DEPARTMENT OF ECONOMICS

Working Paper

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Markets and Municipalities

A study of the behaviour of the Danish municipalities

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Abstract: The way 275 Danish municipalities organize 12 tasks shows a complex and changing pattern of market orientation. It is often discussed as an ideological issue; but we have failed to find a significant ideological factor in the pattern. However, factors belonging to four theories become significant: (f1) A modernization theory where the market is the new organization. (f2) A diffusion process, where the market starts in the biggest cities. (f3) A welfare coalition model, where diffusion is blocked if the median voter receives income from the public sector. (f4) A pressure theory, where municipalities use the market in if they are forced to save. Finally, it is shown that the pattern in the Copenhagen metropolitan area is different from the one in the provinces.

Keywords: Municipal behavior, use of markets, quasimarkets. Jel.: H72, L33

I. Introduction - explaining the use of the market by Danish municipalities

Much of the large production of public services in the Danish welfare state is done by the 275 municipalities. However even when the municipalities are obliged by law and by the voters to provide the service, they need not produce it themselves, but might buy it in the market. *Core activities* as education, health care, social welfare, libraries, etc, are largely produced by public sector personnel. There have only been a couple of small private hospitals, the private schools are subsidized and regulated so that they are private in name mostly. However, on *the margin*, the market is increasingly used. The following is a study of 12 marginal tasks trying to explain *why* the market is coming in.

The main reason to opt for the market is *cost savings*. Many studies suggest that savings occur, when a service is allowed to go through occasional competitive bidding. The cost savings differ much from case to case. On average they might be as much as 30%.[2)] Savings occur for three reasons: (s1)

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2. The result is from the classical survey by Borcherding, Pommerehne & Schneider (1982) summarizing 50 studies from 5 countries. The average ϕ (savings ratio) is found to be 30%. A small recent Danish study (Jensen & Rasmussen, 1997) finds $\phi \approx 50\%$. It appears that the distribution of ϕ is skew to the right. Public services are often well organized and only small savings can be found by the market. However, sometimes such services *diverge* into high inefficiency, and large savings are possible. It may happen when the producing entity is sheltered from the funding agency and the taxpayers. In Denmark the case of the »postterminal« (the central letter sorting facility)

Slack is reduced. (s2) Technical progress increases. (s3) Economics come to dominate technology. Technicians love technological perfection, but it is very expensive. Sometimes they can get away with it in the public sector.

Against the savings are four types of *political costs*: (c1) *Stakeholder*s - in particular the old producers - are likely to resent the change. The resentment is stronger the larger the vested interests. That is, the larger the rents the service generates to the stakeholders. (c2) The *working conditions* of the old producers might deteriorate. Even if they retain the production the entry of market forces is likely to reduce organizational slack, sometimes to the point of stress. (c3) The fears that the *quality* of the service might deteriorate. It is often hard to define exactly the service wanted - especially within health care. Some types of »slack« may, in fact, be the »care« itself! (c4) The municipal politicians loses *discretionary* influence over the personnel employed and the allocation of the service.[3)]

As elsewhere the increasing use of the market has proved controversial. Some of the longest and most violent (by Danish standards) labor disputes have taken place over such issues. In the media and the Parliament it is often treated as a »hot« ideologic issue, where the *Left* is against increasing the MO (Market Orientation) and the *Right* is for »the market«. There is a well defined left/right scale in Danish politics (see Nannestad 1989). One may well debate if it makes sense at a deeper philosophical level, but the voters and politicians agree on the classification of the many Danish parties on a left/right scale. The Left is termed socialist/workers parties - it is dominated by the Social Democrats. The Right are the liberal/bourgeois parties - it is dominated by the Liberal/Conservative coalition. The dominant parties are quite moderate, especially at the municipal level. But nevertheless it is an issue if the mayor is Left or Right.[4)]

Consider a municipal council deciding if the service x, which it has itself been doing till now, should meet the market or not. The key variables, on which the decision is made, is likely to be the *expected cost savings*, E{CS(x)}, and the *expected political cost* E{PC(x)}. Unfortunately we have no direct measures of neither CS nor PC. We have no reason to suspect that there are trends in CS, and one may see most of our variables as an attempt to catch the underlying pattern of change in the PC-variable.

Our study considers 12 municipal tasks (listed in Table 1) on the said »margin«, where many municipalities use the market. From information collected about these tasks from (nearly) all municipalities we have constructed an aggregate MO-variable (Market Orientation), shown as a MO-map of

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is almost proverbial and documented in great detail (see Justitsministeriet, 1985). It occurred from 1970 onwards and was stopped in the mid 1980s.

3. The increased efficiency of the service itself is surely an advantage. However, the previous decision makers are likely to feel the loss of power. Further, there are many examples where one service is used to solve the problems of another (the upkeep of parks are used for employing »social« cases). The result is a compromise - sometimes appearing a bit like »wheeling and dealing«, but it might be better on the aggregate.

4. Our data contains one lord mayor, who is left of the Social Democrats, but he is elected on a cross-over majority particular to this municipality. The word »bourgeois« in English is used for »borgerlig« in Danish though the connotations are somewhat different. In the municipalities the Right (or most of it) often appears as a »joint-bourgeois-list« at the municipal elections.

the country in Figure 2. The map corresponds to no pattern we know. Therefore, we made a set of all the »promising« hypotheses we could think of, and tried to find variables operationalizing each one. By systematically exploring these variables, we have managed to explain some of the pattern.

Section III presents these hypotheses and the operational variables used. However, before we turn to the explanations, Section II presents the data we use as the measure of market orientation. Section IV gives the regression results, and finally the conclusions in Section V deal with the implications of our findings.

Table 1. The 12 tasks used to measure MO, the market orientation

Task:	Market orientation			No
	full	some	none	answer
1. Fire brigade Tenders or private production	176	3	93	0
2. Library book acquisition Municipal library gets non-standard price reduction	111	2	134	25
3. Library book binding Municipal library gets non-standard price reduction or producer is appointed after search for cheapest	93	2	137	40
4. Purchases of »normal« goods Municipality gets non-standard price reduction	48	189	9	26
5. Ordinary household refuse collection Tenders or private production	243	3	23	3
6. Special household refuse collection Tenders or private production	136	0	86	50
7. Collection of garden garbage from households Tenders or private production	114	0	89	69
8. School sweeping/cleaning Tenders or private production	83	12	174	3
9. Transport for the elderly and handicapped Tenders or private production	188	34	25	25
10. Ambulance service Tenders or private production	172	14	35	51
11. Transport of school children Tenders or private production	201	22	34	15
12. Transport of goods Tenders or private production	64	30	69	109

