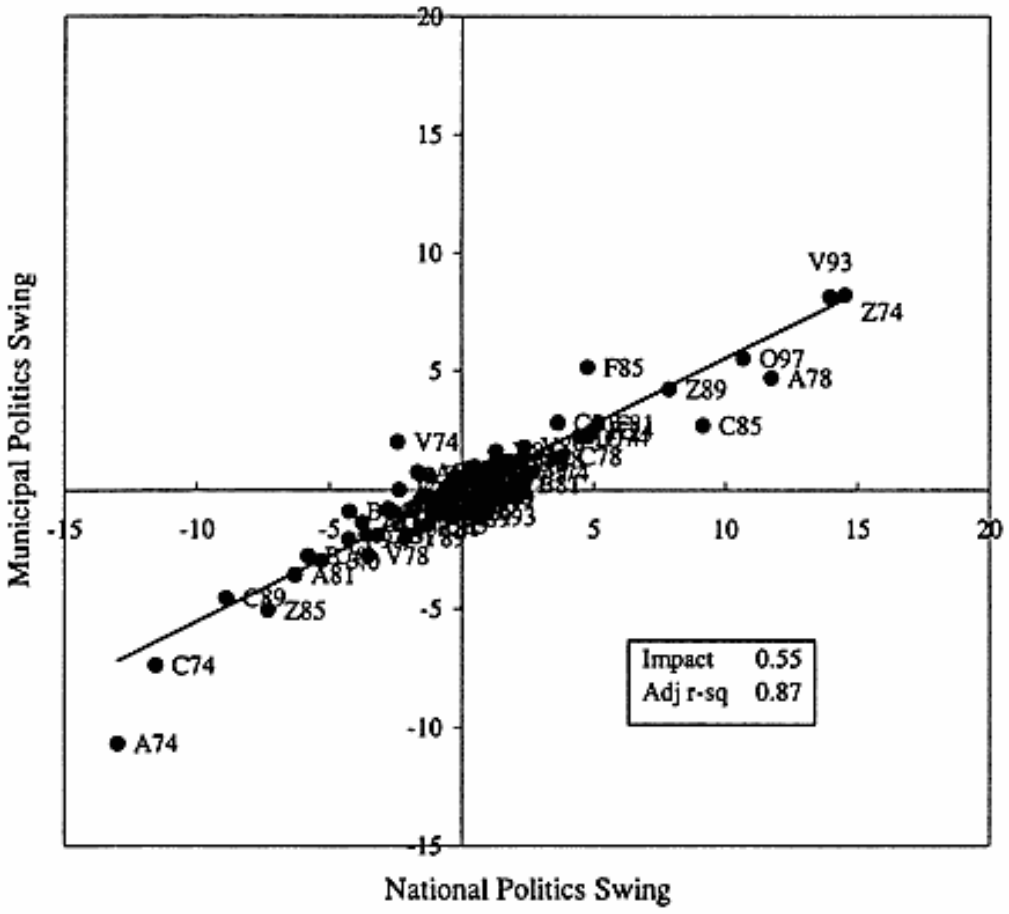


Compared to other results in empirical social research, the r-square value of 0.91 is high. Actually, the fit of the model is so good that the swing model in Denmark can compete with – and often beat – public opinion polls asking people about their voting intention at local elections in predicting the local election outcome at the national level.[1]

Figure 2 shows the national impact on municipal elections in Denmark with the same kind of scattergram as Figure 1. The national impact is a bit lower than county elections (0.55) and so is the impact uniformity (0.87). The explanation why the national impact on municipal elections is significantly lower than in county elections is probably that Danish voters consider county politics less important than municipal politics. The voters are probably responding to national politics to a higher degree at county elections than at municipal elections.

Figures 3 and 4 show the national impact on local elections in Norway 1967–95 (county elections only since 1975). It is interesting to note that the

