

**Myth or reality? Does increased competition on the  
housing market in Sweden lead to lower rents?**

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# **Myth or reality? Does increased competition on the housing market in Sweden lead to lower rents?**

## **Abstract**

The aim of the study is to investigate if more competition leads to lower rents on the housing market. Data about the rent level for similar apartments in 30 cities in Sweden were available. Three hypothesis were formulated: (H1) Increased "internal" competition, measured by the market share of the municipal housing company (that dominates the market and is price-leader according to the Swedish system of rent regulation), leads to lower rents. (H2) Increased "external" competition measured by the price level or Tobin's Q on the market for single-family owner-occupied housing, leads to lower rents. (H3) Lower capital costs in the municipal housing company leads to lower rents.

The statistical analysis showed a strong correlation between the rent level and the level of external competition, but no such relation was found for the level of internal competition and the level of capital costs. It is argued that the results are consistent with a "monopoly" theory of the rental housing market where actors can co-ordinate their behaviour and avoid price wars that can be costly for all firms.

## **Key words**

rental housing market, rent level, competition, Tobin's Q,

## 1. Introduction

Increased competition is an important policy goal in most countries. It is believed that increased competition will lead to lower prices, reduced costs, more innovation and generally a stronger position for the consumer. Deregulation of many markets during the last decades has been motivated in this way. However, the experiences from this deregulation are mixed. Judging from the Swedish experience the deregulation of telecommunications and long-distance bus traffic was a success, while deregulation of the electricity market and domestic flights so far has neither reduced prices nor increased quality. The deregulation of the taxi-cab market led to higher prices but also a major increase in supply, making the net effect dependent on the time value of the consumer.<sup>1</sup>

A more efficient rental housing market is a high priority in Sweden, as there are shortages of rental housing in the expanding regions and high vacancies in the contracting regions. One proposal has been to increase competition by selling the whole or parts of the municipal housing companies that dominate the rental market in most municipalities. This paper attempts to evaluate what we should expect from such changes, especially given the mixed experiences of the above-mentioned structural changes on other markets.

We look at how far the current differences in rents between a number of municipalities can be explained by two types of competition. The first is what we call internal competition - competition from firms selling "identical" products, in this case competition between firms on the rental market. The second type is what we call external competition - competition from markets where good substitutes are sold, in this case competition from owner-occupied housing.

It should be underlined that we only look at the effect on the rent level. As mentioned above increased competition can have effects also in other dimensions, for example increasing the innovation rate and improving the services provided by the firms.

The outline of the paper is as follows. In the next section we give a short description of the institutional background to how rents are determined in Sweden. In section 3 we develop our hypothesis in more detail and in section 4 the method and data are presented. In section 5 we present the results and a concluding discussion can be found in section 6.

## **2. Institutional background**

In order to understand the relevance of the data and the hypotheses presented below it is necessary to have some basic knowledge of the structure of the rental housing market in Sweden.<sup>2</sup>

Municipal housing companies have dominated construction of rental housing after the Second World War. In 1990 the rental housing in Sweden was 41% of the Swedish housing stock, and the share of the municipal housing companies were 22%.<sup>3</sup> In the cities that are covered in this study the share of the municipal housing company varies from 25-75% (see below).

An important characteristic of the rental market in Sweden is that it is what Kemeny (1995) calls a unitary market. The municipal housing companies own houses in all parts of the market - from attractive inner city districts to less popular suburbs. There are no income limits

for tenants in municipal housing companies and it is becoming increasingly common that the companies to some extent select tenants in the same way as private firms. There is usually only one municipal company in each municipality. During the last decade the firms have also become more efficient and operate in a more professional way.<sup>4</sup>

The share of the municipal housing company in different parts of the city will of course be related to how much that has been built after the Second World War. The share is usually considerably higher in the suburbs, although some municipal housing companies have bought older houses in central parts of the cities to get a more mixed portfolio.

The situation is not altogether clear and there are differences between municipalities today, but in general the municipal housing company is not requested to make a profit. Only the total costs should be covered by the total rents, including a "normal" return paid to the local government for the funds directly provided by the local government. As the solidity of the firms usually is very low, the capital costs for the firms are in reality equivalent to the costs for loans.

