Welfare State Issues in the Norwegian 1985 Election: Evidence from Aggregate and Survey Data[1]

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The Norwegian parliamentary election of 1985 was a partial victory for Labour as the party increased the share of the vote by 3.6 percentage points (from 37.2 percent to 40.8 percent) and won five additional seats in the *Storting*. However, the increase was not large enough to provide the party, traditionally supported by the Socialist Left party, with a governing majority. This was due to the working of the electoral system where especially the Christian People's party and the Centre party benefited from 'joint' electoral lists, which made it possible to combine their total number of votes in order to maximize the number of seats. The dismal results of the Liberal party (*Venstre*), not being able to have any representatives elected at all, did not help Labour either. The Liberals had pledged parliamentary support to a socialist government, but the move was not well received among the voters. For the first time in 101 years of history, the Liberals failed in their attempt to be represented in the national assembly.

The outcome of the election made the bourgeois coalition government dependent on support from the right-wing populist Progressive party, and the scene was set for an unstable parliamentary situation. In 1986 Labour resumed power as a minority government. The breakdown of the bourgeois

coalition will not command our attention here as we shall focus on the immediate outcome of the election and its interpretations.

In both popular and scholarly comments on the results of the election the dominant interpretation was that Labour had been able to direct the attention of the voters to the unresolved issues of the welfare state, particularly in the health-sector and in care for the elderly. Listhaug (1986) argues that the welfare state issues and problems probably became enlarged against the background of Norway's favourable economic condition as the country was running a huge surplus on the balance-of-payments with other countries. The economic surplus, which was caused primarily by the high price on crude oil, made the voters receptive to arguments that the government should use more money on welfare and social programmes. The welfare issues might also have been linked to a concern for the growth of new inequality as the oil boom and the frenzied activity in the financial markets created fortunes for the few.

The new inequality also displayed a regional dimension as Northern Norway, in particular, and areas in the inner East and in Trøndelag, did not benefit from the oil activities in the southern parts of the country. Another element that might have an impact on the issue structure at the election was the experience of the rise of unemployment after 1981. Although unemployment had peaked in 1984 (and had never been above 5 percent of the work force), and was declining steadily in the months before the election, it could have left an imprint on the voters that Norway might be vulnerable to mass unemployment. In short, what we suggest here is that the emergence of the welfare state issues must be understood against the background of the recent economic experiences of Norway, and that these issues were part of a wider concern for inequality that carried both social and regional aspects.

The latter point is underscored by Valen (1986, 184–185). He gives the regional variations a social policy interpretation, contending that the relatively stronger gains of Labour in the periphery must be accounted for by the weaker economy and the less-developed welfare state in these areas. The purpose of our research is thus twofold: to demonstrate if, and how, welfare state issues accounted for the results of the 1985 election, and to see if regional variations can be explained in terms of social policy and socio-economic inequalities.

Discussions of the impact of regional – and centre–periphery – factors constitute a recurrent theme in Norwegian politics and is conceptually dominating in the classic studies of Rokkan and Valen (Rokkan 1967; Valen & Rokkan 1974). Their analyses are primarily concerned with the political impact of geographical variations in class, religion, and culture. Some of the main hypotheses of these studies are currently being investigated by Ryssevik (1987). The suggestions of Valen (1986), and our

approach here, extend the ecological approach in the Norwegian voting studies to include a set of previously unexplored variables.

Data

Since we have focused on regional variations we have decided to use information from the Commune Data Base of the Norwegian Social Science Data Services. As ecological data have their shortcomings and, in the end, electoral behaviour of the citizens must be accounted for in models with the individual as the primary unit of reference, we will analyse survey data as well. In the concluding part of the paper we shall make some efforts to combine the two types of data.

The Norwegian Programme of Electoral Research was initiated by Stein Rokkan and Henry Valen more than 30 years ago and was from the very start exceptionally comprehensive, including plans to study voting behaviour and political participation from ecological data and sample surveys, community studies of party organization, campaign activities and voter reactions, studies of processes of mass communication, statistical analyses of recruitment of political elites, and of the development of the political parties (Valen and Rokkan 1967).

The Commune Data Base, which is one of the main fruits of the ecological research programme, now holds more than 47,000 variables characterizing Norwegian communes from 1769 to the present. It is from this database we have built a smaller data set to be analysed in the next section, covering all 454 communes.

Aggregate Analysis

Our references to welfare issues, inequality, and socio-economic level have been conspicuously vague, hence the first task is to remedy this. We shall propose a distinction between three broad classes of variables that can be used to categorize Norwegian communes: *Economic level, sociopolitical vulnerability*, and *welfare-state supply*. By economic level we here mean the general development of the economy, income, and urbanization. This is a conventional conceptualization where industrialization, and even more, a strong tertiary sector, high *per capita* income, and urbanization indicate modernization and development. The process whereby modernization is determined is long-term and gradual, and is relatively independent of the cycles of the economy. The same cannot be said about the category of sociopolitical vulnerability where we include those aspects of the commune that will make the inhabitants more dependent on the welfare state. We here include important cyclical variables like unemployment and migration,

Table 1. Independent Variables in the Ecological Analysis.