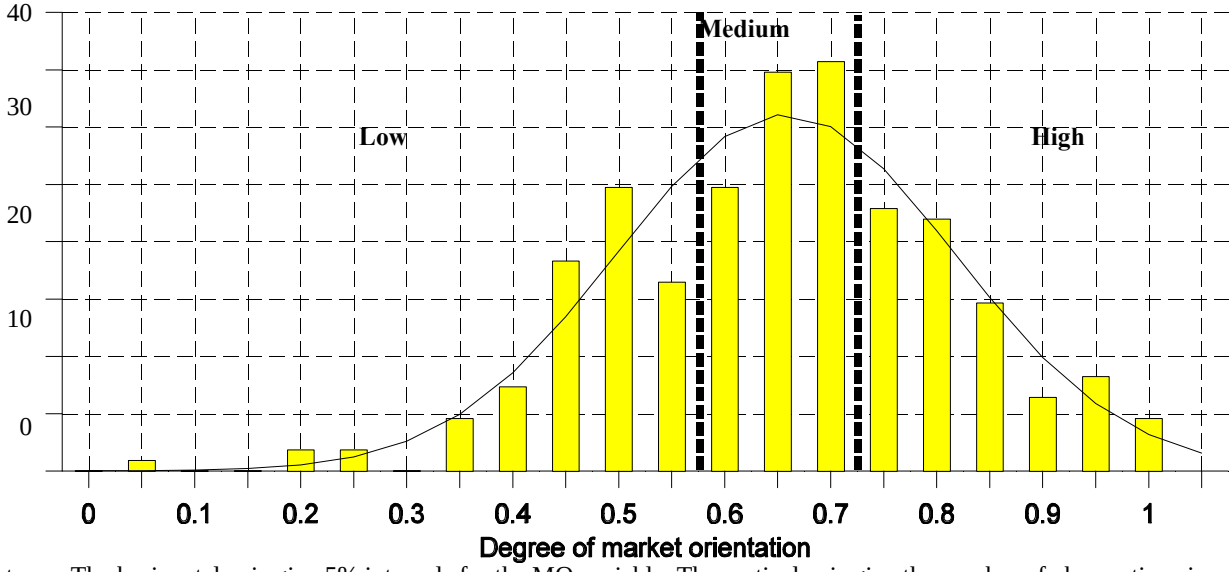
Note: Item 4: The purchase of stationary, office machines, food, ..., etc, covers goods sold in the shops as »ordinary« *private goods* as well. Item 11: The Danish school bus system covers only pupils living more than 3 km from the school, so it covers much fewer than in the US, and it is often done by taxi services.

II. Defining and measuring the degree of market orientation - the MO-variable

The MO-variable was calculated for each municipality from the answers to a questionnaire, sent to all 275 Danish municipalities. For each task the municipality was asked to indicate the proportion of the budget which was produced under market conditions. Remarkably, 272 answered - the last three declined to answer. Some missed out on a question; but on the whole we do have an almost full coverage. Also, we have found only few inconsistencies in the answers.

Table 1 shows the tasks covered, and the frequency of the different answers. We tried to define the institutional arrangements corresponding to the different answers as well as we could, without making our questionnaire too bulky. However, some municipalities may have understood our questions in their own way. In a few cases a municipality has created a semi-independent »parastatal« for the task, and given the parastatal a long run monopoly - normally with predictable results. They might call this a market solution, even when it is rather the reverse.[5)]

Figure 1. Frequency distribution of the MO-variable

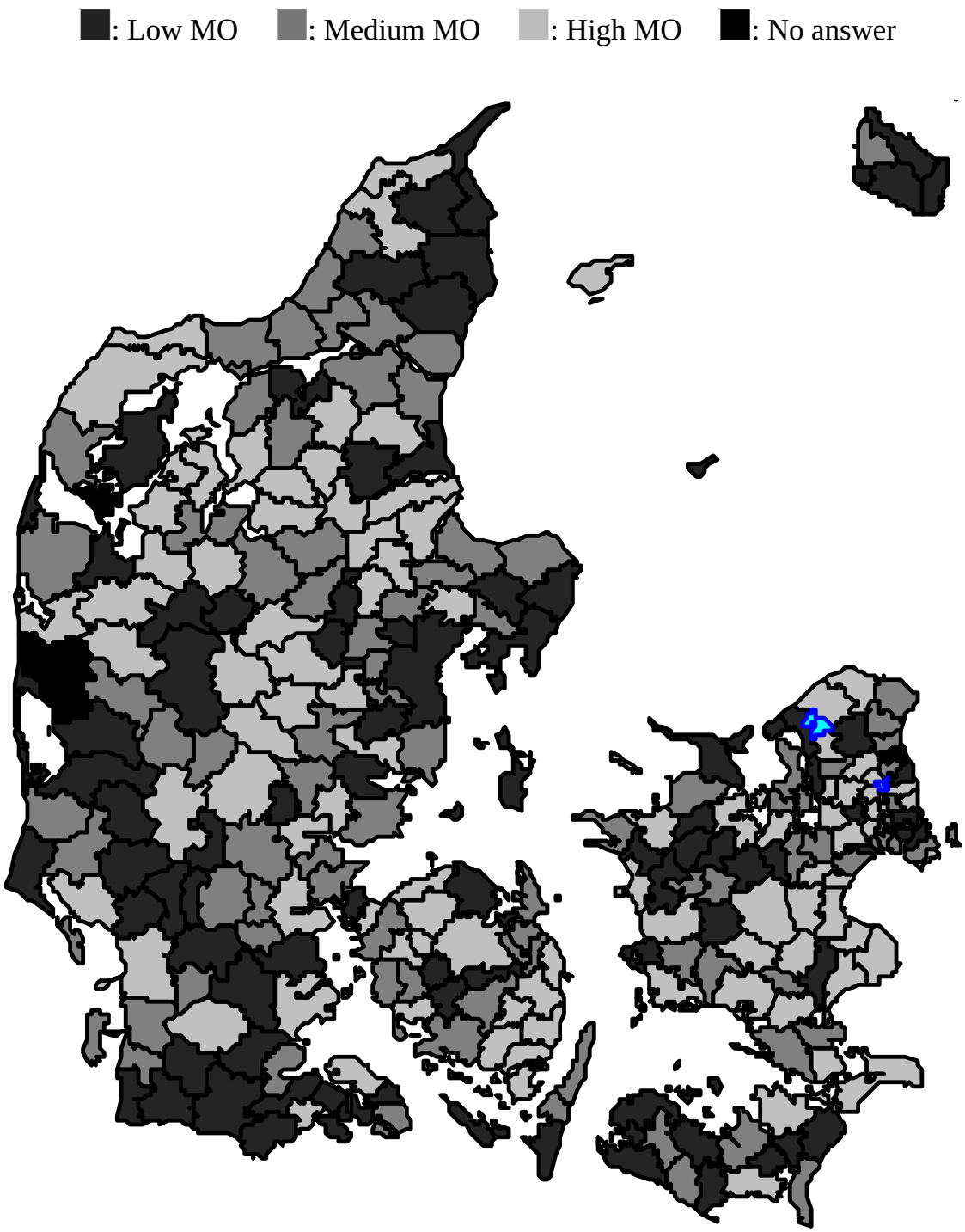


Note: The horizontal axis give 5% intervals for the MO-variable. The vertical axis give the number of observations in each interval. The curve drawn shows a normal distribution with the same mean and standard deviation.

