Rent-Control and Prices of Owner Occupied Housing

Jonas Häckner and Sten Nyberg

Department of Economics, Stockholm University
S-106 91 Stockholm, Sweden

Abstract

We examine the relation between rent control and prices of owner occupied housing in the presence of different qualities of housing. While a rent ceiling and the price of condominiums are substitutes if housing is undifferentiated, it is shown that this is not necessarily the case when housing differs in quality. A complete dismantling of rent-control may in fact increase the price of condominiums.

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1. Introduction

In many urban areas the housing market is subject to different types of regulation, like interest rate subsidies, housing related benefits and taxes, and various restrictions on the price mechanism. The latter normally apply only to rental housing. Rent controls have repercussions on markets for close substitutes, like condominiums. This paper examines the effect of rent control on the prices of owner occupied housing in a housing market where housing varies in quality, e.g. locations differ in attractiveness.

Previous studies have examined the effect of rent control on prices of uncontrolled housing when housing is a homogenous good. Fallis and Smith (1984) study the effects of a rent control regime where new, or vacated, units are exempt. They conclude that the rents on the uncontrolled segments of the market are likely to be higher in the presence of rent control. This is also true in our model. Allowing housing to differ in quality may, however, under some circumstances lead to the opposite relation between the regulated rent and the unregulated price.

When housing quality varies we would expect to see some degree of income based segregation in an unregulated market. Housing expenses account for a substantial share of the budget for most households and differences in income are likely to affect the willingness-to-pay for living at a more attractive location. Wealthy individuals are willing to spend more to acquire apartments in attractive areas whereas people that are less well off but own attractive apartments may find it advantageous to sell. The objective of rent regulation is often to strengthen the position of tenants vis-à-vis landlords and to moderate segregation.

Since trading in rent controlled contracts is normally not allowed, or revokes the rent control, only condominiums or uncontrolled rental housing can be traded and the supply of housing in attractive areas is reduced. The rationing mechanism determining who obtains rent controlled housing in attractive areas also determines the composition of households seeking condominiums in attractive areas which in turn determines the price.

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1 Gould and Henry (1967) study the effects of a price control in one market on the price of an uncontrolled substitute and find that, in general, it can move in either direction. Fallis and Smith (1984), however, argue that this analysis has little direct bearing on the housing market since it allows consumers to simultaneously consume both the controlled and the uncontrolled good.

2 For example, the scarcity rents earned by landlords may be perceived as "unjust". Fallis (1988) suggests that different attitudes towards equality is the prime explanation to why rent control is more commonly observed in Europe than in the USA.
In our analysis each individual is assumed to have an equal chance of getting a rent-controlled apartment. While no assumptions are made about the income distribution, except that it is continuous and exogenously given, we restrict the analysis to two qualities of housing for the sake of simplicity. It should also be noted that we treat housing exclusively as a consumption good and thus abstract from its role as an investment good.\footnote{For a survey including a discussion on the investment good aspect see Smith, Rosen & Fallis (1988).}

We first examine a rent ceiling that binds only in the attractive area and then proceed to the case where it binds in both areas. In the former situation we find an unambiguous negative relation between the controlled rent level and the condominium prices in the attractive area. This is no longer true when rent control binds in both areas. The direction of the effect can be partitioned into two counteracting effects. Lower controlled rents attract an increasing number of individuals with low incomes thus crowding out some wealthier individuals from the rationed rental housing market. This raises the average income among non-tenants which puts an upward pressure on prices of attractive condominiums. On the other hand lower rents may induce some relatively well off people to move from condominiums in attractive areas to very cheap rental housing in less fashionable neighborhoods. The relative strength of these flows depends on factors like the shape of the income distribution, the availability of housing benefits and the size of the stock of rental housing in less exclusive areas.

In the long run a number of considerations that we do not address come into play. For instance a strict rent control may adversely affect the incentives for proper maintenance which in the long run affects both the quality and the stock of rental housing\footnote{For a discussion see Albon & Stafford (1990).}. Furthermore, a rent regulation may induce conversions of rental housing into owner occupied housing. A low controlled rent makes construction of rental housing less profitable in the absence of subsidies. Policy responses to problems like these include a variety of rules, subsidies and tax breaks.