Rents are (usually) determined by yearly negotiations between the municipal housing company and the local Tenants Union. These negotiations concern:

- The total increase in rents, which then determines how large cost the company can cover as a whole. In declining regions with large vacancies it is common that the rents do not cover the costs and the municipality is therefore compelled to support the company. In a number of cases the national government has also given economic support to

municipalities that could not afford to support their companies themselves. However, none of these municipalities are included in this study.

- How the rents should be changed for specific types of apartments. There are no government regulations or policies regarding to what extent the rent structure should be adapted to the market forces, and the situation varies somewhat from municipality to municipality. Some municipal companies have changed all rents proportionally and in others rents have been increased in attractive areas and decreased in less popular areas.

The core of the rent control system in Sweden is that a private landlord is not allowed to charge a rent that is more than 5% higher than the rent for a similar nearby apartment owned by a municipal housing company. The agreement between the municipal housing company and the local Tenants Union will therefore be binding also for the private landlords. A tenant in a privately owned house can go to court and have the rent evaluated, and the court can rule that the landlord has to reduce its rents.

In this way *the same kind of apartment in terms of size and standard will have roughly the same rent, independently of whether it is privately owned or owned by the municipal housing company*. This means that data from the municipal housing companies are representative for the general rent level.<sup>5</sup>

### **3. Hypotheses concerning causes of rent differentials between municipalities**

The starting point for this study was the observation that there were large differences in rents for similar apartments in municipal housing companies located in different cities and towns. This was somewhat surprising given the institutional structure presented above. It was generally believed that the rent should be roughly the same in all regions as construction costs has not differed much between different regions in the post-war period and as the municipal housing companies should set the rents so that the costs are covered. However, the data presented below show that the highest rents for a specific apartment type was roughly 50% higher than the lowest rents in the 30 cities under study. Moreover, in a similar study based on data from 1989, Jonsson (1992) found that the standard deviation from the average rental level was 7% for all municipalities (one apartment each).

We have tested three hypotheses that can explain these differences in rent levels between municipalities. In the following sections we present the ideas behind these hypothesis and how they were "operationalised" in the study.

#### **3.1 Hypothesis 1: The degree of "internal" competition**

With internal competition we simply mean competition from *other firms on the rental housing market*.

From the general literature on competition theory we can identify a number of factors that determines whether prices on a market will be close to the monopoly price or close to the

price on a perfectly competitive market (see e.g. Tirole 1988 p 240f and Vives 1999 p 306).

Below is a list of some factors that could be expected to be important in the context of the rental housing market:

- The number of firms in the market. The fewer the number of firms, the easier it is for them to co-ordinate their behaviour.
- The time horizon of the firms. If the firms have a long-term perspective the possible gains from co-ordination of their behaviour are higher and the possible losses bigger if price reductions are matched by rivals resulting in a drawn out price war.
- The price-elasticity of total demand. Collusion at the monopoly price might be harder to sustain if the price elasticity of demand is rather high. In such a case a firm that tries to take customers from the competitors by unilaterally reducing their price will not lose so much if their price reduction is matched by increased demand. The losses from a price war are higher if total demand is rather inelastic.
- The possibility for the firms to exchange information and communicate. Co-ordination of behaviour is easier if the firms can discuss their view of the current market situation and signal their views on what is in the best interest of the firms as well as their intentions. Naturally, we assume that formal cartels are prohibited.
- How easy it is to enter the market. A monopoly price is harder to sustain if it is easy to enter the market for a new firm. New competitors will push prices down.

A common way of measuring the degree of concentration on an oligopolistic market is the so-called Herfindahl index which is defined as the sum of the squares of the market shares of each firm (see e.g. Tirole 1988 p 221). Because of lack of data we measure the degree of concentration on the market in a cruder way by looking at *the share of the major actor on the*

*Swedish rental market* - the share of the municipal housing company. In the cities in this study the share varies between 25-75%. We have reasons to believe that this measure is not very problematic, as there are no big private actor on any specific rental market. Usually there are a few medium-sized private rental housing companies, but most private landlords have only a small number of apartments. There is therefore no reason to believe that there is a private "monopolist" in the cities where the municipal housing company has a relatively small share.