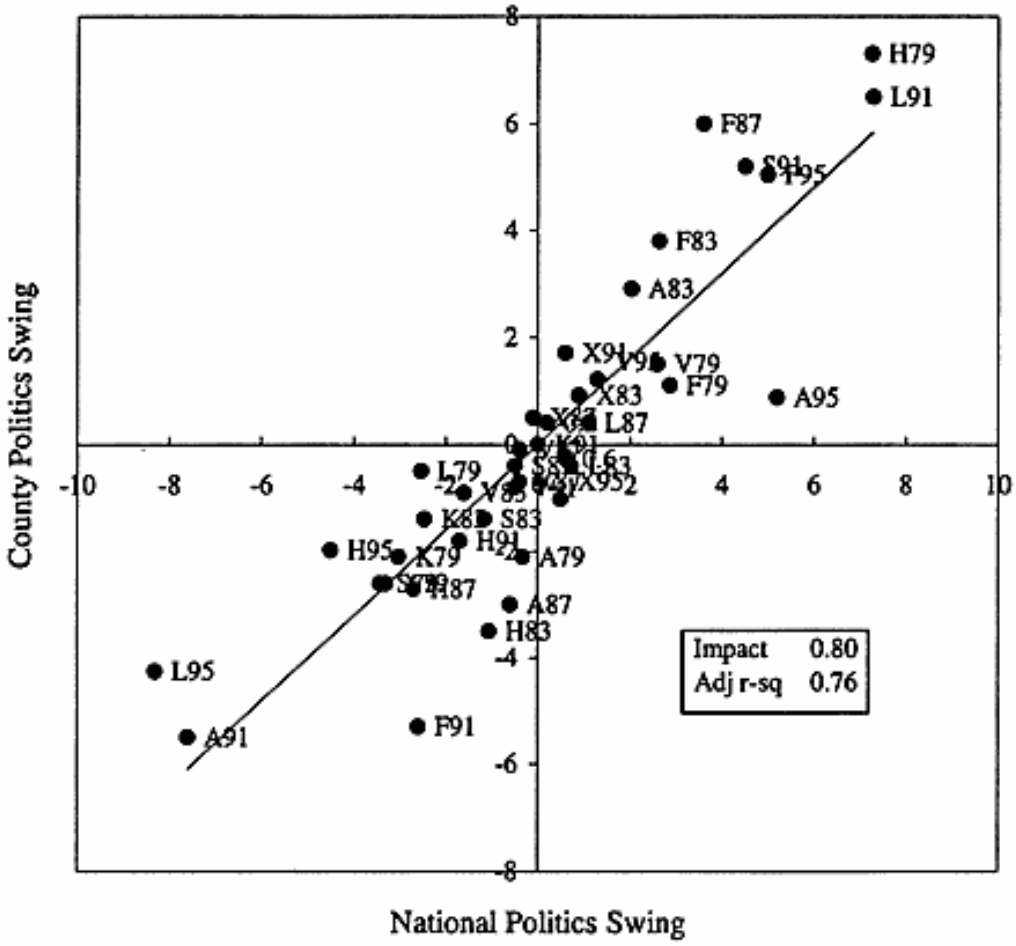
Figure 2. Denmark: Municipal Politics Swing by National Politics Swing 1970–1997.



impact on both kinds of local elections is considerably higher than in Denmark. This finding is in accordance with the assumption that local politics is less salient to Norwegian than to Danish voters. In practice, local authorities in Norway have no possibilities to decide tax revenues, and the level of government grants to be transferred to the local level is determined by central authorities (Hansen 1994, 8–11). The high national impact on local elections in Norway means that the change in national party support is highly reflected at local elections. This does not mean that there are no deviations from the national trend in the individual constituencies, only that the average local politics swing has about the same magnitude as the national politics swing (cf. Gitlesen & Rommetvedt 1994, 169–75).

An outlier A95 appears in both Figure 3 and Figure 4. It indicates that the considerable gain of the Norwegian Labor Party in national politics support was much larger than the local politics swing. According to Rommetvedt (1996), the polls from before the local elections in 1995 are problematic to

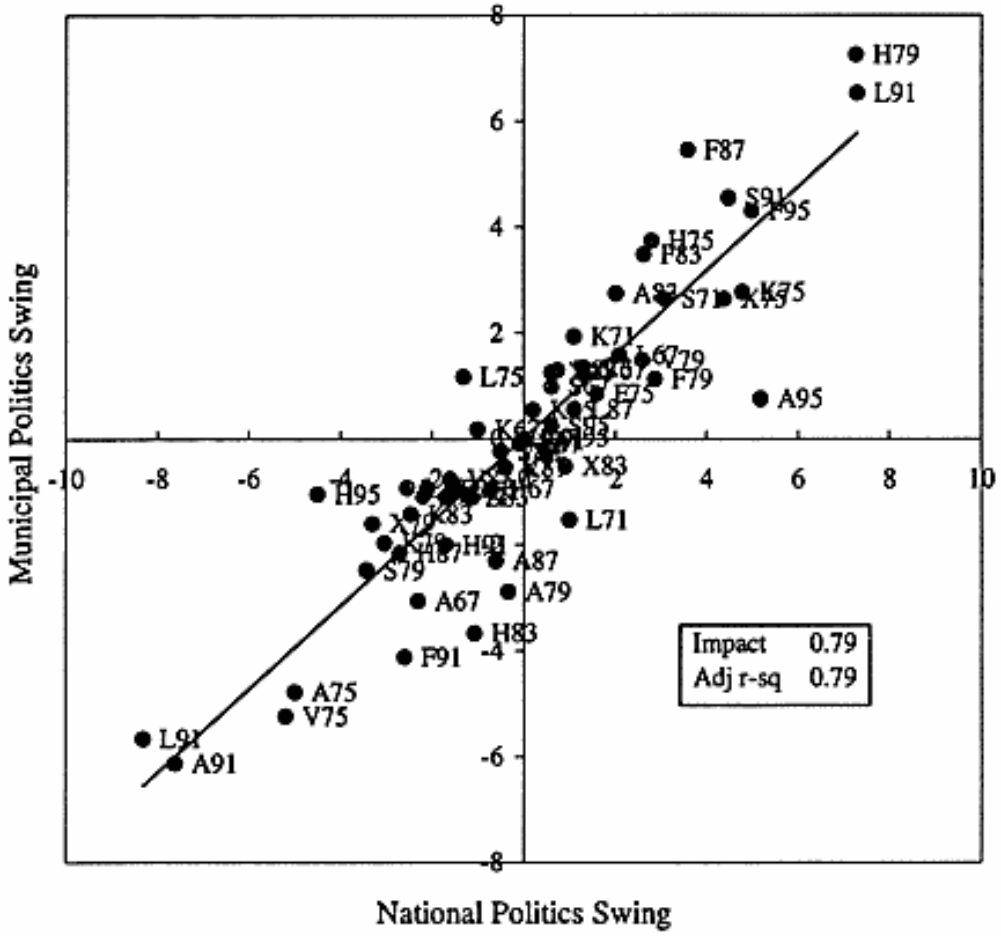
Figure 3. Norway: County Politics Swing by National Politics Swing 1975–1995.



use because of a heated national debate about immigrants and the role of the Progress Party a few days before the election. For this reason, I am using Rommetvedt's adjustment of the polls for 1995 (ibid.), but it might overestimate the support for the Labor Party "if a parliamentary election were to be held."