	Variable	Description
Economic level:	PRIM80	Percent employed in primary sector 1980
	SECO80	Percent employed in secondary sector 1980
	TERT80	Percent employed in tertiary sector 1980
	INCO83	Average income from wages per employed 1983
	DENS80	Population density 1980
	CENT80	Centrality of the commune 1980
Socio-political vulnerability:	UNEM84	Percent average unemployment 1984
	UNEMCH	Change in percent unemployment 1984–81
	DISA83	Percent disabled pensioners 1983
	OVER60	Percent of population above 60 years
	MIGR84	Net percent migration 1984
	MIGRCH	Change in net percent migration 1980–84
Welfare state supply:	HEAL83	Percent employed in public health 1983

and the proportion of the population that is dependent on pensions and welfare. Welfare state supply denotes the degree of access to the welfare state in the commune. As is obvious, a high degree of welfare state supply does not necessarily mean that the relevant institutions are located in the commune, but that the services, like doctors, hospitals, and schools are accessible at a reasonable distance. We have, knowing that it is a less than perfect solution, used the supply in the county (*fylke*) as the indicator such that all communes in a county get the same level of supply. Table 1 gives an overview of the variables that are used to tap the three dimensions.

The conceptualization of the effects of the variables on the vote can be divided into two types, a pure aggregation impact and a contextual effect. For a discussion of some of the theoretical meanings of these terms and analytical questions related to the use of aggregate data, useful information is still to be found in the edited volume by Dogan & Rokkan (1969). By a pure aggregation influence we here mean that communes with a large proportion of a population of some kind will be likely to shift in one direction, as we assume that the individuals making up the category will be more prone to go in the same direction. The most obvious examples of this effect are related to the items tapping unemployment, where we will assume that unemployed persons are most likely to vote for Labour. The contextual effect is relevant for all citizens in a commune as these react politically from now they perceive that their municipality will be affected by the policies of the various political parties. The level of unemployment might also have a contextual effect on employed persons as these will be more

likely to consider unemployment issues if they live in an area with a high level of unemployment.

CENT80 is the only variable that is not derived from individual characteristics as this measure is constructed on the basis of information on the ecological unit. Any influence of CENT80 on the dependent variable should therefore be seen as a contextual effect. For the remaining items both aggregation and contextual effects might be assumed. But for the health support item (HEAL83) and the two migration items (MIGR84 and MIGRCH) it is likely that contextual effects will be more decisive than aggregation effects. Our interpretation of HEAL83 as a supply variable explicitly stresses the contextual interpretation, in that persons in communes with a low ratio of health services (in the *fylke*) are seen as most likely to be influenced by welfare state arguments and, as a consequence, shift to the Labour party in the election.

We should also be aware that the variables can be seen as indicators of latent constructs that we do not measure directly. This is probably more often the case with ecological data than with individual level variables since the aggregate measures normally are collected for administrative purposes in which scholarly considerations of theoretical validity play a minor role.

The time period for the registration of the variables varies as some of the data are from the 1980 census and others are taken from more recent statistical sources. All but three of the variables in Table 1 are expressed in percentage points. INCO83 is measured in *kroner*, DENS80 is registered on a 0–9 scale which measures the percentage of the population of the commune that is living in urban areas (deciles), and CENT80 is a scale from 1–7, which indicates the centrality of the location of the commune, 1 is the least central and 7 is the most centrally located commune. This classification is derived from an elaborate scheme of variables which tap the level of services that the commune can provide, or the commuting distance to communes with a given level of services.

The classification of the independent variables into three groups is based on an *ad hoc* reasoning and it is of interest to see if the empirical analysis is supportive of the classification. To accomplish this we have performed a factor analysis of the 13 variables, and the results are reported in Table 2.

The factor analysis yields five factors with eigenvalues greater than 1 (Kaiser's criterion), explaining 77 percent of the total variance. The first factor is 'Economic level'. All the variables that were grouped under this heading (Table 1) load here, with the exception of SECO80, which loads on Factor 4. It is obvious that the tertiary sector more than the secondary domain of the economy measures the level of modernization. While SECO80 is the only item that loads positively on Factor 4, it is noticeable that TERT80 has a strong negative loading on this factor. In the developmental perspective the tertiary sector is the opposite of the primary

Table 2. Factor Analysis of the Independent Variables. Entries are Factor Loadings from Varimax Rotation. $N = 448$.