We end the paper with a brief discussion of the implications of our results for the political support for rent control. In the literature, to the best of our knowledge, relatively little attentions has been given to the political economy of rent control. In Epple (1994), a rent ceiling is chosen by majority voting in a city inhabited by two groups, permanent residents, living in controlled housing and with a right to vote, and temporary residents, living in uncontrolled housing. There is link between the price ceiling and the stock of controlled housing which introduces a tradeoff...
between a low rent and a high probability of losing a controlled apartment. As pointed out by Arnott (1995) an important element missing in most models is an analysis incorporating owner-occupied housing. Changes in the regulated rent are likely to have repercussions on the prices of owner-occupied housing. Consequently, both tenants and home owners have political preferences over the level of rent control.

The paper is organized as follows, first the basic model is presented and the conditions for equilibrium in a free market are stated. Then we examine, in turn, the case where the price ceiling binds only in the attractive area and the case where it binds in both areas. In each case the relation between the regulated rent and condominiums prices is derived. The paper concludes with a discussion on the implications of our results for the political support for rent control.

2. The Model

Consider a simple housing market with two forms of housing, rental housing (R) and owner-occupied housing or condominiums (C). For simplicity, suppose there are just two quality levels, attractive locations (A) and basic locations (B). Condominiums and rental housing of the same quality are assumed to be perfect substitutes.

Space constrains construction in the most attractive locations thus limiting the supply of housing there. We simply assume that the supply of housing in the attractive area is fixed. The scope for construction is usually better in B locations and it is assumed that new capacity can be added at a constant marginal cost. Hence, the cost of living in a condominium, or an unregulated rental apartment, in area B is simply determined by exogenous factors like the marginal cost of production and the opportunity cost of capital, i.e., the rate of return on alternative investments. We denote this cost $p_B$. Thus, anybody wishing to rent, or buy, at the price $p_B$ can find housing, at least in the long run. Finally, let $S^R_x$ and $S^C_x$ denote the supply of rental apartments and condominiums in location $x, x \in \{A, B\}$.

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5 We will, for now, disregard that construction is, by and large, irreversible and that negative demand shocks may lead to market clearing prices below this level.

6 Imperfect information and consumer search costs may however drive the price up pushing some consumers out of the market and giving rise to vacancies. New construction may erode any profits.
Consumers are assumed to have identical preferences but to differ with respect to income, m. Let consumer utility be described by a utility function defined on two arguments, the quality of housing, x, and a composite good, y: u(x, y), such that u: \( \mathbb{R} \times \mathbb{R} \rightarrow \mathbb{R} \). Utility is assumed to be increasing at a decreasing rate in both arguments, such that marginal utility of y tends to zero as consumption of y goes to infinity. Furthermore, the marginal utility of y is assumed to be non-decreasing in housing quality. Finally, we assume that both goods are normal and that \( \lim_{y \to 0} u(x, y) = -\infty \).

Consumers maximize utility given their budget constraints \( m = p + y \) where the price of y is normalized to one. Individuals with low incomes may prefer not to “consume” housing, e.g. young adults living with their parents, students that share apartments with room mates, poor homeless individuals or potential residents living outside town. In this case we let \( x = 0 \) and \( p = 0 \). For any quality level, \( x \), \( p \) determines the consumption of other goods. The distribution of income is described by some continuous density function \( g(m) \) defined on positive incomes. Without loss of generality, we assume that \( g(m) > 0 \) for all \( m > 0 \). The corresponding distribution function is denoted \( G(m) \).

The consumer’s choice of housing quality is determined by the prices and the consumer’s income. In fact, for any two qualities such that the higher quality fetches a higher price, there is a unique critical income level such that individuals with higher incomes prefer the higher quality and those with lower incomes prefer the lower quality. The assumptions on the utility function ensure that a sufficiently rich individual is prepared to pay a very large premium even for a small increase in quality. We define the critical income for a comparison between qualities \( x \) and \( z \) as a function, \( m_{xz}(p_x^i, p_z^j) \), where superscripts denote the type of housing, rental or condominium.