Because of the synchronism of national and local elections in Sweden, one should expect at least the same magnitude of the national impact on local elections as in Norway. According to Figures 5 and 6, the national impact on local elections is slightly lower, but this has a simple explanation. In 1991, the new party New Democracy had a successful national election, but it only stood in very few counties. This explains the poor performance in the 1991 county elections of "Other parties," which includes New Democracy. In Figure 5, the outlier X91 shows the low increase for other parties in the 1991 county elections. In 1994, New Democracy participated in more counties, and could thus get more votes in the counties in spite of the failure at the national

Figure 4. Norway: Municipal Swing by National Politics Swing 1963–1995.



election as indicated by the outlier X94 in Figure 5. New Democracy participated more in the municipal elections in 1991, which results in less extreme outliers in Figure 6. If X91 and X94 are excluded from the regression analysis of the Swedish data, the impact is increased from 0.78 to 0.90 at the county elections and from 0.77 to 0.83 at the municipal elections. Further, the adjusted r-square is improved from 0.77 to 0.90 at the county elections and from 0.89 to 0.91 at the municipal elections. This example shows the importance of investigating the party swing at the local level, and the preliminary conclusion must be that the impact of national politics on local elections is highest in Sweden. The relative independence between local and national elections is discussed in Håkansson (1992, 73–98).

Table 4 summarizes the results from applying the swing model to the three countries.

The last column in Table 4 shows the standard deviation of the random component in equation 3, which is the highest in Norway. Together with the

Figure 5. Sweden: County Swing by National Politics Swing 1971–1994.