	Fac 1	Fac 2	Fac 3	Fac 4	Fac 5
INCO83	.891	−.100	−.030	.035	−.147
DENS80	.823	.083	−.006	.094	−.017
TERT80	.755	.002	−.112	−.597	.055
CENT80	.649	−.293	−.205	.156	.180
PRIM80	−.911	−.060	.114	−.172	−.050
OVER60	−.647	.126	−.022	−.010	.443
UNEM84	−.101	.905	.100	.054	−.117
UNEMCH	.028	.751	.035	.218	.173
DISA83	−.047	.711	.138	−.229	.119
MIGRCH	−.059	−.004	.903	.032	.067
MIGR84	−.126	.306	.824	−.038	−.123
SECO80	.273	.061	−.024	.920	.002
HEAL83	−.009	−.016	−.020	−.011	.932
Eigenvalue	4.07	2.25	1.36	1.30	1.09

domain and signifies the modernization level more directly than does industrialization.

It is also striking that a number of the communes with a strong industrial base have had problems as the old factories have increasingly failed to produce goods at competitive market prices. This has created political demands as both labour and business in these areas have appealed to government for subsidies and industrial restructuring programmes. It might therefore also be politically useful to treat this indicator separately from the other modernization items.

The items tapping Sociopolitical vulnerability, with one exception, load on two separate factors. The two unemployment indicators (UNEM84 and UNEMCH) and DISA83 load on Factor 2 and the two migration variables load on Factor 3. The proportion of older people in the communes (OVER60) is split between Economic development (Factor 1) and Factor 5, on which the single item measuring welfare state supply (HEAL83) loads. This suggests that the aged communes are the less economically developed as well as that there is some matching between the age structure, with the accompanying demand for health services, and the supply of these.

It remains to be seen if this more refined classification of the independent variables is empirically relevant in explaining the movements of voters from 1981 to 1985. With reference to the narrower meaning of welfare state issues it seems reasonable to see Factor 2 and Factor 5 as closest to the core meaning of the concept. However, as the modern state has taken responsibility for almost all 'problems' of society, it is surely difficult to

Table 3. Change in Labour Vote 1981–85. Bivariate Analysis. Percent and Pearson's *r*. $N = 448$–454.[1]

	Low 1	2	3	4	5	6	7	8	9	High 10	r[2]
PRIM80	3.1	4.1	4.7	5.5	4.9	5.7	5.4	6.2	5.5	6.3	.27
SECO80	6.2	5.7	5.1	5.1	5.3	5.2	5.3	4.2	4.7	4.8	−.14
TERT80	6.0	5.5	5.0	5.2	5.2	5.8	5.3	4.9	4.7	3.7	−.19
INCO83	5.0	5.8	5.9	6.5	5.5	5.5	5.1	4.7	4.3	3.3	−.24
DENS80	5.7	6.0	5.1	5.0	5.3	4.6	4.9	4.1	5.2	3.4	−.20
CENT80	6.4	7.2	4.7	4.9	4.1	3.4	3.1	–	–	–	−.49
UNEM84	3.2	3.9	4.0	4.9	4.9	5.2	5.5	5.9	6.3	7.5	.43
UNEMCH	5.1	3.7	4.5	4.4	5.3	4.4	5.5	5.3	6.8	6.3	.22
DISA83	3.4	4.8	4.5	5.3	5.0	4.1	5.0	4.8	7.0	7.5	.34
OVER60	4.9	5.7	5.4	5.2	4.6	5.0	6.1	5.1	5.1	4.1	−.06*
MIGR84	3.7	3.7	4.7	5.0	4.9	5.0	5.2	5.2	6.1	8.0	.37
MIGRCH	4.8	4.9	4.2	4.6	4.5	5.0	5.4	5.1	6.3	6.4	.17
HEAL83	7.4	5.1	3.5	4.6	5.3	5.0	6.9	5.2	4.7	3.6	−.26

* Not statistically significant at the .01-level.
[1] All independent variables except CENT80 are coded in deciles.
[2] Based on raw variable.

argue that neither of the remaining variables should be unrelated to the vote shifts following an election campaign that evoked themes of welfare, inequalities, and socio-economic justice.

We have entertained a number of possible versions of the dependent variable to be investigated. Norwegian politics is normally divided into two main blocs, the socialist parties and the bourgeois, or non-socialist, parties. Within the socialist bloc Labour is dominant with only an average of 5–6 percent of the total vote going to left socialist contenders, mainly the Socialist Left party. Since Labour is so commanding, and, moreover, as the party was responsible for directing the campaign into welfare state issues in 1985, we have chosen the Labour vote 1985 as the dependent variable, while controlling for Labour vote in 1981. The results would not have been much different if we had used socialist bloc vote as the dependent measure.

First we have broken down the dependent variable for each of the 13 independent variables (Table 3). All independent variables are grouped into deciles with the exception of the centrality measure (CENT80) which goes from 1 to 7 (high value indicating centrality).