For example, the threshold income level below which the demand for housing is zero is given by \( m_{b0}(p_B, 0) \), i.e. where \( u[0, m_{b0}(p_B, 0)] = u[B, m_{b0}(p_B, 0) - p_B] \). We can illustrate this in a simple graph where the utility of the threshold income has been normalized to zero. See figure 1. The curves indexed with 0 and B represent the utility as a function of income for no housing and housing in area B respectively. The utility of the latter choice drops asymptotically towards minus infinity along the dotted vertical line through \( p_B \).

FIGURE 1 ABOUT HERE
The critical income level at which an individual is indifferent between a condominium in area B and one in A, \(m_{AB}(p_A, p_B)\), depends on the condominium price in area A, \(p\), which is endogenous in the model. In the absence of rent control \(p\) refers to both rental housing and condominiums, since the prices then coincide. The equilibrium value of \(p\) is, among other things, determined by the level of rent control. We will, however, assume that conditions are such that \(m_{AB}(p_A, 0) > m_{B0}(p_B, 0)\) throughout the paper. That is we will not consider situations where the stock of condominiums in area A is so large, and the market clearing price is so low, that there is no demand for housing in area B at \(\bar{p}_B\).

Graphically we can represent the utility of living in area A by a curve that is at least as steep as that corresponding to living in area B and that is shifted to the right by a distance equal to the difference in rent between the areas. See figure 2. The preferred type of housing depends on the individual’s income and is given by the envelope of the utility curves.

We proceed the analysis in the next section by examining three regimes; no rent control, a controlled rent that binds only in the attractive area and a controlled rent that binds in both areas.

**FIGURE 2 ABOUT HERE**

### 2.1 The Unregulated Market

Let us first examine an unregulated market with price taking landlords maximizing profits. The rent in area A will then be set at a level that gives no vacancies and makes the marginal tenant indifferent between renting an apartment in area A and renting one in area B. Since rental housing and condominiums are assumed to be perfect substitutes they will be priced equally in equilibrium. Hence, the equilibrium price is given by the unique \(p\) that satisfies

\[
S_A^R + S_A^C = 1 - G(m_{AB}(p_A, \bar{p}_B))
\]  

The equilibrium condition for market B determines the supply of housing in that area.
\[ S_B^R + S_B^C = G[m_{AB}(p_A, \bar{p}_B)] - G[m_{B0}(\bar{p}_B, 0)] \]  

(2)

Since individuals with incomes below \( m_{b0}(\bar{p}_B, 0) \) demand no housing \( \sum S = 1 - G[m_{b0}(\bar{p}_B, 0)] \).

2.2 Rent control in the attractive area.

In this section we examine the effect on \( p_A \) of changes in \( p^R \) when rent control only binds in area A. This means that \( p^R \) is below the market clearing price for housing in area A but above \( \bar{p}_B \). Living in a rent controlled apartment in area A is then more attractive than living in area B for individuals with incomes above \( m_{AB}(p^R, \bar{p}_A) \). The utility of individuals living in rent controlled apartments in area A can easily be illustrated in a graph. It is simply the utility curve corresponding to living in a condominium in area A shifted to the left by a distance equal to the price difference. See figure 3.

Before stating the condition determining the demand for rental housing in area A we may note that: (1) Regardless of \( p_A \) there is excess demand for rental housing in area A. (2) \( p_A > p^R \), or else sellers of condominiums in A can do better by raising prices. Consequently, anyone who prefers buying a condominium in area A to living in area B would be even better off in a rent controlled apartment in A. (3) If \( p^R \) is very low it might be the case that all individuals prefer a rental apartment in A to a condominium in B. All individuals with incomes above \( m_{A0}(p^R, 0) \) would then accept a rental apartment in A. For a higher \( p^R \) some individuals will prefer a low price condominium in B to a rental apartment in A. In that case, only those with an income higher than \( m_{AB}(p^R, \bar{p}_B) \) would accept a rental apartment in A. Thus, agents with incomes above \( \max\{m_{AB}(p^R, \bar{p}_B), m_{A0}(p^R, 0)\} \) prefer rental housing in A to all other alternatives.