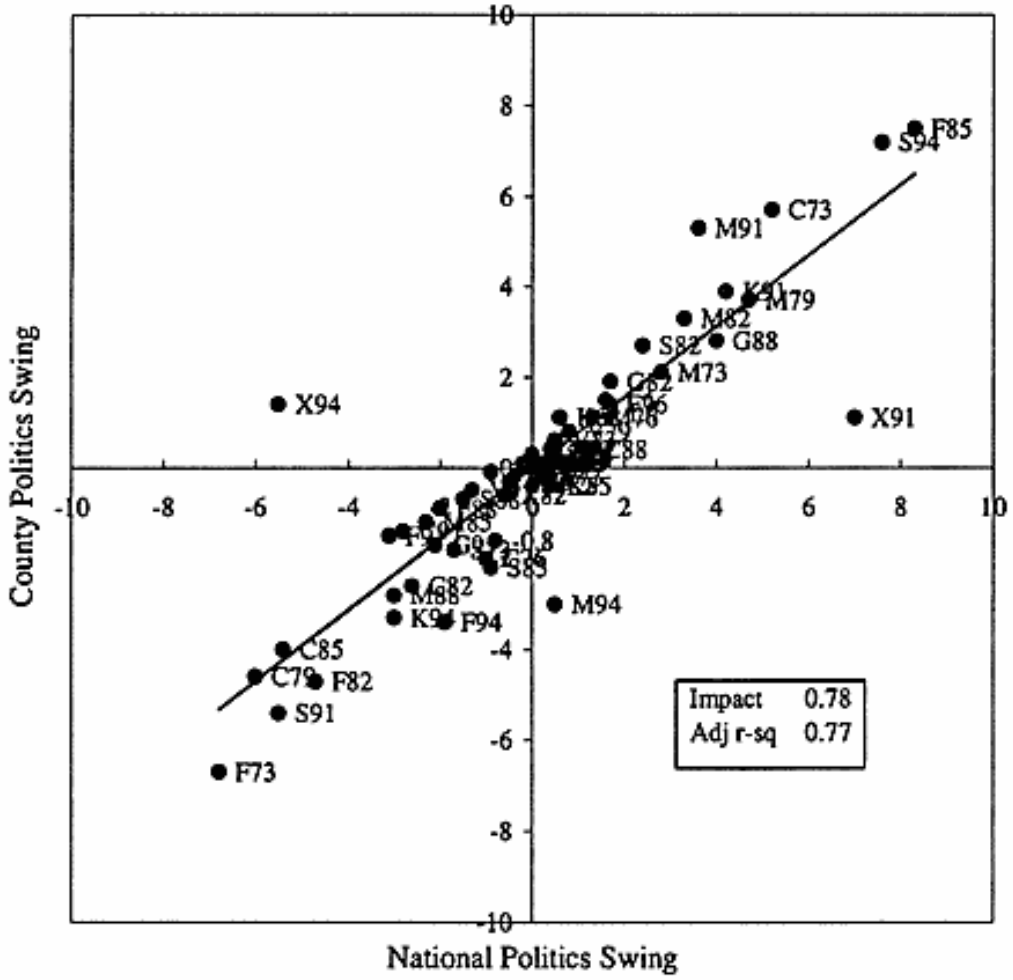
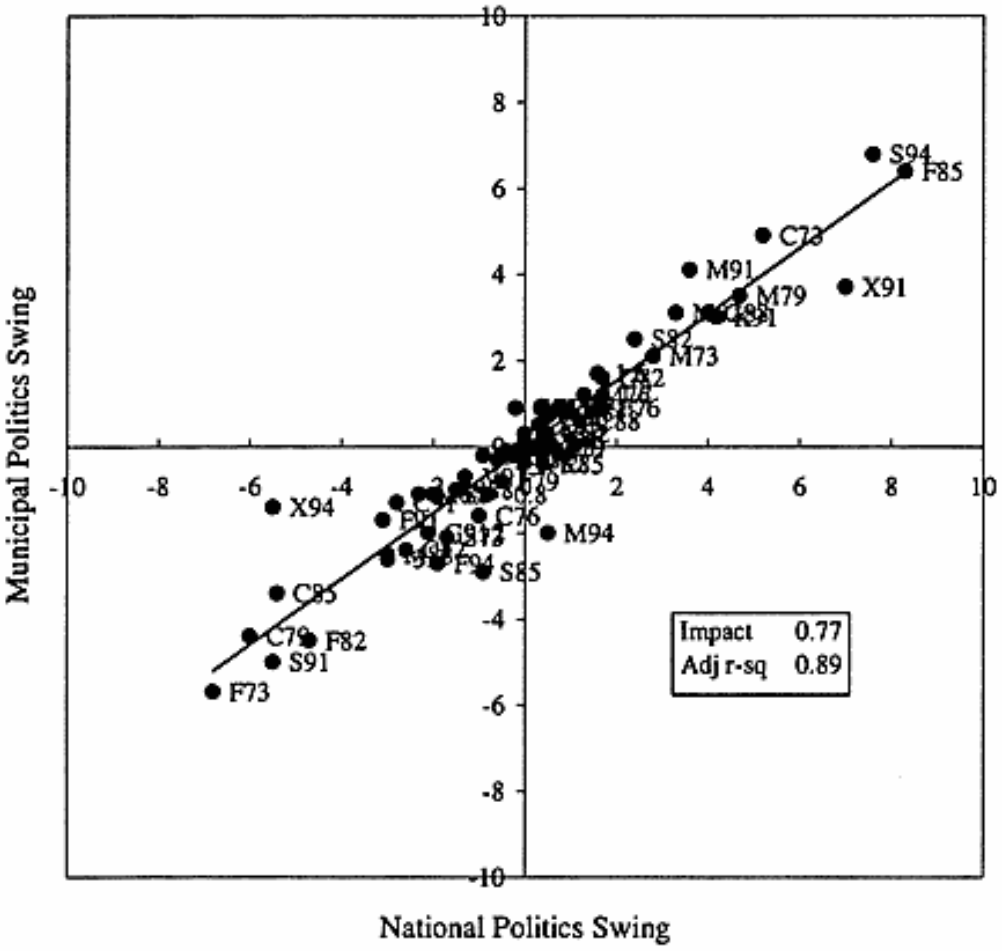


Table 4. Estimates of the Swing Model for National Impact on Local Elections at the National Level

	Election	National Impact: a	Adjusted r-square	SD of random component
Denmark	County	0.60 (0.02)	0.91	0.71
	Municipal	0.55 (0.02)	0.87	0.82
Norway	County	0.80 (0.07)	0.76	1.42
	Municipal	0.79 (0.05)	0.79	1.16
Sweden	County	0.78 (0.05)	0.77	1.23
	Municipal	0.77 (0.03)	0.89	0.77

Note: Standard error in brackets.

Figure 6. Sweden: Municipal Swing by National Politics Swing 1971–1994.



lower values of r-square in Norway, this indicates that the local swing is less predictable in Norway than in the other two countries.

Causal Interpretation of the Swing Model

The strong tendency that the swing at local elections is proportional to the national politics swing in all three Scandinavian countries was loosely interpreted as a causal impact from national to local politics. However, a strong correlation between two variables that are measured at the same time is only an indication of a possible causal relation between the two variables, and it does not tell us anything about the direction of causality. Further, the correlation between the two kinds of electoral swing might just as well be caused by a third common cause. And this will actually be my argument.

An important requirement within non-experimental social research for making causal inference is a convincing theory. I will plead for such a theory using the distinction between latent and manifest variables known from Structural Equation Models (e.g., Bollen 1989). The manifest variables are simply the national politics swing and local politics swing presented above. The latent variables that are not directly measured in this study are termed *national image change* and *local image change*. The national image change of a party is supposed to be caused by national events, especially associated with national government, parliament and national party leaders, while the local image of the party is supposed to be caused by local events associated with local government and local politicians.

My theoretical model for the relation between these four variables, called the model for direct national effect on local elections, is presented in Figure 7.