All but one of the variables are related to change in the Labour vote in the expected direction. The exception is the proportion of aged persons (OVER60) which does not reach the .01-level of significance. The sign for this item is in the wrong direction as we should expect Labour gains to be stronger in communes with the oldest population.
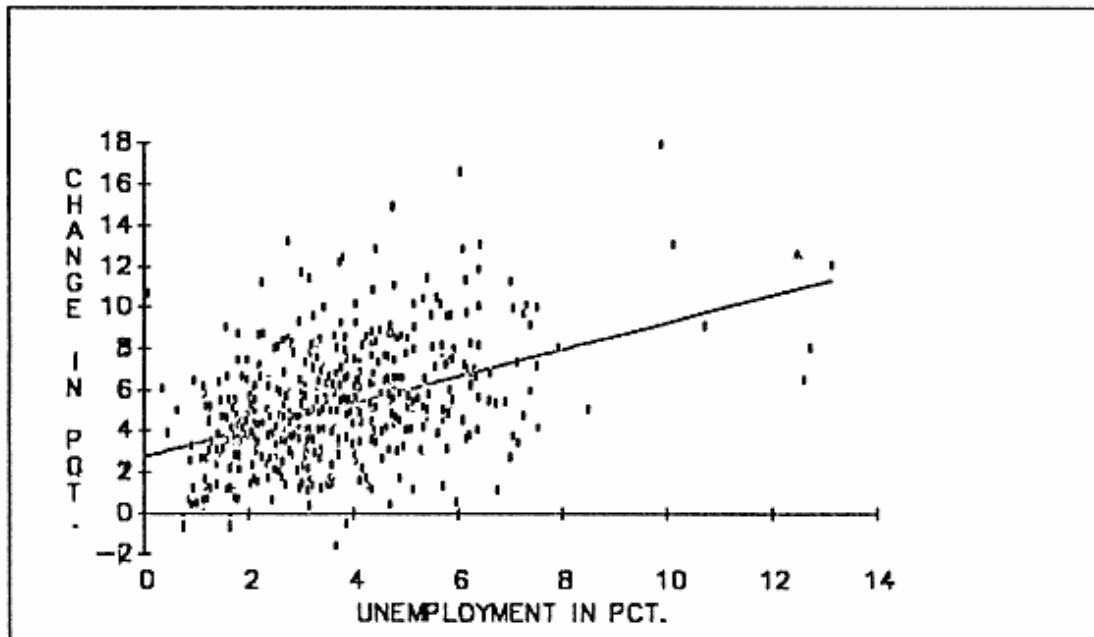
Fig. 1. Change in Labour Vote 1981–85 and Level of Unemployment 1984.[2]

The indicators of economic level are all modestly related to increase in Labour support. It is interesting to see that industrialization is negatively (albeit weakly) connected to Labour gains. This suggests that economic problems which are related to the industrial base are less pervasive than the possible benefits that derive from industrialization, at least as seen in conjunction with primary sector dominance. Of the economic level items the strongest and most consistent impact is recorded by the centrality of the commune. In the most peripheral communes (with values 1 or 2 on CENT80) Labour gained 6.4 and 7.2 percentage points from 1981. In the most central communes (6 or 7 on CENT80) the increase was 3.4 and 3.1 points. It is noticeable that the effect of the centrality measure is stronger than the effect of population density (and of the other economic level variables). An explanation might be that centrality is the most politicized variable in the category.

In Norwegian politics issues related to variations in geographical centrality abound, and the 1985 election raised these concerns both in combination with the welfare state questions and the more general topic of inequality. The three variables which load on Sociopolitical vulnerability (Factor 2) are positively related to Labour voting. Level of unemployment is clearly more important than increase in unemployment (UNEMCH). The relationship between level of unemployment and voting is laid out in a separate plot (Fig. 1) which shows that the relationship is clearly visible, but far from perfect.

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The one measure of welfare state supply (HEAL83) is only very feebly related to the dependent variable. The expected negative correlation coefficient ($-.26$) is primarily created by the differences between the extreme groups as Labour gains are 7.4 points in the decile with the lowest proportion of health personnel and 3.6 percent in the decile with the quantitatively best health services. In between these categories the values of the independent variable are oscillating in what seems like a near random pattern.

In sum, the bivariate analysis has given a partial support to the hypothesis that Labour gains in 1985 can be explained by welfare state issues. As we have analysed variables tapping both the more narrow conceptualization of the welfare state and the broader questions of socio-economic and geographical imbalance, the results suggest that voters were concerned not only about health services and care for the elderly, but that general issues of equality and fairness were involved as well. But a more definitive conclusion has to be based on a multivariate analysis where the net effect of each of the variables can be estimated.

To produce stable estimates one of the sector measures has to be left out, a fate that in our case befell PRIM80. The results from a multivariate, blockwise regression analysis are reported in Table 4. We have grouped the independent variables in five blocks. The first block contains the variables which load on the first factor in our initial factor analysis. The second block is based on variables loading on Factor 2, and so on. Blockwise regression can make it easier to see what is happening as we include additional control variables. We can check changes in the size of the coefficients in each block, as well as changes with respect to statistical significance (see Pedhazur 1982, 164–167).