Our **MO-variable** is the unweighted average of the 12 individual MOs. It therefore obtains values between 0 and 1. Figure 1 shows the distribution of the MO-variable. The reader will note that the averaging has given the graph a rather »normal-looking« distribution as one might have hoped. Figure 1 shows how it looks, when depicted against the relevant normal distribution. A formal test shows that normality cannot be rejected.[6)]

5. Some of the bus and garbage collection companies are such »parastatals«, who have managed to obtain a semi-independent status, and a very secure monopoly position.
6. The Shapiro-Wilks test is used to check if the MO-variable follows a normal distribution. Pr<W= 0.42. We are thus far from rejecting normality at the 0.05 level.

Figure 2. A map of Denmark showing the three categories:
From least to most market orientated municipalities.



Note: The reader should compare with a more regular map to see the location of towns and rural areas. The Island of Bornholm has been moved from the Baltic into the Kattegat to keep the map reasonably compact. The three municipalities, who declined to answer, are Thyholm (purely rural), Ringkøbing (with a town and much tourism) and Hørsholm (a wealthy low tax suburb of Copenhagen).

The two vertical bold broken lines on Figure 1 are placed to give the division into three - equally large - groups. These groups are depicted with different signatures on the MO-map of Denmark shown on Figure 2. The pattern of gradual »lightening« due to increasing MO is not easy to explain. Consider, ie., North Jutland. Here there is a clear pattern, where the MO increases from east to west; but on the face of it, it does not tally with other patterns we know about the area. That is, the municipalities with the three largest towns have three different colours. The main tourist areas are similarly divided, etc. So what is going on is complex.

III. Six hypotheses

Our data collection took place in the Spring of 1997. We posed several questions about the development in the MO over time; but we have no time series for our variable. However, we have a general impression based on scattered evidence from many sources. Our study assumes that the MO-variable rises ratchet-wise: Municipalities used to have low MOs. Once they shift to use market mechanisms for a task, they rarely shift back.[7)] The change is slow. A municipality increasing its MO in one task, may wait a couple of years before changing in another task. A full change of MO for all 12 tasks may easily take a couple of decades. If the process continues, the market then reaches the core activities, where the political resistance will be much greater.

To explain the MO-variable, we have considered a total of 6 broad hypotheses. For each hypothesis we have tried to find available variables, which may catch some aspect of the basic idea. The variables are chosen to create as fine a net as possible, and many of the variables chosen are therefore likely to be correlated. This has have led to the choice of a total of 23 potential explanatory variables. Most are from the large data-bank of AKF.[8)] In order to explain the choice of variables, we shall first look at the hypotheses examined. They represent three different approaches: History/geography, politics and economics.

III.1 Historical and geographical explanations: Market orientation is a modernization

We here consider three hypotheses: H1 explains a rising MO as a modernization, H2 looks at the diffusion process, and H3 turns to factors that may cause inertia.

The intuition is that *the old way* to organize production was by employing somebody to do it. Fifty years ago most municipalities were small and rural, and there were no point in setting up companies selling the service. Also, it was easy to control the costs in societies where everybody knew each other, and many were self employed - and hence very cost conscious. Denmark went through a big municipal reform in 1970, where the number of municipalities decreased from 1'300 to 275. It took a decade for the new municipalities to become truly integrated, town halls to be built, etc. The median

7. We do not need strong assumptions here. All we need is to assume that shifts toward the market dominates shifts the other way.
8. The AKF-data-bank is built from data originally provided by Danmarks Statistik, the Ministry of Interior, and other sources.

municipality now has about 10'000 inhabitants.[9] With such large municipalities, the old direct control of employees became impossible and bureaucracies emerged. Cost control had previously been a problem in the towns only, it now spread to all municipalities.

Consequently, market orientation is *the new way - the modernization*. It began in the towns and has gradually spread. This immediately suggests a stock and a flow operationalization. One may look for »modern« and »traditional« structures characterizing the municipalities, and for »channels of diffusion« from the centre to the periphery.

H1. The change of MO is a modernization process. We measure modernity by high income (Mtb), structure of employment (Mpr, Mpub, Mtra) and large size (Mpop). Traditionalism is characterized by rural (Murb, Mpr)[10] and small size (Mpop).

V1: **Mtb**, tax base. Average net income per capita, defined by the tax law as the municipal tax base - within wide limits the municipality can decide the level a proportional income tax on that base. Unit: 1'000 kr. Es +.[11]

V2: **Mpr**, share of agriculture and fishing in total employment. Unit: Percentage points. Es –.

V3: **Mpub**, share of public sector in total employment. Unit: Percentage points. Es –.

V4: **Mtra**, share of tradables sector in total employment. Unit: Percentage points. Es +.

V5: **Mpop**, logarithm (natural) of 1995 population size. Unit: ln(pop). Es +.

V6: **Murb**, urbanization. Share of population living in towns, as per zoning laws. Unit: Percentage points. Es +.

H2. The change of MO occurs through a diffusion process. We here assume that the modernization ideas are new. Perhaps coming from abroad or from the largest concentrations of highly educated, etc, that is from the major cities, defined as Copenhagen and the three largest provincial towns. They are also the four main university cities (Dkm). However, it is also possible that the diffusion is simply from neighbouring municipalities (Dnab):

V7: **Dkm**, distance to major city, in kilometres. Unit: Km. Es –.

V8: **Dnab**, average MO-variable in neighbouring municipalities. Unit: Percentage points. Es +.

H3. The change of MO is delayed by inertia. In addition to these historical explanations, we have worked with an »inertia« hypothesis. The idea is that changes in the MO occur if an institution changes. Maybe inertia is in the person - if the same person continue ruling nothing changes. Maybe inertia is in the party, so that, if the same party rules for a long time nothing changes.

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9. The average municipality has 18'000 inh, so the distribution is quite skew, with Copenhagen having 460'000. That is 30% of the population of the (greater) »metropolitan area«. There are 265'000 in Aarhus, the second largest municipality, and here nearly all suburbs are included. There are just a couple of municipalities with less than 5'000 inh. We use the concept of a »town« loosely in accordance with local tradition; by assuming that a »town« has more than 10'000 inh.

10. Note the paradox: On the one hand, the agricultural sector in Denmark is technological advanced, with a capital output rate well in excess of the one of the industrial sector. On the other hand agriculture is dominated by small firms, with few employees. The farmers having the typical political attitudes of other small businessmen.