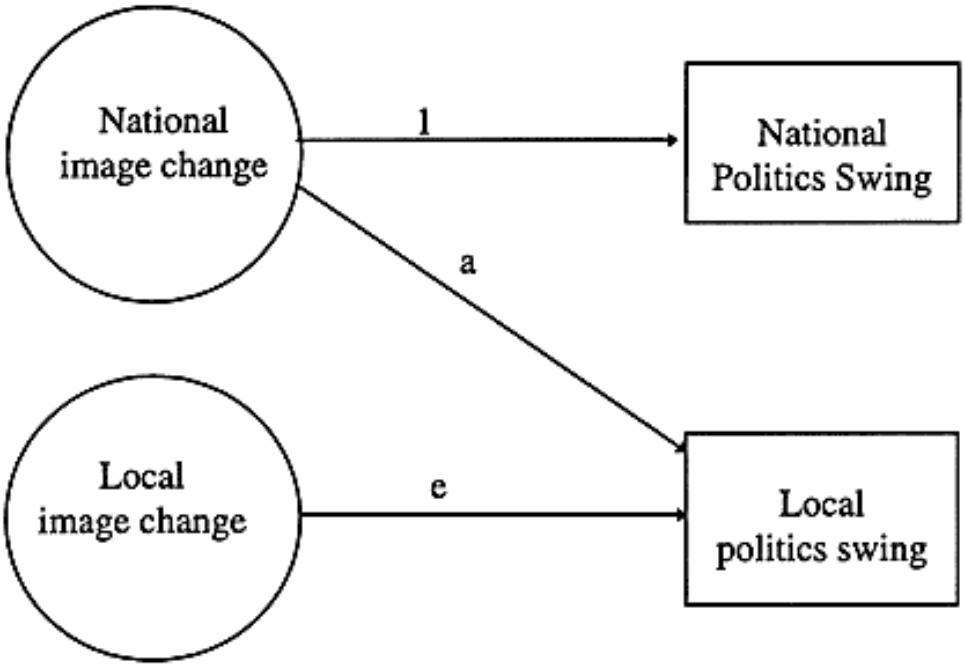
According to Figure 7, the national image change of the party fully determines (and is measured in the same units as) the national politics electoral swing and also directly influences the local politics electoral swing with the impact a. The influence of local politics on electoral behavior is supposed to be independent of national politics and is thus a random component e. As we shall see, this model is much more interesting at the local county or municipal level, where the random component can represent events in local units occurring independently of national politics. My argument for the assumption of direct national impact on local election results is that many voters are simply not very interested in local politics and thus vote like they would do in national elections (Mouritzen 1997).

An alternative to a model of direct national impact on local election results would be a model with an indirect impact from national image change to local politics swing via local image change. However, the strong correlation between the two manifest variables could only occur if the change in national image very strongly influenced the local image change. My argument against this scenario is that I find it unlikely that success or failure of a party in national politics would nearly always be automatically accompanied by a similar local image change. I find it even more unlikely that the causal direction could be from local image change to national image change, since the local politics swing is less than the national politics swing at the national level.

The Feedback Model

Although the fit of the swing model is remarkable, the model can be criticized from a theoretical point of view. Fortunately, this criticism leads to an idea for modification of the swing model that actually secures an even better fit to the data in Tables 1–3.

Figure 7. Theoretical Swing Model for Direct National Impact on Local Elections.



The argument goes as follows: The swing model is a model for electoral dynamics, but the dynamics predicted by the model are not in accordance with what one should expect about a social system. Especially in the long run, the swing model would lead to random drift of the local politics support of a party in relation to the national politics support of the same party with the result that the two kinds of support became very different.

Since we should expect a minimum of coordination between national and local politics, it is straightforward to extend the swing model with a certain amount of convergence between national politics and local politics support. The *local politics deviation* is defined by