Our first hypothesis concerning the level of internal competition can therefore be stated, everything else equal, as follows:

*H1: Rents will be higher in municipalities where the municipal housing company has a higher share of the rental market*

If we look at the factors above that affect whether prices will be close to the monopoly level or not, the implication appears to be, at least for the rental market in Sweden, that we *should not expect a strong effect on rents from the degree of internal competition*. The price elasticity of demand on the rental is believed to be rather low in the short run. The actors usually have a long-term perspective, and as they are working on the same local market they can be expected to have ample opportunities to meet and signal their views and intentions. As housing construction is a time-consuming and risky business, there will be no fear of quick entry from competitors. All this indicates that even a rather large number of actors can co-ordinate their behaviour around what is in the best interest of the firms.

### 3.2 Hypothesis 2: The degree of "external" competition

The alternatives of the consumer will determine the pressure that a certain firm is under. One alternative for a consumer is to switch to another firm that sells roughly the same product. This is the internal competition discussed in the previous section. Another alternative is to look for a different product that fulfils the same basic need, in this case switching from the rental housing market to owner-occupation. The degree of external competition depends upon how easy and attractive such a switch is.

The attractiveness of switching to owner-occupation is determined by a number of factors - the income of the households, the possibility to get a mortgage, the price level today, expected price level in the future, expected income and tax level in the future, etc. We have in this study focused on the price level. The banks in Sweden work over the whole country and can be expected to follow at least approximately the same general rules in all parts of the country. The income distribution can be expected to have a rather similar shape in the cities under study and this means that the degree of external competition can be measured by looking at the price level, or a related variable, for a single-family house.

We have data about the price level for an "average" single-family house and we have data about Tobin's Q, defined as the quota between the price level of existing houses and the cost for producing a new similar house. A very high Tobin's Q indicates that the price level is *exceptionally* high and that the current supply can not meet the demand. It is probable that new housing will soon be constructed, which in turn would lead to a reduction in the price level of houses. Buying a single-family house in a situation where Tobin's Q is high might

therefore be considered a bad alternative, and a high Tobin's Q then indicates that external competition on the firms on the rental housing market is limited.

There are also arguments for using the price level directly instead of Tobin's Q as a measure of external competition. If the cost of production is high in the long run for single family houses then a low Tobin's Q may not imply that the market for owner-occupation is a good alternative for the households.

There may be more measurement problems with Tobin's Q as data about cost of construction can be uncertain especially when housing production is low as it has been in Sweden in recent years. However, as we have access to data about both the price level and Tobin's Q we could see there were very strong correlations between these two variables (0.984) and that the choice did not affect the results.<sup>6</sup> In this study we will focus on Tobin's Q, primarily because it could be considered to give a better picture of whether the market for single-family houses are "overheated".<sup>7</sup> Our second hypothesis will therefore be:

*H2: Rents will be higher in municipalities where Tobin's Q is higher*

Given the argument above that the degree of internal competition should not be expected to have a strong effect on rent, rents will probably be more sensitive to changes in Tobin's Q than to changes in the share of the municipal housing company.

### 3.3 Hypothesis 3: The level of capital costs

An obvious overall objective of municipal housing companies is that total rents should cover total costs. This includes both costs for operation and maintenance, and capital costs. The reason for formulating an hypothesis about a relation between rents and capital costs is that operating and maintenance costs to a higher extent can be seen as endogenous. In the theory of so-called X-efficiency originally formulated by Leibenstein (see for example Leibenstein 1979) the level of competition will affect the level of a firm's costs.

The capital costs of a firm are determined by a number of historical factors. The costs are higher if the firm has made a number of "poor" investments or chosen a low level of depreciation/amortisation. An example is that a number of municipal housing companies made poor investments during the property boom in Sweden in the late 1980s. The costs for the houses built or renovated during this period could not be covered by the rents from these houses and the effect could then be that rents in other houses - where the rent was below the market rent - was raised in order to cover the capital costs. Through mechanisms like this we expect that the firm's capital costs per apartment could effect the rent level.