11. »Es +« means that the **e**xpected **s**ign is positive, that is $\partial MO/\partial Mtb > 0$.

V9: **Ilp**, the number of election periods the present lord mayor has ruled. The poll was made toward the end of an election period. It is thus period one. Only a few mayors have ruled less than one period. We then count how long the lord mayor has ruled.[12)] Unit: Discrete variable with values in: {0,1,2,...,6}. Es –.

V10: **Ipp**, the number of election periods the same party has provided the lord mayor. Calculated as Ilp. Note that: Ipp ≥ Ilp. Unit: Discrete variable with values in: {0,1,2,...,6}. Es –.

One may interpret these incumbency variables in accordance with Mancur Olson's »sclerosis« model (see Olson, 1982). If they had worked, it would have opened up several interesting lines of arguments - however, they did not, so these ideas shall not be pursued.

III.2 Political explanations: Party ideology and self-interest

We consider two radically different hypotheses. H4 is based upon political ideology as expressed in party choice. H5 relies on voter self-interest, coalition building and pressure groups.[13)] It disregards the parties. At some deeper level they may converge; but in the short run they differ.

H4. The choice of MO is influenced by political party ideology. We here look at the party/parties ruling the municipality, the size of the majority, etc. The variables tried are closely related - if one work, most will, but if we are close to the 5% level of significance only one or two may pass. The binary variables are defined as 0 if Left and 1 if Right.

V11: **Pm**, political party of mayor on left/right scale. Unit: Binary. Es +.

V12: **Ppm**, political party of mayor on 6-point scale. Unit: Discrete variable in {1,...,6}. Es +.

V13: **Pco**, the left/right orientation of the majority in the municipal council. Unit: Binary. Es +.

V14: **Pmaj**, the relative size of the majority. Unit: Percentage points. Es +.

V15: **Prw**, the proportion of seats held by right wing politicians. Unit: Percentage points. Es +.

We have included five closely related variables to make the net so fine that it can catch the ideological factor which has proved elusive in the literature on the behaviour of Danish municipalities.

H5. A large »welfare coalition« may block the change of MO. We here measure the fraction of the voters receive (most of) their income from the public sector - either as employees or as social compensation. If it reaches more than 50% we say that a »welfare coalition« is possible in the municipality. Such a coalition may block a move towards market orientation.

V16: **Wpub,** public sector employees as share of voters, that is in population above 17 (note that Mpub and Wpub only differ as to denominator). Unit: Percentage points. Es –.

V17: **Wtra,** share voters receiving main income from public transfers - at least for a part of the

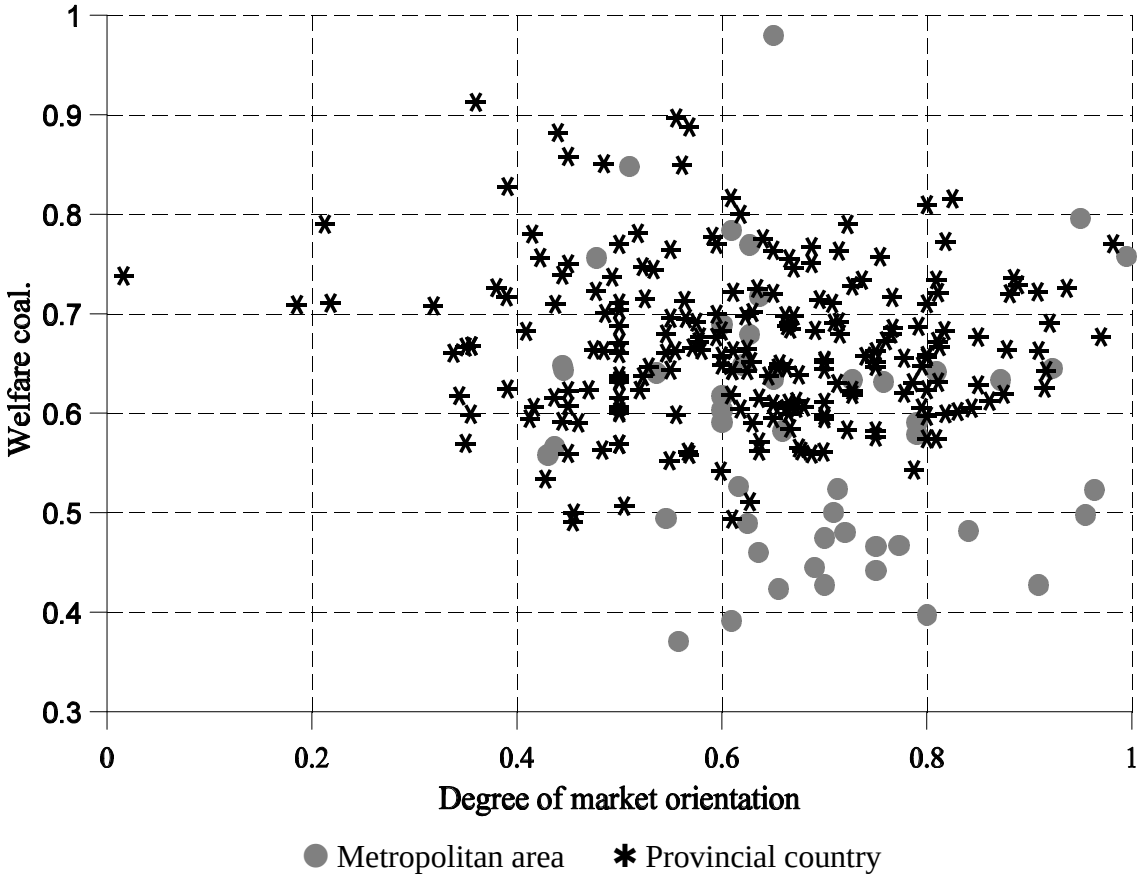
12. Municipal elections take place the same day in all municipalities every four years. The data are made going back to 1973, the first election after the municipal reform - only a couple of mayors have ruled all 6 periods possible; but many municipalities have been ruled by the same party all 6 periods.

13. The two ideas are related to the difference between sociotropic and egotropic behaviour discussed in Nannestad & Paldam (1997a & b)

year[14]. Unit: Percentage points. Es –.

V18: **Wal,** sum of two previous variables V16 + V17.Unit: Percentage points. Es –.

Figure 3. Relationship between MO (market orientation) and Wal (welfare coalition)



Most values of the Wal-variable, as depicted on Figure 3, are amazingly high - that is they are in the range of 50% to 80%.[15] Public choice theory suggests that it matters, if the median voter is within the welfare coalition. This is the case in all but 19 of our municipalities.[16] Note the difference between the (Wal, MO)-points from the metropolitan area and the province - contrary to popular beliefs most ●-circles are at the lower end of the figure while most ✱-stars are at the upper end. We shall return to this

14. This variable is the closest we could get to the desired variable. The nominator gives the number of people in the municipality, who at any time during the year received a transfer meant to be the main income. A few persons might be counted twice if they have changed from receiving transfers from two social systems during the year.