The dependent variable is percent Labour vote in 1985. To assess the amount of the change in vote from 1981 to 1985, we have included the Labour vote in 1981 (LABO81) in percent as one of the independent variables. In this way we explain the Labour vote in 1985, *while controlling* for the Labour vote in 1981 (see Markus 1979, 45–48, 50). This procedure of course inflates the explained variance (R^2), as it is reasonable to expect that the vote in 1981 strongly influences the vote in 1985. According to Markus (1979, 45–48) one advantage with this procedure is that we take account of *both* the change in Labour support from 1981 to 1985 and the level of support for the party in 1981.

LABO81 (Labour vote in 1981) is, naturally, the most important determinant for the Labour vote in 1985. But, as we can see in Table 4, the vote in 1981 is not the only significant factor involved.

To a large extent the results of the multivariate analysis confirm the findings of the simpler inquiry. Labour gains are stronger in the less-developed areas, as tapped by the centralization measure (CENT80). The negative sign of the coefficients indicates that centrality contributes to a

Table 4. Labour Vote 1985. Blockwise Regression Analysis. Ecological Data. N = 447.

	Block 1		Block 2		Block 3		Block 4		Block 5	
	b	beta	b	beta	b	beta	b	beta	b	beta
LAB081	.992	.983*	.954	.945*	.952	.944*	.956	.948*	.958	.949*
DENS80	-.074	-.017	-.051	-.012	-.065	-.015	-.027	-.006	-.019	-.004
CENT80	-.633	-.121*	-.460	-.088*	-.409	-.078*	-.400	-.076*	-.377	-.072*
TERT80	-.016	-.013	-.027	-.022†	-.020	-.016	-.046	-.036†	-.035	-.028
INCO83	-.040	-.003	-.184	-.014	-.233	-.017	-.088	-.007	-.220	-.016
OVER60	-.172	-.068*	-.198	-.078*	-.193	-.076*	-.196	-.077*	-.178	-.070*
UNEM84			.311	.046	.294	.043*	.319	.047*	.289	.043*
UNEMCH			-.009	-.000	-.017	.001	-.031	-.003	.009	.000
DISA83			.236	.064*	.217	.059*	.216	.059*	.215	.058*
MIGR84					.250	.025†	.194	.019	.180	.018
MIGRCH					.012	.002	.029	.004	.041	.005
SECO80							-.032	-.022	-.027	-.019
HEAL83									-2.13	-.027*
R² =	.965		.972		.973		.973		.974	

* significant at the .01-level.
† significant at the .05-level.
b: unstandardized coefficient.
beta: standardized coefficient.

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relative decline in the vote for the Labour party. This is true even when we are controlling for a number of variables. Population density (DENS80) on the other hand is not statistically significant in any of the 5 models, but the sign of the coefficient (negative) is in the expected direction. The proportion of older people in the communes (OVER60) does not conform to our expectations. The higher the proportion of people over 60, the lower the support for Labour.

Sociopolitical vulnerability does, however, play a significant role in the outcome of the election. A high level of unemployment and a high proportion of disabled persons both go with an increase in the Labour vote. Migration, which is a contextual variable that does not affect the 'migrants' as much as the people left behind, does not seem to be of any importance. The one exception to this tendency is found in Block 3, where there is a significant increase in the Labour vote in communes with a negative migration balance.

The economic level does not seem to be of decisive significance, albeit Labour gains are smaller in communes with a high share of the population in the tertiary sector. While the sign is also negative for the variable measuring the proportion in the secondary sector, this item does not reach statistical significance. Finally, an increasing level of supply of health services, as expected, reduces the vote increase for Labour.

Table 4 seems to indicate important impacts of ecological characteristics on the vote choice in 1985, even when controlling for vote in 1981. Due to the inclusion of the vote in 1981 as one of the independent variables, the increase in explained variance (R^2) is very small for each of the blocks included in the analysis. As an alternative we have used percent change in Labour vote from 1981 to 1985 as the dependent variable. If we do this, the R^2 for Block 1 is .311, for Block 2 .418, for Block 3 .426, for Block 4 .436 and for Block 5 .450. By including the vote in 1981 we clearly are tapping very much of the variance. This also reminds us that even though the change in the level of Labour support increased considerably according to Norwegian 'standards', we are still only talking about less than 4 percentage points shift in favour of Labour.

A further technical problem in the above analysis may arise from multicollinearity in the independent variables. This may affect both the size of the coefficients and the statistical significance for the various variables. In an attempt to remedy this weakness we have performed the same analysis as in Table 4, but now using factor scores as independent variables (based on the five factors from Table 2). The analysis (tables may be obtained from the authors) was done in two versions, one including LABO81 as an independent variable, the other excluding this item. The first alternative approach yields results consistent with those of Table 4. All five factor scores are statistically significant with respect to vote change from 1981 to

1985. The second analysis gives only three factors with statistical impact: unemployment/disabled (Factor 2), migration (Factor 3) and the proportion working in the health sector (Factor 5). Economic level and type of economy (SECO80) on the other hand is *not* important. The alternative approaches confirm our earlier findings that sociopolitical vulnerability, especially being exposed to unemployment and living in a community with a relatively high number of disabled persons, seems to affect both the support for Labour in the 1985 election and the change in support for this party from 1981 to 1985.