As the solidity of the municipal housing companies are very low and as it is difficult to get direct information about the capital costs of the firms, we have chosen to formulate our hypothesis in terms of *book value per apartment*. Earlier studies have also shown a strong correlation between the financial situation of a municipal housing company and the two variables book value per apartment and the level of vacancies (see Lindqvist & Persson 1998).

Our third hypothesis is then:

*H3: Rents will be higher in municipalities where the municipal housing company has a higher book value per apartment*

### **3.4 Other factors?**

Is there a need to include any other general explanatory factors than the three discussed above? It is common in studies of rents to include the level of vacancies, but we have chosen not to do this. We have two reasons for excluding this variable. One is that the vacancy level is often used as a proxy for the general level of demand on the housing market. In our model the general level of demand is instead captured through Tobin's Q. The idea is that an important effect of low demand is that there will be increased external competition and that this puts a pressure on housing rents. Including both vacancies and Tobin's Q could lead to multicollinearity problems in the estimation. The second and most important reason is that a big firm can affect the level of vacancies by demolishing houses that are not profitable to keep in the housing stock. During the 1990s a considerable number of housing companies have demolished apartments, predominantly in areas with economic problems and out-migration. The level of vacancies might therefore not be a good proxy for the general level of demand, as differences in vacancies might be related to differences in the policies chosen in the municipalities.

We have data for apartments with a specific number of rooms and ages (see below) and we will use proxies for controlling for differences in these two dimensions. As age and standard

are very highly correlated in the Swedish municipal housing companies, there is no need to control for differences in standard.

## **4. Data and statistical method**

### **4.1 Data about rents**

We have used a data set collected by the Swedish Union of Tenants. The local branches of this organisation collect these data as part of their preparations for rent negotiations with the municipal housing companies. The data set concerns the rent for "typical" apartments in nine different groups. There are three age groups (houses built 1960-62, 1980-82 and 1990-92) and three size groups (2-,3- and 4- room apartments)<sup>8</sup>. Data from 30 major cities has been used in this study, based on reports compiled by the Swedish Union of Tenants each year since 1992. The idea is to follow the same apartment over time, unless there are any major renovations in the apartment. Although we have only used the data for 2000, we have checked that the rents show a similar pattern for all the years 1996-2000.

We have discussed the data collection process with the persons in charge of the data collection project and we believe that the quality of the data is reasonably good. All local Tenants' Union received instructions that apartments selected should be "typical" for the specific construction year and not be subject to any of the rent discount schemes that flourish among Swedish housing companies presently.

The size of the “typical” apartment with a certain number of rooms differs to some extent between municipalities. We have therefore adjusted the rents depending on the size of the apartment; downwards if the apartment was bigger than the average and upwards if it was smaller than the average based on an assumption that the effect of size on rents is linear in the relevant interval. If the apartment was 10% bigger than the average apartment of that type we have then reduced rents with ten percent. When we refer to rents in the rest of the article we are referring to these “size-adjusted rents”.

As can be seen from Table 1 below there are major differences in rents for all categories of apartments.

*Table 1* Overview of the rent levels. SEK per month (1 Euro is approximately 9,25 SEK, 2 February 2002)

No. of rooms	Construction year	Average rent	Standard deviation	Min	Max	Difference min-max	Difference 10-90 percentile
2 rooms	1960-62	3365	325	2824	4423	1599	792
	1980-82	4015	441	2640	4909	2269	1109
	1990-92	4481	554	3248	5576	2328	1479
3 rooms	1960-62	4089	381	3437	5339	1902	906
	1980-82	4725	362	3828	5433	1605	1100
	1990-92	5334	600	3887	6655	2768	1646
4 rooms	1960-62	4948	450	3712	5766	2054	1176
	1980-82	5662	445	4931	6519	1588	1313
	1990-92	6368	705	5056	8006	2950	1964

We have also made a nonparametric rank-sum test to verify that there are systematic differences between municipalities. What if municipalities with low rents for one type of apartment had high rents for another? For each of the nine categories of apartments the municipalities were ranked from the lowest to the highest rent. The average rank was then calculated. The result showed an interval from a rank of 5.2 to a rank of 27.1 and a continuum of ranks between these, which indicate that there are very clear systematic differences between municipalities.