15. Remember that Wtra (for transfer payments) cover everybody receiving transfers at a period during the year. The average value of Wal is 67%. It consequently falls if calculated it at any one point in time. One calculation for 1997 gave a national average at 62%. Note finally that the incredibly high values for a few municipalities - they are small and known for very volatile labor markets.

16. For a normal linear regression the importance of 50% should turn up in the constant. However, we run non-linear regression - see section IV - so it might be awkward that the variable is not defined relatively to the pivotal 50%-point. We have experimented with a variable centred around 50%, but the result did not change.

pattern in Section IV.3, when interpreting the results.

III.3 Economic explanations: The power of economic pressures

The idea is that municipalities turn to the market only under duress. That is, we look for variables, which show if the municipalities are under financial pressure.

H6. Municipalities change MO in reaction to economic pressure. It is not as easy as one might think to find a good representation for the amount of pressure a municipality is subjected to. It depends on the amount of fat in the budgets, as perceived by the municipality.

V19: **Rt**, level of the municipal tax rate 1995. Unit: Percentage points. Es +.
V20: **Rct**, change in municipal tax level, 1990-95. Unit: Percentage points. Es +.
V21: **Rmo**, monetary assets per capita. Unit: 1'000 kr. Es –.
V22: **Rcmo,** change in municipal per capita cash-holdings, 1990-95. Unit: 1'000 kr. Es –.
V23: **Rpop,** relative net change in population size, 1990-95. Unit: Percentage points. Es +.

The Rpop-variable measures relative population increase. Large values of Rpop force municipalities to invest. It hence increases expenditures (much) more than incomes in the short to medium term.

IV. Regressions - univariate and multivariate

We want to estimate how the *probability* that a municipality increases its market orientation *depends upon* our 23 variables - regressions are thus run using the logistic method.[17] The question asked by each regression is: If variable X goes up by one step, what happens to the probability that the MO-variable is high (above 0.7). Table 2 systematically explore *each* of the 23 variables. That is, it lists the results of running the 23 univariate regressions.

The table is constructed following the list of hypotheses and variables above. We have predicted the signs for each variable and test if the variable obtains a significant coefficient with a sign in accordance with the prediction. This requires one-sided tests. The program generates Wald-tests for coefficient significance to either side: We give half the p-value of the Wald-test as our p-values.

The table should speak for itself, but three points emerge if we count the number of »right signs« and significant coefficients (at the 5%-level):

1. Most coefficients estimated are insignificant.
1. But: The sign is as expected for 19 of the 23 variables.
2. And: At the 5% significance level 7 of the 23 variables are accepted.

There is 50% chance of hitting the sign expected by chance, and a 5% chance of reaching a coefficient

17. We estimate the value of the following non-linear estimator: log[Pr(MO=high)/(1-Pr(MO=high))]. It means that the effect on the probability of being very market oriented differs with the value of the variable. An interpretation of the effect, assumes an »average municipality«, where the variables have the value of their arithmetic average in our survey. The logistic method is not optimal when the explaining variable is polytomous and non-numerical. In these cases we have also run a probit regression, but the results did not change.

that is above the 5%-level by chance, so the two counts are both very high. They would speak of a high level of compound significance if all our series were independent.[18)] They are not, but it still show that most of our models, must be part of the pattern in the data. We hence know that even when the pattern is complex and weak, most of our theories contribute to the explanation.

Table 2. Univariate results. The effect on the MO-variable of each of the 23 variables

MO-variable is influenced by:	Expected sign (Es)	Effect (in %) on MO-variable	P-value	Prediction right	wrong	tie
H1 Modern vs traditional						
V1 Mtb	+	+**0.31**	4.36	52.6	45.5	1.9
V2 Mpr	–	–0.66	10.56	52.5	45.5	2.0
V3Mpub	–	–0.50	9.89	51.1	45.9	3.0
V4 Mtra	+	–0.16	wrong	49.6	46.1	4.3
V5 Mpop	+	+**6.97**	1.71	55.8	42.8	1.3
V6 Murb	+	+0.12	22.35	49.5	46.8	3.7
H2 Diffusion channels						
V7 Dkm	–	–**0.18**	0.01	59.0	40.2	0.9
V8 Dnab	+	+**0.31**	0.12	56.0	38.5	5.4
H3 Inertia						
V9 Ilp	–	–0.42	42.04	37.0	36.9	26.1
V10 Ipp	–	–0.33	39.64	39.8	38.2	22.0
H4 Ideology						
V11 Pm	+	+2.30	32.93	24.9	22.8	52.4
V12 Ppm	+	+0.06	48.49	30.3	27.1	42.6
V13 Pco	+	+6.92	11.45	22.3	16.9	60.8
V14 Pmaj	+	+0.14	32.89	47.2	44.9	7.9
V15 Prw	+	+0.17	17.60	50.9	45.0	4.1
H5 Welfare coalition						
V16 Wpub	–	–0.53	12.78	50.8	45.7	3.5
V17 Wtra	–	–**0.76**	1.69	54.3	44.5	1.1
V18 Wal	–	–**0.60**	1.39	54.4	44.5	1.1
H6 Pressure						
V19 Rt	+	–1.41	wrong	48.2	46.2	5.6
V20 Rct	+	–6.05	wrong	50.6	42.5	6.9
V21 Rmo	–	–1.65	12.31	51.9	46.1	2.0
V22 Rcmo	–	+0.74	wrong	49.4	46.3	4.3
V23 Rpop	+	+**3.68**	0.06	59.9	39.4	0.7

Note: Significant results at the 5%-level (in the one-sided test) in column three are bolded. Coefficients with wrong signs have p-values above 50% - we here write »wrong«. The program uses the term »concordant«

18. The probability that 19 (or more) out of n = 23 signs are right by chance is 0.13%. That is, if the data are independent. If we take the tests to be somewhat dependent, the number n falls. Is the true n = 15, the probability is 1.39%. Is n = 10, the probability is 4.39%. The probability that 7 (or more) are significant at the 95% level by chance is 0,0010%, but due to dependencies both 7 and 23 should be reduced proportionally.

for our »right« prediction and »discordant« for »wrong« prediction.

IV.1 The univariate results: One variable at a time

The table contains 23 regressions divided into 6 blocks - each representing one of the hypotheses. Let us first look at the historical/geographical explanations.

The first three blocks deal with the modernization complex:

H1. The change of MO is a modernization process. Most of the variables fail to work, even when the signs are right, but Mtb (tax base) and Mpop (population size) become significant. Mpub (share in the public sector) turns significant in another model, see Table 3.