Survey Analysis

The aggregate analysis has given support to the hypothesis that welfare state questions were important in the 1985 election. Can this finding be corroborated in an analysis with individual survey data? To answer this question we turn to the election study panel 1981–85. First we report simple bivariate relationships from a series of comparable variables from panel data (Table 5).

The bivariate master-table gives clear indications that there are regional variations in the support for Labour from 1981 to 1985. The East–central area, covering the inland region close to the metropolitan Oslo region, and Trøndelag in the middle of the country show the highest shift in favour of Labour. But the increase is not consistent when we look at the population density of the communes represented in the survey. Level of income also shows a more complex pattern at the highest increase is found in groups with medium income. The self-reported financial status of the individuals does show a consistent effect as Labour gains are clearly higher among persons who report worse finances than among those who are better off than before. Consistent with this is the tendency for unemployed people to vote Labour.

Labour gains are also stronger among individuals with low education, workers, and younger people. Sector of the economy does not seem to matter, and neither does gender.

On the other hand, the election campaign which focused on problems in the health sector, seems to have given Labour an edge as the increase for Labour is markedly higher among those who mention health and employment as the most important issues in their voting choice. As with the ecological data, bivariate analysis does not guarantee that these results will be confirmed when we control for the simultaneous impact of other variables. We apply the same analytical procedures on the individual panel data, using the vote in 1985 as the dependent variable, and including the vote for Labour in 1981 as one of the independent variables.

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Table 5. Change in Labour Vote 1981–85. Bivariate Analysis. Individual Panel Data. Entries are Percentage Points Change in Favour of Labour.

Variable			Change in %	N
Region:	Oslofjord		6	277
	East-central		15	114
	South		6	36
	West		7	189
	Trøndelag		10	58
	North		9	68
Population density	Low	0	3	35
		1	8	24
		2	11	45
		3	10	59
		4	3	38
		5	12	57
		6	11	85
		7	8	78
		8	11	52
	High	9	7	269
Income:[3]	Low		7	135
	Medium		13	261
	High		6	319
Own economy last year:[4]	Much better		6	51
	Somewhat better		8	136
	Somewhat worse		12	85
	Much worse		18	27
Unemployed?[5]	Yes		12	72
	Difficulties		7	27
	No		8	546
Education:	Low		12	190
	Medium low		9	231
	Medium high		8	152
	High		4	158
Occupation:[6]	Worker		15	168
	Low. sal.		9	214
	High sal.		8	51
	Independent		2	57
	Farmer/fish.		0	34
	Student		–	12
	Pensioner		7	121
	Housewife		4	51
In the work force?[7]	Yes		9	546
	No		6	195

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Table 5. *Continued.*

Variable		Change in %	N
Sector of employm.[8]	Public	11	193
	Private	11	226
Age:	22–29 years	15	128
	30–39 years	8	176
	40–49 years	7	139
	50–59 years	7	103
	60–69 years	7	115
	70+ years	5	81
Gender:[9]	Male	8	407
	Female	9	335
Most important issue:[10]	Health, social sector	10	371
	Defence, foreign politics	3	117
	Employment	10	61
	Taxes	4	46
	Moral–religion	8	47
	Prices	3	29

Table 6 reports the results from a multivariate, blockwise regression. OLS regression analysis is not generally appropriate with a dichotomous dependent variable. Most problematic is the fact that the significance tests and R^2 are not reliable (Aldrich & Nelson 1984). We have therefore also performed a probit analysis as a validation control.

The rationale for the sequence of these five blocks is consistent with the logic employed by Mastekaasa & Moum (1984, 395) when they content that 'the very idea of a contextual effect presupposes that contextual variables have some explanatory power in addition to that obtained with individual-level variables only.' We therefore start by introducing variables which are 'closed' to the individual, like age, gender, and education. Next we introduce variables which depict the economic evaluations of the person. We then control for occupation and sector of employment. In Block 4 we control for the issues which the respondents themselves said were most important for the vote in the 1985 election. Finally, we control for region.

The results are relatively straightforward. Of the socio-economic background variables only education stands out. The lower the respondent's educational level, the higher the chances are that he or she voted for the Labour party in 1985. Of the situational factors, the financial situation in

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Table 6. Labour Vote 1985. Blockwise Regression Analysis. Survey Panel Data. $N = 598$.