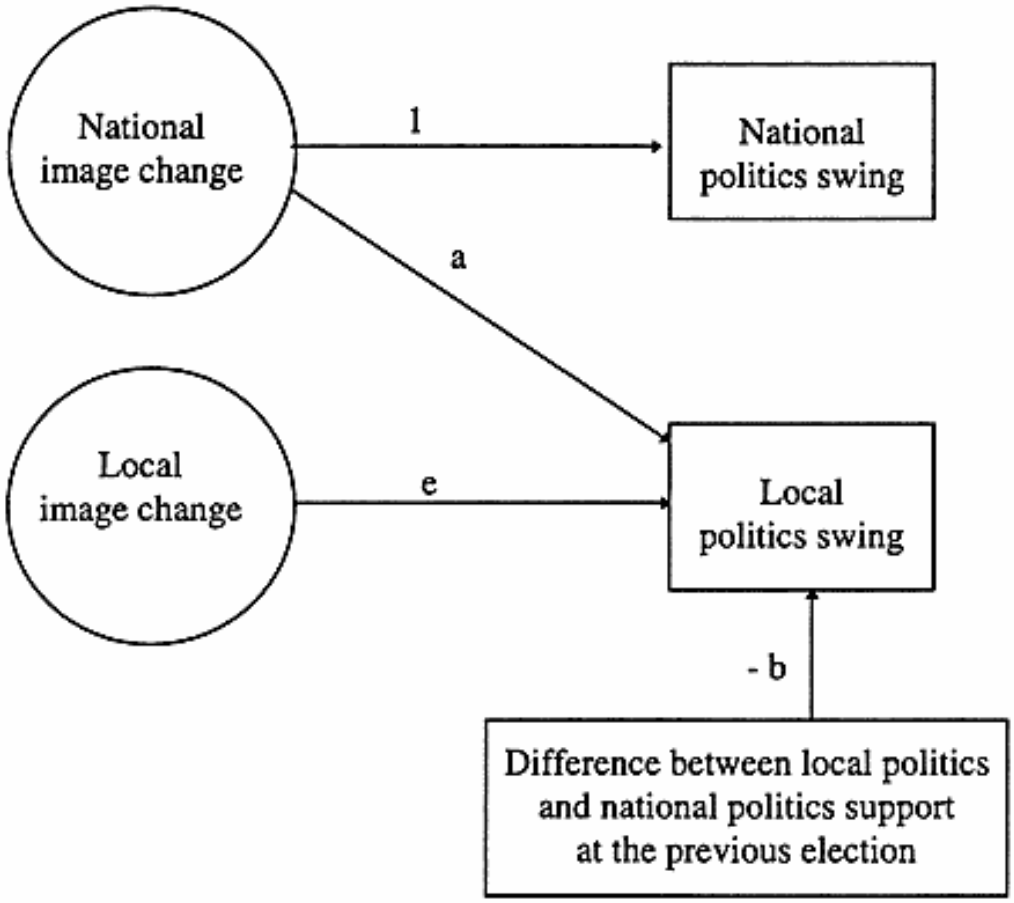
$$(4) \quad d_t = Q_t - P_t$$

i.e., the difference between the local politics support and the national politics support for a certain political party. One can introduce a feedback loop between the two kinds of elections by adding a term to equation (3) that is a negative proportion of the previous local deviation and thus decreases the difference between national and local elections, created by previous random drifts from the impact of the random component e. Hence, the *feedback model* is

$$(5) \quad q_t = ap_t - bd_{t-1} + e_t$$

where b is termed *the feedback force*. From a theoretical point of view, this

Figure 8. Theoretical Feedback Model for Direct National Impact on Local Elections.



model is more satisfactory than the swing model, since it describes the dialectic between the perpetual creation of local politics deviations by the random component (created by unpredictable local success stories and failures of the individual parties) and the curbing of these deviations by the feedback between national and local politics. The coefficients a and b are estimated with the ordinary least square method. The causal interpretation is pictured as the theoretical feedback model in Figure 8.

The theoretical model in Figure 8 is almost the same as in Figure 7, except that the negative feedback loop from the distance between the local politics support and the national politics support is included.

The model has been tested on the data in Tables 1–3 by multiple linear regression, and the results are shown in Table 5.

The results of the feedback model seem quite convincing. The overall fit of the model computed by the R-square value is slightly improved compared to the results of the swing model in Table 4, and the estimates of national impact

Table 5. Estimates of the Feedback Model for National Impact on Local Elections at the National Level

	Election	National Impact: a	Feedback force: b	Adjusted Rf-square	SD of random component
Denmark	County	0.62 (0.02)	0.15 (0.03)	0.93	0.65
	Municipal	0.57 (0.02)	0.11 (0.03)	0.89	0.78
Norway	County	0.84 (0.06)	0.52 (0.18)	0.79	1.31
	Municipal	0.80 (0.04)	0.41 (0.11)	0.83	1.06
Sweden	County	0.82 (0.03)	0.76 (0.13)	0.85	1.96
	Municipal	0.79 (0.03)	0.21 (0.09)	0.89	0.74

Note: Standard error in brackets.

are slightly inflated. More interestingly, the estimates of the feedback force b are significant. As expected, the feedback force is strong in Norway and Sweden and weak in Denmark, and in all countries the feedback force is stronger in county elections than in municipal elections where national politics has less importance.

The only puzzle is that in Sweden the feedback force is relatively low at municipal elections. One explanation could be that the variation in local deviations from the more simple swing model at the national level in Sweden is so low that it is difficult to estimate the actual size of the feedback force. Besides the new insight gained with the feedback model, it also procures a slightly better fit than the swing model in all three countries, and it thus enhances the quality of the prediction of the outcome of local elections.

Analysis at the Local Level

In this section, a special preliminary analysis is made at the municipal level in Denmark for the two local election periods 1985–89 and 1989–93. This is done to investigate the usefulness of the feedback model at this level. The model is more interesting at the municipal level, since the random component can be interpreted as the special effect of local politics in each municipality, and for the same reason the variance of this component is larger than at the national level. Further, at the local level the feedback force is more important than at the aggregate national level in diminishing the difference between local politics support and national politics support.

One problem with this analysis is that we do not have reliable public opinion polls about the national politics support for the parties in each municipality. The problem is solved by first estimating this support by linear interpolations between the results of national elections before and after the

local elections in each municipality and then adjusting these results by proportional fitting until they sum up to the results of public opinion polls about national politics party support for the whole country at about the same time as the local elections.