#### **4.2 Data about the explanatory factors**

##### *The share of the rental market of the municipal housing companies*

From SABO (the central organisation of municipal housing companies) we have received data about the number of apartments owned by the local housing company. The last national survey of the total number of apartments and type of ownership was made in 1990. We have data about new construction and demolition for each year since 1990. However, we lack information about conversions from rental housing to owner-occupation and such conversions have become increasingly common since 1999 although mainly in Stockholm. There is data about conversions to owner-occupation for Stockholm since the census in 1990 and it appears that only 4 percent of the apartments have changed ownership between 1990-1998. The data used in this study is from 1 January 1999 and conversions should therefore not have a big impact on the results. We have decided to simply disregard the conversions. Albeit national

data is missing, we have reasons to believe that such conversions have been of small importance outside Stockholm.

As can be seen from Table 2 below the municipal housing companies share of the rental market varied from 27% to 73%, with an average of 46%.

### *Tobin's Q*

The Institute of Housing Research, Uppsala University, calculates Tobin's Q - the quota between the price level of existing houses and the cost for producing new houses of the same type - for each municipality in Sweden yearly. They adjust public data on actual sales to find the expected price per square meter for an "average" house. Data about construction costs is obtained from Statistics Sweden. This is a regional index based on reported costs for recently completed projects. There are weaknesses in the data about construction costs as construction has been low in recent years.

As can be seen from Table 2 below Tobin's Q varies from 0.62 to 1.82, with an average of 0.92.

### *Book value per apartment*

The data about book value per apartment in the municipal housing companies have been provided by SABO and is based on annual financial reports from the companies.

The book value per apartment varied from SEK 134 000 to SEK 362 000 with an average of SEK 239 000 (see Table 2).

Table 2: Data on the explanatory (independent) variables

	Book value (per apartment) 1999	Ranking	Share of the rental market 1999 (percent)	Ranking	Tobins Q 2000	Ranking
Borlänge	185 207	27	63.368	4	0.6229	30
Borås	214 823	21	34.176	24	0.6798	25
Eskilstuna	255 967	9	27.638	28	0.7965	17
Falun	227 064	17	51.162	13	0.6527	28
Gävle	207 655	24	66.409	3	0.7439	23
Göteborg	234 404	13	53.699	9	1.4082	3
Halmstad	172 917	29	49.255	14	0.8059	16
Helsingborg	270 535	8	35.591	22	1.1202	6
Jönköping	250 769	10	29.611	27	0.8177	14
Kalmar	310 518	3	32.780	25	0.8467	12
Karlskrona	362 157	1	38.989	19	0.7951	18
Karlstad	288 550	6	29.935	26	0.7285	24
Kristianstad	249 243	12	56.038	7	0.6606	27
Linköping	223 343	18	51.455	12	0.9388	10
Luleå	207 018	25	62.669	5	0.7921	19
Lund	316 833	2	53.123	10	1.1081	7
Malmö	174 095	28	24.663	30	1.3310	4
Norrköping	215 143	20	34.712	23	0.8072	15
Skövde	133 968	30	41.101	18	0.6275	29
Sollentuna	212 279	23	72.667	1	1.5780	2

Stockholm	230 035	16	41.393	17	1.8195	1
Sundsvall	230 322	15	26.843	29	0.6757	26
Södertälje	212 775	22	51.680	11	1.1777	5
Trollhättan	284 597	7	44.419	16	0.7465	22
Umeå	306 725	4	54.586	8	0.9396	9
Uppsala	223 051	19	36.023	20	1.0654	8
Västerås	301 697	5	47.380	15	0.8467	13
Växjö	231 392	14	68.879	2	0.7528	21
Örebro	200 578	26	58.472	6	0.8862	11
Östersund	249 829	11	35.928	21	0.7684	20

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*Final comments about the explanatory variables*

From the data in Table 3 we can see that there are considerable variations in all the explanatory factors between the municipalities.