	Block 1		Block 2		Block 3		Block 4		Block 5	
	b	beta	b	beta	b	beta	b	beta	b	beta
LAB08I	.778	.770*	.764	.757*	.756	.749*	.729	.722*	.715	.709*
AGE	-.005	-.018	-.008	-.025	-.002	-.008	-.004	-.014	-.002	-.005
FEMALE	.016	.017	.007	.007	.008	.008	-.006	-.006	-.012	-.013
EDUCAT	-.047	-.104*	-.044	-.098*	-.049	-.110*	-.046	-.102*	-.044	-.099*
ECWORSE			.099	.072*	.096	.069*	.086	.062*	.086	.062*
ECBETTE			-.056	-.050†	-.064	-.057†	-.060	-.054†	-.064	-.057†
UNEMPYES			.014	.008	-.015	-.009	-.022	-.013	-.029	-.017
UNEMPNO			.012	.011	-.015	-.014	-.017	-.015	-.013	-.012
INCOME			-.002	-.008	-.010	-.039	-.008	-.032	-.008	-.030
WORKFORCE					-.008	-.007	-.015	-.013	-.016	-.014
WORKER					.082	.069	.070	.059	.071	.060
LOWSAL					.070	.065	.065	.061	.065	.061
HIGHSAL					.110	.059	.097	.052	.092	.049
INDEPEND					-.014	-.008	-.019	-.011	-.004	-.002
PENSION					-.022	-.017	-.032	-.023	-.034	-.025
HOUSEWIFE					-.019	-.009	-.033	-.016	-.015	-.007
PUBLIC					.028	.025	.023	.021	.020	.018
PRIVATE					.008	.008	.011	.011	.009	.008
HEALTH							.082	.084*	.079	.081*
DEFENCE							-.043	-.033	-.046	-.036
EMPLOYM							.025	.015	.014	.008
TAXES							-.045	-.021	-.049	-.024
MORAL							-.066	-.032	-.059	-.029
PRICES							-.012	-.005	-.018	-.007
OSLOFJORD									.056	.056
EAST									.162	.119*
WEST									.085	.076
TRØNDELAG									.144	.079†
NORTH									.105	.054
DENSITY									.010	.059†
$R^2=$	.649		.659		.667		.677		.684	

* significant at the .01-level.   † significant at the .05-level.   b. unstandardized coefficient.   beta: standardized coefficient.

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the year before the election is of importance. Those who were financially worse off vote in favour of Labour, while those who report that they are better off move away from the party.

The campaign of 1985 was probably more than any campaign in recent history dominated by a single issue. Voters who said that questions related to health care were most important for their party choice (the HEALTH item in Table 6) is more likely to go to the Labour party than those who do not mention this issue.

Despite the control for previous vote, demographics, economic evaluations, and issues, some influence of regional influences remain. Labour gains are stronger in the inner East region and in Trøndelag. The impact of population density of the commune in which the voter lives is also positively related to Labour support with voters in less urban communes more likely to vote for Labour. This is a finding that is in contradiction of the results from aggregate analysis.

Since most of the aggregate variables are supposed to have contextual effects on the vote one may ask if the regional variations that remain can be accounted for by such effects. Our final step of empirical analysis is hence to merge the two data sets to see if regional effects can withstand the inclusion of ecological variables specified as contextual controls, and, secondly, to see if the aggregate variables have a visible contextual impact on the behaviour of the individuals.

According to Berglund (1983, 167):

> region will register in a multivariate framework only to the extent that we have failed to specify the model properly. In other words, it only serves as a proxy for contextual variables like urbanization, unemployment, party organization etc., which should have been included in the model from the beginning.

Surely it will always be possible to argue that important variables are missing from the specification, but it might also be conceivable to argue that region is a unit that reflects identification and symbolic values that are not captured by the kind of information that ecological data normally include.

In the merged analysis we have included variables which significantly affect the 1985 vote in the survey data (Table 6, Block 5) and the ecological data (Table 4, Block 5), respectively. The only exception to this inclusion criterion is the migration variable (MIGR84) which reached statistical significance in Block 3 (Table 4). Migration did, however, show up with significant effects in the alternative analysis using factor scores. We therefore chose to include the migration variable in the subsequent analysis. The merged analysis gives a meagre result in that only one of the contextual variables is significantly correlated to individual vote change in favour of Labour (Table 7). The variable is MIGR84, tapping the balance of

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Table 7. Labour Vote 1985. Individual and Contextual Variables. Regression Analysis. Panel Data. $N = 596$.

Variable	b	beta
LABO81	.732	.726*
EDUCAT	−.038	−.086*
ECWORSE	.093	.068*
ECBETTER	−.059	−.053†
HEALTH[11]	.086	.088*
EAST	.106	.078*
TRØNDELAG	.068	.037
DENSITY	.011	.063†
UNEM84	−.012	−.038
DISA83	−.000	−.000
HEAL83[12]	.012	.011
MIGR84	.041	.065†
OVER60	−.003	−.029
CENT80	.000	.001
$R^2 = .676$		

* significant at the .01-level.
† significant at the .05-level.
b: unstandardized coefficient.
beta: standardized coefficient.

migration in the commune. When there is a net flow of people leaving the commune, this works in favour of the Labour party. The impact of individual factors like financial situation, giving priority to health issues, and educational level of the person, seems to be only marginally affected by the contextual control variables.