Another problem is that the *linear* feedback model (5) shows shortcomings at the municipal level, since it sometimes predicts negative values of the local politics support. This problem is cured by substituting the proportions P and Q with the logit transformation of these proportions defined by

$$(6) \qquad \begin{aligned} P_t &\leftarrow \ln[P_t/(1 - P_t)] \\ Q_t &\leftarrow \ln[Q_t/(1 - Q_t)] \end{aligned}$$

and letting all equations above deal with these logit-transformed proportions instead of the proportions themselves. Since the possible range of logits is from minus to plus infinite, predicted negative values are no longer a problem. However, because the relations between the original proportions now become non-linear, the ordinary least square method for estimating the national impact a and the feedback force b is no longer appropriate. Instead, a and b are estimated as those values of a and b that minimize the *error percentage* across units between the actual and the predicted local election results.[2]

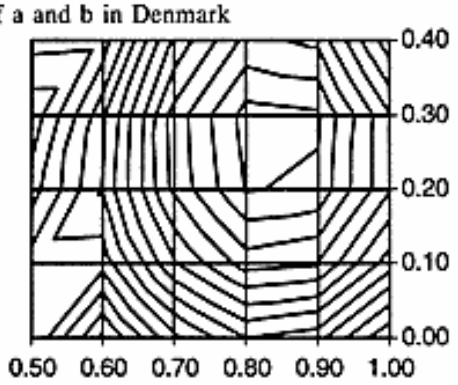
Table 6 displays the error percentages in numbers as well as surface graphs for different values of a and b at the municipal level for both county elections and municipal elections in the two election periods. The recorded error percentages show that a stable minimum at about 6–7 percent is obtained for values of national impact a at about 0.8 and values of feedback force b at about 0.3. Because the model is a non-linear version of the model that was used at the national level, it can be difficult to compare with estimates of a and b at the national level, but at least Table 6 shows that the feedback component of the model in the Danish case is much more important at the municipal level than at the national level. If my assumption about the greater saliency of local politics in Denmark than in Norway and Sweden is correct, the feedback force at the local level should be even higher in these countries than in Denmark.

In a comment to the 1993 local election in Denmark, Nielsen (1994) concludes that the swing model poorly describes the variations between municipalities for a single party. This is no wonder, because the prevalence of uniform swing for a single party at the national elections as discussed in the beginning of this article is often so strong that it results in very little variation across units of the independent variable for this party. For this reason, it is important also to include the variation across parties when estimating a swing model. Even though the swing model performs weakly in describing variation across units, a recent study concludes that the national politics swing in each

Table 6. Error Percentages for Different Values of a and b in Denmark

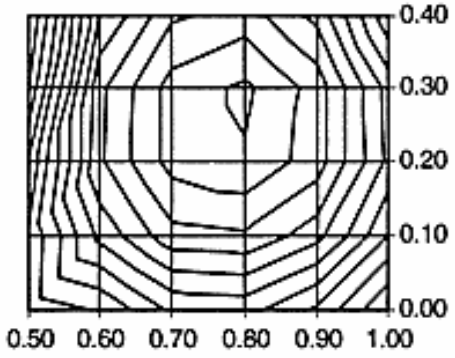
(a) Error percentage predicting county elections 1989

b\a	0.50	0.60	0.70	0.80	0.90	1.00
0.00	7.30	7.72	7.33	7.10	7.16	7.49
0.10	7.35	7.36	6.91	6.65	6.69	7.05
0.20	7.55	7.19	6.68	6.39	6.42	6.79
0.30	7.67	7.23	6.66	6.36	6.38	6.79
0.40	7.46	7.47	6.88	6.57	6.62	7.06



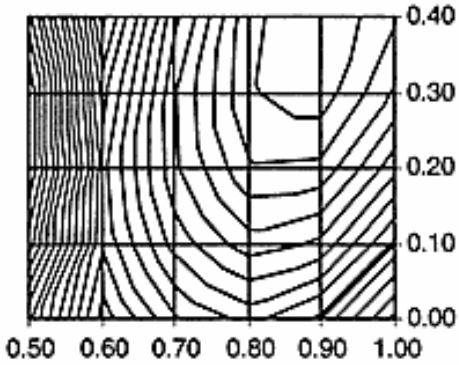
(b) Error percentage predicting municipal elections 1989

b\a	0.50	0.60	0.70	0.80	0.90	1.00
0.00	7.96	7.89	7.68	7.66	7.82	8.10
0.10	7.98	7.57	7.33	7.31	7.46	7.80
0.20	8.09	7.41	7.16	7.11	7.25	7.63
0.30	8.30	7.42	7.16	7.08	7.24	7.64
0.40	8.40	7.60	7.32	7.25	7.43	7.88



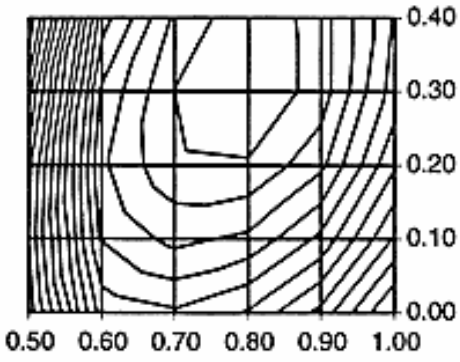
(c) Error percentage predicting county elections 1993

b\a	0.50	0.60	0.70	0.80	0.90	1.00
0.00	7.49	8.25	7.91	7.76	7.92	8.33
0.10	7.05	8.08	7.66	7.44	7.52	7.92
0.20	6.79	8.04	7.52	7.21	7.22	7.56
0.30	6.79	8.14	7.51	7.11	7.04	7.31
0.40	7.06	8.33	7.63	7.13	7.00	7.18



(d) Error percentage predicting municipal elections 1993

b\a	0.50	0.60	0.70	0.80	0.90	1.00
0.00	8.77	7.96	7.91	8.01	8.23	8.61
0.10	8.70	7.79	7.67	7.72	7.92	8.31
0.20	8.76	7.72	7.52	7.51	7.67	8.08
0.30	8.94	7.78	7.50	7.40	7.54	7.94
0.40	9.22	7.95	7.59	7.42	7.54	7.90



unit is in fact the single most important factor in describing this variation (Frandsen 1998).