Table 3: Overview of the explanatory variables

	Average	Standard deviation	Min	Max	Interval min -max
Market share of municipal housing company (%)	45.82	13.53	24.66	72.67	48.00
Tobin'sQ	0.918	0.293	0.623	1.820	1.197
Book value per apartment (SEK)	239 400	49 300	134 000	362 200	228 200

Correlations between the explanatory variables are reported in Table 4 below, and it can be observed that the correlation generally is low which indicates that it should be possible to identify the role of each of the factors.

Table 4: Matrix of correlations between the explanatory variables

	Market share of municipal housing company	Tobin'sQ	Book value per apartment
Market share of municipal housing company (%)	1.000	-	-
Tobin's Q	0.080	1.000	-
Book value per apartment	-0.180	-0.028	1.000

We have used data about rents for the year 2000. Data about book value and market share was only available for the year 1999. As both book value per apartment and market share change slowly over time, and as there might be a time lag between these variables and the rent level we do not think that this difference may cause any problems for testing our hypotheses.

### 4.3 Method

The results presented in the next section are based on the following linear regression equation:

$$R_{mi} = \beta_0 + \beta_1 M_m + \beta_2 T_m + \beta_3 B_m + \beta_4 DA1_{mi} + \beta_5 DA2_{mi} + \beta_6 DS1_{mi} + \beta_7 DS2_{mi} + \varepsilon_{mi}$$

where

R = Rent

M = Market share

T = Tobin's Q

B = Book value per apartment

DA1 = dummy for those built 60-62, elsewhere 0

DA2 = dummy for those built 90-92, elsewhere 0

DS1 = dummy for 2-room apartments, elsewhere 0

DS2 = dummy for 4-room apartments, elsewhere 0

m is a municipality index

i = 1, ..., 9

There are no specific reasons for choosing the linear form, but we have deliberately chosen just to test our initial hypotheses using this standard format. A general discussion about the advantages and disadvantages of “specification searches” and “data mining” can be found for example in a special issue of Journal of Economic Methodology (2000).

The coefficients have been estimated by the OLS method.

## 5. Results and discussion

The results concerning the explanatory factors can be found in Table 5 below. All the dummies for age and size were significant and of the expected sign and we will not include them in the rest of the discussion.

*Table 5.: Results from the regression analysis*

	Coefficient	Standard deviation	t-value
Constant	4088.868	192.287	21.264
Market share (%)	-3.912	1.939	-2.018
Tobins Q	736.692	88.097	8.362
Book value (thousand SEK per apartment)	0.299	0.530	0.564
R <sup>2</sup>	0.807		

The high  $R^2$  indicates that a considerable part of the differences in rent between the municipalities could be explained by the factors that were included in the equation. If we look at the results from the perspective of our hypothesis we can see that the data is consistent with one of our hypothesis:

*Rents are significantly higher in municipalities with a high Tobins Q (H2).*

An increase in Tobins Q with one-tenth increases the rent with roughly 1,5% for the average apartment.

However, the data is inconsistent with the other two hypotheses. The share of the municipal housing company of the market for rental apartment has a significant effect on the rent level, but in the wrong direction compared to our hypothesis (H1). An increase in the market share of the municipal housing company is correlated with a lower rent level. However, the effect is small and the level of significance is just above the accepted level.

No significant relation could be found between the rent level and the book value per apartment (H3).

These results are also consistent with the speculation in section 3.2 that external competition - measured by TobinsQ - puts a higher pressure on rents than internal competition - measured by the market share of the municipal housing company.

The results do not contradict the view that the major firms on the rental housing market can co-ordinate their behaviour and act as a monopolist. The exact degree of concentration on the

rental housing market does not appear to have any significant effect of the rent level. The fixed capital costs of a monopolist will not affect the price that the monopolist charges, but the elasticity of the demand curve will be important. And this elasticity will to a large extent be determined by the availability of substitutes, for example in the form of inexpensive owner occupied housing.