H2. The change of MO occurs through a diffusion process. Here the results are stronger. Both Dkm (distance to major city) and Dnab (MO in neighbouring municipalities) are significant.

H3. The change of MO is delayed by inertia. Our variables both failed - there is no sign that further work on refining the variables might produce a result.

The next two blocks of variables are the political ones:

H4. The choice of MO is influenced by ideology. All five variables produce the right sign, but they fail abysmally, when it comes to significance. This is a puzzling result - the issue of using the market is as mentioned a »hot« one in national politics. Therefore we tried everything, we could think of, to find the expected ideological effect, but in vain.

H5. A large »welfare coalition« may block the change of MO. Here all three variables have the sign expected. Both Wtra and the aggregate Wal-variable become significant.

The last block looks at variables indicating that the municipalities are under economic pressure:

H6. Municipalities change MOs in reaction to economic pressure. All the variables once more have the signs expected; but only Rpop, showing the population change is significant.

The fact that only Rpop becomes significant is worth a few thoughts, especially as it is the best single variable of the 23 tried. The regression predicts the MO-outcome 20% better than one would by the toss of a coin, ie, instead of a 50-50 prediction we get a 60-40 prediction. This is a nice improvement from just one variable. The best combined models only obtain more than a couple of extra points to both sides. The main reason why the Rpop-variable works so well is probably that it is an *early indicator* of trouble. Population movements call for expensive adjustments. One possibility is to save money by bringing in the forces of the market. Most of the other indicators available are from later stages in the adjustment. Here things are already planned and (largely) under control.

Finally, it should be explained how the coefficients should be interpreted quantitatively. The variables are very different conceptually, but their scaling of the variables as given under the variable definitions above: If Mpop (V5) is increased by one unit (of ln(pop)), the probability that the average municipality shifts from a low MO to a high one increases by 6.97%. If Dkm (V7) increases by one unit (1 km) the probability that the average municipality is highly market oriented decreased by 0.18% - 100 kms thus give 18%. The effect of an increase of 1% in the Wal (the welfare coalition) corresponds to 3 kms extra distance from a major city. It can be offset by an increase in the population of the municipality by 0.5%.

There are probably three explanations for general low level of explanatory power reached. (i) The data are often weak. The data-bank of AKF contains a big effort to divide national data into observations for each municipality; but the primary evidence on which the division is based is sometimes scant and dubious. So, there is undoubtedly a great deal of noise in many of the series, including our own MO-variable. (ii) The MO-process has a considerable stochastic element - information often jumps in mysterious ways, decision makers are more or less innovative and risk averse, etc. (iii) We have surely overlooked some explanations.

IV.2 Some multivariate results

The explanations working are unfortunately related. Model 1 in Table 3 shows what happens when the best variables from Table 2 are included together.

Table 3. Combining the explanations

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Effect	P-val.	Effect	P-val.	Effect	P-val.	Effect	P-val.	Effect	P-val.
V3 Mpub	-0.86	8.88					-**1.09**	0.86		
V5 Mpop	+5.05	10.75					+**11.20**	0.15	+**7.5**	1.34
V7 Dkm	-0.09	5.34	-**0.14**	0.23						
V8 Dnab	+0.18	6.69			+**0.26**	0.60			+**0.23**	1.39
V18 Wal	+0.08	43.17							-**0.64**	1.26
V23 Rpop	+**2.22**	4.77	+**2.47**	1.87	+**3.19**	0.28				
Right	62.2		61.6		62.2		59.5		61.3	
Wrong	37.3		37.8		37.32		39.7		38.2	
Tie	0.5		0.6		0.6		0.9		0.5	

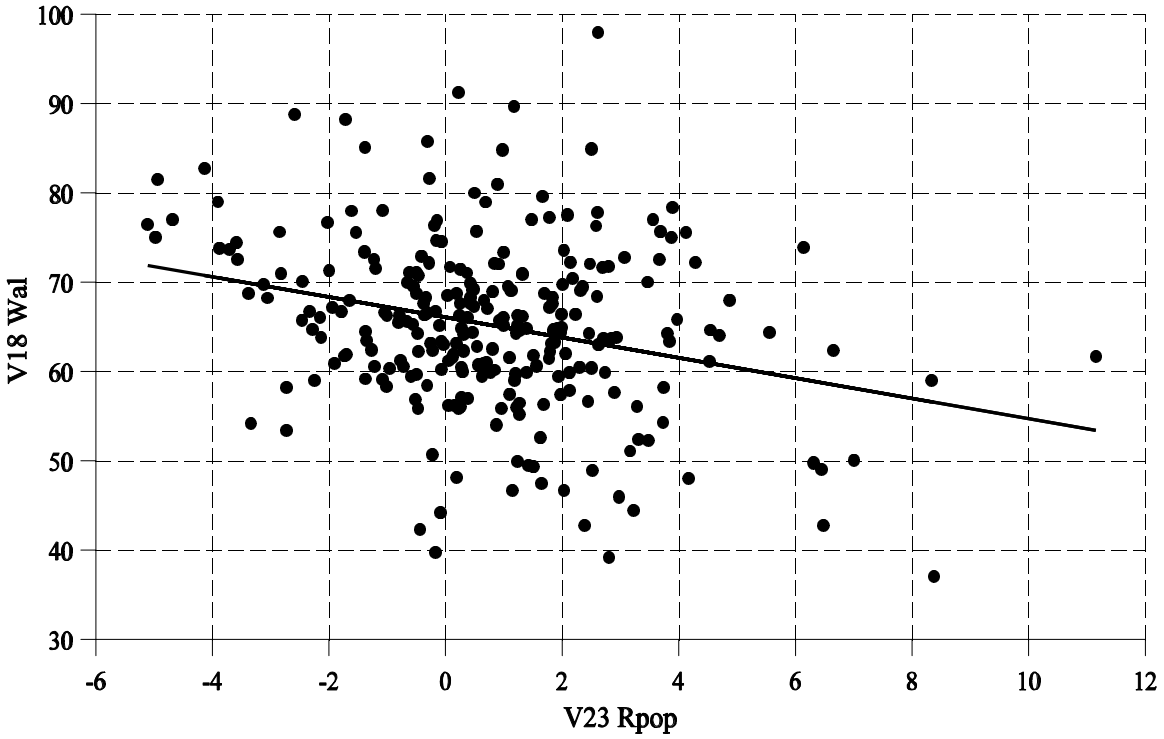
Note: Defined as Table 2

Two points are obvious when Model 1 is considered: First, the explanatory power of the model is only marginally better than the last - and best - univariate model in Table 2. The percentage of right predictions only increases from 59.9% to 62.2%. Second, the level of significance drops rather sharply for all coefficients, and only Rpop manages to remain (just) below the 5% significance level. Our seemingly very different variables must hence contain strong *multicollinearity*. To reach the best model, we thus have to exclude variables - in this process we must get the right prediction between 59.9% (for Rpop alone) and 62.2% (for all 5 additional variables). It appears that various combinations of 2 and 3 variables reach that level - and are, thus very similar.