One should think that it would be more appropriate to analyze county elections at the county level, but with the limited Danish data it actually turns out that the estimation of a and b is more stable at the municipal level, even for county elections. Further, the prediction of the results of the county elections is improved by aggregating predictions at the lower municipal level to the county level, compared to predicting with the feedback model directly at the county level.[3] This finding actually raises the question about what is the best possible level for analyzing the interaction between national and local politics. Conceivably, a still better prediction of local elections could be obtained by aggregating predictions at even lower levels.

Conclusion

The conclusion from the analysis of electoral results at the national level is that, although the swing model to a high degree can predict the outcome of local elections by the swing at the national elections, the model is an unsatisfactory instrument for understanding the long-term dynamics of the electoral process. Better insight and a slightly better prediction is offered by the feedback model, which formulates the dialectic between the creation of local deviations and the subsequent curbing of these deviations by the interaction between national and local politics.

The results of the analysis at the national level suggest that the overall impact of national politics on local elections is stronger in Norway and Sweden. In the case of Norway, the explanation could be that local autonomy is lower than in Denmark. In the case of Sweden, it is more difficult to say if this is caused by lower autonomy than in Denmark or simply by the fact that the synchronism of national and local elections obscures the importance of local politics.

The real test of the feedback model is to apply it to electoral data at a lower aggregate level, e.g., municipalities. The analysis of a limited set of Danish data at the municipal level indicates that the feedback force from national politics on local elections is stronger at this level than it appeared at the national level. If the assumption about the varying degree of local autonomy in the different Scandinavian countries is correct, one should expect an even higher feedback force at the municipal level in Norway and Sweden. An important aim for a more comprehensive comparative study would be to test this hypothesis with data on the municipal level from all Scandinavian countries.

ACKNOWLEDGMENTS

I am indebted to Hilmar Rommetvedt and Anders Håkansson for providing me with data from Norway and Sweden and for stimulating (and sometimes heated) discussions about possible interpretations of the findings.

NOTES

1. This was the case at the last two local elections in Denmark in 1993 and 1997, when the author published local election forecasts in the daily newspaper *Det Fri Aktuelt* in 1993 and in the newsletter *Mandag Morgen* in 1997.
2. The error percentage in a local unit is defined as half of the sum of the absolute deviations between the actual percentage and the predicted percentage voting for each party at the new local election in the unit, and it varies from 0 to 100 percent. The error percentage across units is the average error percentage across units weighted with the number of voters in each unit. Other measures for the fit to actual election results could have been chosen, but the error percentage is considered to be a reasonably robust measure in a situation where fairly large local deviations from the predicted result sometimes occur because of the impact of local politics.
3. This method was used by the author in making forecasts in the individual county local elections in 1997 published in the newsletter *Mandag Morgen*, no. 38, 3. November 1997. In many cases, these forecasts were closer to the actual election results than local public opinion polls.

REFERENCES

Bollen, K. A. 1989. *Structural Equations with Latent Variables*. New York: Wiley.

Frandsen, A. G. 1998. *Landspolitik eller lokalpolitik? Et studie af danske kommunalvalg*. Ph.D. thesis. Department of Political Science, Odense University.

Giljam, M. & Holmberg, S. 1993. *Väljarna inför 90-talet*. Stockholm: Norstedts Juridik.

Gitlesen, P. G. & Rommetvedt, H. 1994. *Lokalvalg – i møtet mellom riks- og lokal-politik*. Oslo: Kommuneforlaget.

Hansen, T. 1994. "Local Elections and Local Government Performance," *Scandinavian Political Studies* 17, 1–30.

Håkansson, A. 1992. *Konsten att vinna ett val: En studie af fram- och tillbakagångar för socialdemokraterna i kommunalvalet 1988*. Lund: Lund Political Studies 71.

Mouritzen, P. E. 1997. "Den personlige stemmeafgivning," in Jensen, R. B. & Elklit, J., eds., *Kommunalvalg*. Odense: Odense Universitetsforlag.

Nielsen, H. J. 1994. "Tendenser i kommunalvalget 1993," *Økonomi og politik* 67, 17–31.

Rommetvedt, H. 1996. "La det svinge! En analyse av kommune- og fylketingsvalget 1995," in Malmø, M., ed., *Politisk Årbok 1996*. Oslo: Andante Forlag.

Thomsen, S. R. 1986. "Kommunale valg 1970-85: Landspolitisering eller lokalpolitisering?," in Elklit, J. & Tonsgaard, O., eds., *Valg og vælgeradfærd: Studier i dansk politik*. Århus: Politica.

Thomsen, S. R. 1992. "National Impact on Local Elections: Blowing in the Wind," in Gundelach, P. & Siune, K., eds., *From Voters to Participants*. Aarhus: Politica.

Thomsen, S. R. 1993. "Valgvinden igen," Paper, for Arbejdsgruppen om lokalvalg, Nordisk Forbund for Statskundskab, Oslo. Århus: The Institute of Political Science.