The excess demand for rent controlled apartments in A necessitates rationing. The probability of being offered a rent controlled apartment, \( \theta_A \), is assumed to be independent of income and thus the income distribution of the tenants will reflect the income distribution above
max{m_{AB}(p^R, \bar{p}_B), m_{A0}(p^R, 0)}. In order for demand to equal supply this segment of the distribution will be "thinner" by a factor $\theta_A$. The equilibrium condition may thus be written as:

$$S^R_A = \theta_A(1 - G[\max\{m_{AB}(p^R, \bar{p}_B), m_{A0}(p^R, 0)\}])$$

(3)

In the choice between a condominium in area A and a condominium (or rental apartment) in area B agents with incomes exceeding $m_{AB}(p_A, \bar{p}_B)$ will prefer the former.

$$S^C_A = (1 - \theta_A)(1 - G[m_{AB}(p_A, \bar{p}_B)])$$

(4)

Like before the supply in area B adjusts to clear the market.

$$S^R_B + S^C_B = (1 - \theta_A)[G(m_{AB}(p_A, \bar{p}_B)] - G[\max\{m_{AB}(p^R, \bar{p}_B), m_{B0}(\bar{p}_B, 0)\}])
+ \max[0, G[m_{AB}(p^R, \bar{p}_B)] - G[m_{B0}(\bar{p}_B, 0)])$$

(5)

Having established the equilibrium conditions for all markets we proceed to determine the relationship between the regulated rent and the condominium price in A.

**Proposition 1:** If the rent control only binds in area A then a reduction in the regulated rent will raise the price of condominiums in area A.

**Proof:** The effect of changes in $p^R$ on $p_A$ is determined recursively. First, note that $\max\{m_{AB}(p^R, \bar{p}_B), m_{A0}(p^R, 0)\}$ is continuous and increasing in $p^R$. Consequently, $\theta_A$ also increases in $p^R$ (equation (3)). Finally, equation (4) then requires $p_A$ to decrease in $p^R$. □

The above proposition conforms with the standard results. The mechanism driving the result is simple. A decrease in the controlled rent either induces an inflow of previously "homeless" agents.

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7In Stockholm, the regulatory authorities have allocated the rent controlled apartments according to a mixture of principles. These include queue time, whether or not the applicant has an urgent "need" for the apartment and whether or not the applicant previously has lived close to it. Income has not, however, been considered relevant for the decision.
to area A or an influx of low income individuals previously living in area B. In both cases higher income individuals are crowded out from the rental housing market in A. This in turn drives up the price of condominiums in the area.

2.3 A rent ceiling binding in both areas

Now, consider a rent ceiling that binds in both areas, i.e. $p^R < p_B$. Thus, rent controlled apartments in B are clearly preferred to condominiums in B, but not necessarily to condominiums in A. We first determine how $p^R$ influences the probability of receiving a rent controlled apartment. Then we examine the effects on $p_A$ of marginal as well as non-marginal changes in $p^R$.

When the rent ceiling binds in area B there are new critical income levels to take into account. One thing does get simpler though - everyone with an income above $m_{A0}(p^R, 0)$ prefers living in a rental apartment in A. The rationing technology is the same as in the last section, giving all such individuals equal probability, $\theta_A$, of obtaining a rent controlled apartment in A. The equilibrium condition determines this probability.

$$S^R_A = \theta_A(1 - G[m_{A0}(p^R, 0)])$$  \hspace{1cm} (6)

For those who are not so fortunate, there is still some chance of getting a rent controlled apartment in B. This is the preferred option for individuals with incomes in the interval $[m_{B0}(p^R, 0), m_{AB}(p_A, p^R)]$, where $p_A$ has yet to be determined. Individuals with higher incomes prefer a condominium in A. We know a priori that there will be excess demand for rent controlled apartments in B since they are more attractive than condominiums in B, which in turn were assumed to face a positive demand. In analogy with the rationing mechanism for area A we let $\theta_B$ denote the probability of receiving a rental contract in area B.

$$S^R_B = \theta_B(1 - \theta_A)(G[m_{AB}(p_A, p^R)] - G[m_{B0}(p^R, 0)])$$  \hspace{1cm} (7)

The prospective buyers of condominiums in A are found in two income groups: Those with incomes above $m_{AB}(p_A, p^R)$ who did not get a rental contract in A and those with incomes in the
interval \[ [m_{AB}(p_A, p_B), m_{AB}(p_A, p^R)] \] who did not get a rental contract in either of the areas.