Note that the welfare coalition (Wal) and the pressure hypothesis (Rpop) cannot work together, but substitute each other to a large extent. This is a non-trivial result. Figure 4 shows the correlation between the two variables. The figure shows a significant negative correlation indicating that municipalities with decreasing population size are characterized by a strong welfare coalition and that municipalities with a growing population have a weak welfare coalition. From Table 2 we know that in a

decomposition of the welfare coalition it is the proportion of the voters having their income from public transfers, V17, which works. Municipalities with decreasing population size are characterized by large public transfer payments partly because of low employment rate and partly because of the demographic composition of the population. Our analysis hence point to the difference between growing and stagnant municipalities. In the growing ones employment is high - and Wal therefore low. These are the municipalities to which young people move. The stagnant municipalities loose people - especially in the active age groups. The difference is obviously dynamic.

Figure 4. Relationship between Wal (welfare coalition) and Rpop (change in population)



Note: The regression gives an R-square value of 0.06 and a significance probability of 0.01 percent.

IV.3 Copenhagen Metropolitan Area versus the Province

The Danish municipal structure was, as mentioned, re-made in 1970. The reform did not include the metropolitan area. Because of the especially strong lack of homogeneity in the municipal structure in the metropolitan area, it should be expected, that it is more difficult to explain the degree of market orientation in the metropolitan area than in the provincial Denmark.

Table 4 confirms this expectation. Only one of the variables, Wtra (fraction of population receiving transfer payments) becomes significant in the capital area, and as a result Wal (welfare coalition) becomes almost significant. In the provinces most of the pattern expected re-emerges, often even more significantly than in the aggregate regressions.

Table 4. The metropolitan area (M) versus the provincial country (P)

The MO-variable is influenced by:	Effect (%) on MO-variable		P-value		Prediction (in percent) right		wrong		tie	
	M	P	M	P	M	P	M	P	M	P
H1 Modern vs traditional										
V1 Mtb	+0.23	–0.29	27.36	wrong	52.5	50.0	44.6	47.1	2.9	2.8
V2 Mpr	+5.91	–0.09	wrong	44.54	58.2	43.5	40.5	42.8	1.3	13.7
V3 Mpub	–0.60	–0.69	19.58	7.38	56.5	51.0	40.7	46.8	2.8	2.2
V4 Mtra	+1.88	+0.33	16.74	19.14	57.7	50.8	41.1	47.0	1.2	1.3
V5 Mpop	–7.97	+**7.87**	wrong	2.13	53.0	54.7	44.8	44.1	2.1	1.2
V6 Murb	–0.79	–0.05	wrong	wrong	40.1	48.0	30.2	44.3	29.8	7.7
H2 Diffusion channels										
V7 Dkm	+0.04	–**0.16**	wrong	0.19	46.8	58.6	43.0	40.6	10.2	0.8
V8 Dnab	+0.02	+**0.30**	47.03	0.61	37.7	56.2	40.3	38.8	22.0	5.0
H3 Inertia										
V9 Ilp	+1.04	–1.78	wrong	23.28	41.9	37.1	27.8	35.2	20.2	27.7
V10 Ipp	–1.35	–0.74	32.96	29.59	38.5	41.0	32.8	38.0	28.7	21.0
H4 Ideology										
V11 Pm	+14.87	+1.03	13.44	42.66	31.9	24.0	18.5	23.0	49.6	52.9
V12 Ppm	+6.75	+0.33	8.59	42.61	41.4	33.7	24.7	32.1	33.9	34.2
V13 Pco	+17.40	+7.31	10.28	12.69	32.3	20.8	17.1	15.5	50.7	63.7
V14 Pmaj	+0.71	+0.04	18.23	46.90	53.6	36.2	39.7	37.4	6.7	26.5
V15 Prw	+0.57	+0.15	9.53	22.48	58.3	50.1	37.7	45.8	4.0	4.0
H5 Welfare coalition										
V16 Wpub	–0.73	–0.81	20.24	8.28	55.6	51.0	41.0	46.6	3.4	2.4
V17 Wtra	–**1.66**	–0.04	3.14	46.62	64.0	39.6	35.4	37.4	0.5	23.0
V18 Wal	–0.83	–0.29	5.68	20.68	61.4	50.4	37.4	47.3	1.2	2.3
H6 Pressure										
V19 Rt	–5.71	+1.86	wrong	23.67	60.3	50.7	36.4	46.0	3.3	3.3
V20 Rct	+10.91	–**11.06**	11.73	wrong	55.2	53.3	41.5	39.0	3.3	7.7
V21 Rmo	+0.71	–1.92	wrong	11.15	47.1	52.0	47.2	46.3	5.7	1.6
V22 Rcmo	–3.07	+2.23	17.55	5.53	56.1	54.6	41.9	44.1	2.0	1.3
V23 Rpop	–0.62	+**4.58**	40.21	0.05	48.8	60.9	45.6	38.5	5.6	0.6

Notes: See Table 2.

Two puzzling findings appear in the table. One is that our one and only significant »wrong sign« appears - it is to Rct (change in municipal tax level). This is probably just a fluke - when the number of regressions presented are considered, there should be one wrong sign.

The second is that Wal (welfare coalition) works so much better in the aggregate than in the two regions. To explain this finding, the reader should turn back to Figure 3 presenting the point scatter. Almost half the variation in Wal disappears if one looks at the two regions separately. It is thus no wonder that it fails to work in each region and becomes significant in the aggregate.

Finally, it should be noted that all the ideological variables still fail; but they all continue to have

the right signs - this suggests that there might be something here; but the effect of ideology is at most very weak.