One of the regional dummies, Trøndelag, no longer has any impact on the vote while the inner East is still statistically significant.[13] The same applies to population density.

A potential explanation for the paltry effects of the contextual variables could be that the individual level items explain variance that ecological context accounted for in the beginning. To investigate this possibility we performed a separate analysis with the Labour vote in 1981 and the contextual variables as the only entries. This procedure gave the same results as in Table 7, with the exception of the effect of net migration.

Table 7 also demonstrates some interesting shifts in the sign of the coefficients. Level of unemployment in the commune, which was positively correlated with Labour vote in the ecological data, is, when combined with survey data, reversing the sign. The negative effect in the latter analysis is inconsistent with theoretical expectations. A possible explanation of the deviating results may be of a methodological nature. In the ecological data

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set we had access to information of the universe of communes in Norway. Only 136 of these are represented in the survey. The question, that can not be answered satisfactorily here, is whether this subset of communes differs from the universe on some of the relevant factors.

The effects of the contextual variables may, as we argued in the section on ecological data, be affected by multi-collinearity. To check for this we replaced the separate contextual variables with the factor scores derived from the initial analysis in Table 2. Again, the results are consistent with those reported in Table 7 (tables may be obtained from the authors).

A final problem relates to the dependent variable. In the ecological data we have access to average support for one particular party in two elections. The information about change which is derived from these variables obviously is restricted to *net* aggregate change. In the panel data, on the other hand, we have access the information about changes on the individual level, or *gross* change. This could also account for differences in the results that are obtained from the two sets of data.

In the closing analysis of the merged data set we have used support for Labour in 1985 as the dependent variable and excluded LABO81 from the equation and have included factor scores as independent variables. The result of this estimation is even more negative as none of the contextual factors were significantly related to Labour vote. Similar results were obtained in probit analysis, using cross-sectional data. The failure to demonstrate contextual effects in our analysis, therefore, does not seem to be related to particular problems of operationalizations of the dependent variable.

Conclusion

By combining individual and contextual variables we have managed to bring together two types of data that bear on the same research problem. The results of this analysis may also raise the old question of 'ecological fallacy' (Robinson 1950). However, the findings from individual survey data are, in our case, with minor exceptions, consistent with the outcome of the aggregate analysis. Welfare state issues were important in the shift toward Labour in the 1985 election, and these issues were also related to voters' concern for inequality along socio-economic and centre–periphery dimensions. Despite the relative consistency in the findings from aggregate and survey data the attempt to model contextual effects of variables tapping sociopolitical vulnerability and welfare state questions has been largely without success. The more demanding problems of obtaining a proper specification for a contextual model could be used to account for this, but should not prevent us from concluding our inquiry on a cautiously optimistic note that both types of data are worth considering in future analyses.

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Finally, we might also add that our investigation has not exhausted all possible models and estimation procedures. This is especially the case for the contextual models, which our analysis only briefly touched upon.

NOTES

1. This is a revised version of a paper presented at the ECPR Joint Sessions of Workshops, Rimini, April 5–10, 1988. Data from the Commune Data Base were made available by the Norwegian Social Science Data Services. Excellent research assistance was provided by Gunnar Vogt.
2. Pearson's r is .43. The understandardized regression coefficient is .65.
3. Income is total family income in 1,000 Nkr. Low income is below 90,000 Nkf., medium income is between 90,000 and 160,000 Nkr. High income is above 160,000 Nkr.
4. Based on the following questions: 'We are interested in how people are getting along financially these days. Would you say that you and your family living with you, are better or worse off financially than you were a year ago?' In the regression analysis we collapsed the two 'better'-alternatives into one, and also the two 'worse'-alternatives into one category. The reference group is here 'Don't know'.
5. Based on the question: 'Did you or someone in your family living with you experience unemployment or did you have serious problems of getting a job during the last four years?' In the regression analysis the reference group is those reporting problems in the labour market, but who were not unemployed. In the subsequent regression analysis UNEMPYES is the group reporting actual unemployment and UNEMPNO is the group with no problems in the labour market.
6. Low. sal. is lower salaried 'white collar'. Hi. sal. is higher salaried. Pensioners are retirees because of old age, or because of physical or psychological handicaps.
7. This is a question of whether or not the respondent is active in the work-force outside of the home. The variable is called WORKFORC in the subsequent regression analysis.
8. Sector is restricted to own position.
9. In the regression analysis the variable is called FEMALE and is code 1 for females and 0 for males.
10. The respondents were allowed multiple answers on these items. Our variables are dummies coded 1 for mentioning this area and 0 for not mentioning it. In the subsequent regression analysis the variables are called HEALTH, DEFENCE, TAXES, PRICES, MORAL, EMPLOYM (for employment).
11. This is health and social sector as the most important issue or issue-area for the voting in 1985.
12. This is the number of people, in percent of the population, working in hospitals etc. at the county level.
13. This is confirmed by probit analysis.

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