The municipal companies with high rents and high Tobin's Q are predominantly located in the larger cities and towns. Apart from external competition, there are some other factors that may explain the correlation between Tobin's Q and the rent level. SABO has statistics that show that municipal companies in smaller cities and towns usually have somewhat lower administrative costs. For an average apartment in our sample with about 80 sq.m., this may explain SEK 82 or about 10% of the impact from Tobin's Q. This may be related to the argument about X-inefficiency above: Municipal companies in regions with high demand for housing do not have the same incentive to reduce their costs since apartments are easily let out anyhow.

It is also possible that the leading role of municipal companies in the rent negotiation system may have an impact. Cities and towns with a low demand for housing may be pressured to reduce rents or otherwise the private sector may take advantage of the rent setting system by lowering rents just below the level of the municipal companies and thereby avoid vacancies. However, this concern would not create an incentive to lower the rent level if the municipal housing company believes that small private landlords will do this at any rent level.

The most surprising result was the negative correlation between the share of the municipal housing company and the rent level. The larger the share of the municipal housing company,

the lower the rent level in the municipality. A number of factors might explain this, e.g. economics of scale or that a smaller municipal housing company will have a higher share of households with social problems which increases costs. However, it was not a strong effect quantitatively: According to the results an increase in the market share with 10 percentage points tended to lower the rent with only 39 SEK, which is less than 1%. Consequently it may perhaps not be meaningful to further speculate about the explanation for this result.

## **6. Concluding comments**

The most interesting result, as we see it, is that "external" competition seems to have a much stronger effect on the rent level than "internal" competition. This would have some interesting policy implications. If we want to increase the pressure on the firms on the rental market, the most important change of policy might then be to make it easier for households to leave this market and enter the market for owner-occupied housing. A worrying tendency from this perspective in Sweden is that a large group of households do not seem to have any other option than the rental housing market. This depends partly on the system of housing allowances which is more generous towards tenants and partly on the criteria used by the banks when deciding about whether to give a loan or not. Since many households do not have any real choice, the landlords can charge high rents and even increase them, and still find customers. Especially tenants with housing allowances and other kinds of social support are not very price sensitive.

The weak relation between price and demand would exist especially in the "low-income" bracket as tenants with higher income have more alternatives. The elasticity of demand would be higher in the "high" end of the market, which would put pressure on the rent levels. This could explain why level of vacancies seems to be higher at the "low" end of the market.

The "monopoly" model of the rental housing market is also consistent with the high vacancies that we see in Swedish regions with depopulation. A low elasticity of demand will not make it profitable to lower the rents - and even if there are several firms on the market, no one has any interest in starting a price war. The data presented in Bruner & Lind (1998) supports this view.

Even if the level of "internal" competition do not have any strong effect on the rent level, increasing internal competition might still be important. As underlined by e.g. Bengtsson & Kock (2000), firms might co-operate in some dimensions and compete in others. The firms might co-operate about the price to avoid a price war that could be costly for all, but still compete about the best customers by offering higher service quality and generally attaching more importance to the views of the tenants. In this way increased internal competition could be good for the households. In a continuation of the project presented in this paper we plan to look at these non-price effects of increasing internal competition.

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## Endnotes

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<sup>1</sup> See for example Lind & Wigren (1993).

<sup>2</sup> For more information see e.g. Turner (1997), Svensson (1998) and Donner (2000).

<sup>3</sup> This is the most recent data. During the 1990s some municipalities have sold apartments to private rental companies and some rental apartments, foremost in Central Stockholm have been transformed into tenant owned apartments, but this does not change the general picture.

<sup>4</sup> This follows the general tendencies described in e.g. Boelhouwer (1999) and Priemus et al (1999).

<sup>5</sup> The data in Svensson (1998) gives empirical support for this.

<sup>6</sup> Data about the correlation and the results if the price level are used instead of Tobin's Q can be found in Atterhög (2001).

<sup>7</sup> Other studies have also used Tobin's Q for this purpose, for example Jaffee (1994).

<sup>8</sup> When describing apartments in Sweden, the living room is counted as a room contrary to the Anglosaxon tradition. For instance, a 3-room apartment in Sweden would therefore be equivalent to a 2-room apartment in the UK.