Table 5. Some specific general and neighbour effect

Area of specific market orientation	Effect (%) on MO-variable	P-value in t-test	Prediction in percent right	wrong	tie
Specific degree of market orientation explained by (same) specific degree of market orientation in neighbour municipalities					
Fire brigade	+**1.72**	0.01	75.5	17.3	7.1
Library book acquisition	-0.31	wrong	49.6	40.4	10.0
Library book binding	-0.10	wrong	45.4	43.3	11.3
Purchases of »normal« goods	+0.04	36.55	45.8	42.7	11.5
Ordinary household refuse collection	+**0.40**	0.05	54.1	16.9	29.0
Special household refuse collection	+0.25	11.35	49.9	38.9	11.2
Collection of garden garb. from househ.	+**0.43**	2.28	52.3	37.0	10.7
School sweeping/cleaning	+**0.65**	0.11	54.9	32.4	12.7
Transp. for the elderly and handicapped	+0.15	15.63	42.4	37.0	20.6
Ambulance service	-0.25	wrong	44.5	26.5	29.1
Transport of school children	+**0.50**	0.14	55.0	25.9	19.2
Transport of goods	+0.07	28.59	46.6	44.4	8.9
Specific degree of market orientation explained by general degree of market orientation in neighbour municipalities					
Fire brigade	+**0.44**	0.01	59.8	35.0	5.1
Library book acquisition	-0.04	wrong	47.2	45.7	7.1
Library book binding	+**0.25**	3.14	54.6	39.9	5.5
Purchases of »normal« goods	+0.08	22.06	50.5	43.8	5.7
Ordinary household refuse collection	+**0.12**	3.40	60.0	35.0	4.9
Special household refuse collection	+0.07	30.88	48.9	45.2	5.9
Collection of garden garb. from househ.	+0.19	10.73	52.1	42.3	5.6
School sweeping/cleaning	-0.05	wrong	47.6	45.8	6.6
Transp. for the elderly and handicapped	+0.11	14.75	51.1	42.5	6.3
Ambulance service	-0.10	wrong	52.1	42.4	5.5
Transport of school children	+**0.19**	2.91	56.4	38.9	4.7
Transport of goods	+0.06	34.55	46.7	47.3	6.1

Notes: See Table 2.

IV.4 Disaggregation to the individual tasks

Our MO-variable is an aggregate. We have also run the analysis for all the individual tasks. This has produced many results. Fortunately, most are as expected, and there is no reason to burden the paper with too much detail - so we shall bring only Table 5.[19)] The main results are:

19. A version of this paper with more detail will be available (in Danish).

1. The tasks which are explained the best are: (1) Fire brigade, (5) household garbage collection and (11) transport of school children. We fail to explain (2) library book acquisition, (4) purchases of normal goods and the other transport tasks. The remaining tasks gave mixed results.
2. Especially the neighbour-municipality effect of diffusion presents an interesting pattern.

The two sections of the table compare the diffusion of an effect as explained by (a) the *specific* neighbour effect as given by the average market orientation in that task in the neighbouring municipalities and (b) a *general* neighbour effect - as given by the average MO-variable in the neighbouring municipalities. It appears that the specific effect in the top half of the table is stronger than the general effect estimated in the bottom half of the table: The results are more significant in all but 3 of the 12 cases in the top section of the table, the number of coefficients passing the 5%-level are therefore higher as well.

This result suggests that concrete practical matters determine the use of the market. If the neighbours have done so in a particular field with success, then one may try as well. The general - and hence necessarily more ideological - experiences of the neighbouring municipalities count less. This is well in line with the general thrush of our results.

V. Conclusion: Understanding a complex pattern

The first point to note is the large cross-country variation in the MO (market orientation) of the municipalities. The pattern proves quite complex, but we have managed to explain some of the variation by a set of explanations, none of which dominates.

However, within the Copenhagen metropolitan area none of these explanations seems to work. There is little relation between the extent to which the market is used and local conditions in the municipalities. One reason might be history, as the metropolitan area was not included in the big municipal reform of 1970, as discussed. Also, there is an unusually strong interaction across municipal borders in the metropolitan area. It is worth mentioning that the municipal structure in the metropolitan area is under debate.

We have found that three types of theories help us understand the cross-country pattern in our MO-variable: (1) Market orientation is a modernization and hence subject to a diffusion process. (2) The diffusion might be blocked by a »welfare coalition«, if a large fraction of the population in the municipality receive their income from the public. (3) The diffusion might be speeded up if the municipality is under economic pressures. Finally, we have found that political ideologies do not matter significantly.

V.1 Market orientation is modernization and ideologies are irrelevant

The best variable characterizing the MO-behaviour of the municipalities proved to be the population size, while the variables describing the production structure worked less well. A working market for a service probably needs a community of a certain size. The MO will rise later in small and thinly populated municipalities.

Both variables describing the process of diffusion - the distance to a major town and the MO of the neighbouring municipalities - become very significant; but crowd each other out when they are used together. It is not surprising that neither variable works in the highly integrated metropolitan area. It is interesting to note that diffusion works better for the individual task than in the aggregate. That is, MO in school cleaning spreads from one municipality to the next, but not from general market orientation in one municipality to school cleaning in the next. The diffusion is concrete, not ideological.

Our last hypothesis - dealing with modernization and diffusion - was the inertia of persons and parties. Did it slow down the process if the same lord mayor or the same party continued ruling? We were somewhat puzzled that the effects of inertia proved very weak and insignificant. One reason may be that inertia was dominated by economic pressures.

The political parties have expressed strong preferences regarding market orientation at the national level, so we are studying a »hot« political issue. However, ideological factors rarely obtain significance in a model explaining municipal behaviour in Denmark.[20)] We spent considerable efforts trying to find *the* ideological variable in our MO-variable; but nevertheless, nothing we tried worked - a result well in line with the strongly pragmatic tradition in Danish local-government for solving local problems locally.

V.2 The »welfare coalition« and economic pressures

The two last ideas are factors slowing down or speeding up the process of increasing the MO.

The *welfare coalition* hypothesis looks at the share of the municipal population receiving the major part of their income from public sources. About 25% of the Danish voters are employed in the public sector and 14% are old age pensioners, where most receive tax-financed public pensions. 25% are unemployed at some time during the year, and finally 10-12% rely on various other social payments. There are some doble counting - but the aggregate number is still well above 60% at any given moment. Thus the median voter is well within this group in nearly all municipalities. It is characteristic for the Danish transfer payments that they are directly tax-financed - no pretense is made that pension or insurance funds are involved.

Our idea[21)] is that this »publicly paid« group constitutes a potential »welfare coalition« blocking the entry of market forces, which is seen as a threat to »their system«. The larger this group is relatively, the easier it must be to form a blocking coalition. Note that this is a political mechanism, but not a ideological one. This effect is clearly significant; but not so large that any increase in the market orientation is impossible. However, an offsetting mechanism is clearly called for.

Our offsetting hypothesis takes off from casual observations at the macro-level. We have seen several cases within the last 2-3 decades where major macro-economic crises have had strong effects on the structure of the otherwise very stable Scandinavian welfare states (Denmark in 1982 and Sweden and Finland in 1991). It thus appears that economic pressures can play an important role as a catalyst for change (cf, Olson, 1982).

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20. See Mouritzen (1991; Chpt 10), for a survey of results in the field including a few significant ones.
21. Developed in Christoffersen (1997).

We have therefore found a set of variables indicating if the municipalities are under economic pressure. It turns out that the strongest single explanatory variable is the most direct measure we have found for the underlying real pressure on the municipal budget. Economic pressures even turn out to dominate a strong welfare coalition and force municipalities to try the market as a cost cutting device.

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