\[
S^C_A = (1-\theta_B)(1-\theta_A)(G[m_{AB}(p_A, p^R)] - G[m_{AB}(p_A, \bar{p}_B)]) + (1-\theta_A)(1-G[m_{AB}(p_A, p^R)]) \quad (8)
\]

Those who find area A too expensive can always buy a condominium in B. Like before, the supply of condominiums in area B can be expanded at a constant marginal cost, but since the controlled rent is below \( \bar{p}_B \) there will be no construction of rental housing.

\[
S^C_B = (1-\theta_B)(1-\theta_A)(G[m_{AB}(p_A, \bar{p}_B)] - G[m_{B0}(\bar{p}_B, 0)]) \quad (9)
\]

In figure 4 we illustrate the composition of individuals, in terms of income, that choose any given housing quality. The AR segment, stretching from \( m_{AB}(p^R, 0) \) to infinity, illustrates the composition (incomewise) of the group living in rental apartments in A. Similarly, the IR segment represents the group living in rental apartments in B. The AC1 wedge consists of individuals that prefer a condominium in A to a rent controlled apartment in B. The area to the left of that, AC2, represents the group preferring a condominium in A to one in B. Further to the left are those who choose to live in B, BC. The remaining segments consist of individuals that demand no housing.

**FIGURE 4 ABOUT HERE**

We now proceed to determine the effects of changes in the regulated rent on the price of condominiums in area A. To do this we first need to pin down how rent control affects the probabilities of receiving a rent controlled apartment. While these effects are intuitive they nevertheless are of some practical importance. Second, we need to show that the demand function for condominiums in area A is indeed downward sloping.
**Proposition 2:** If the rent ceiling binds in both areas then an increase in the regulated rent increases the probability of getting a rent controlled apartment in both areas.

**Proof:** That $\theta_A$ increases in $p^R$ follows from (6). Condition (7) implies that $\theta_B$ can only decrease in $p^R$ if $G[m_{AB}(p_A, p^R)]$ increases enough to offset the increases in $G[m_{00}(p^R, 0)]$ and $\theta_A$. Since $G[m_{AB}(p_A, p^R)]$ decreases in $p^R$ for a given $p_A$, this requires $p_A$ to increase in $p^R$. Adding (7) and (8) yields: $S_A^C + S_B^R = (1 - \theta_A)[1 - G[m_{AB}(p_A, \bar{p}_B)] + \theta_B(G[m_{AB}(p_A, \bar{p}_B)] - G[m_{00}(p^R, 0)])]$. This cannot hold if $\theta_B$ decreases and $\theta_A$, $G[m_{AB}(p_A, p^R)]$ and $G[m_{00}(p^R, 0)]$ increase in $p^R$. Hence, $\theta_B$ must increase in $p^R$. □

**Lemma 1:** The demand for condominiums in $A$ decreases in $p_A$.

**Proof:** First, (7) implicitly defines $\theta_B = \theta_B(p_A, p^R)$ which is nicely behaved so we can derive

$$\frac{\partial \theta_B}{\partial p_A} = - \frac{\theta_B g[m_{AB}(p_A, p^R)]}{G[m_{AB}(p_A, p^R)] - G[m_{00}(p^R, 0)]} \frac{\partial m_{AB}(p_A, p^R)}{\partial p_A}$$

Second, differentiating the demand (the rhs of (8)) and simplifying, using $\partial \theta_B / \partial p_A$, gives us

$$(1 - \theta_A)\theta_B g[m_{AB}(p_A, p^R)] \frac{\partial m_{AB}(p_A, p^R)}{\partial p_A} \left\{ \frac{G[m_{AB}(p_A, p^R)] - G[m_{AB}(p_A, p_B)]}{G[m_{AB}(p_A, p^R)] - G[m_{00}(p^R, 0)]} - 1 \right\}$$

$$- (1 - \theta_A)(1 - \theta_B) g[m_{AB}(p_A, p_B)] \frac{\partial m_{AB}(p_A, p_B)}{\partial p_A} < 0. \ □$$

Changing $p^R$ has two counteracting effects on $p_A$. A lower regulated rent increases the number of low income individuals seeking rental apartments thereby crowding out some wealthier individuals, thus lowering the average income among tenants. This raises the average income among non-tenants which drives up condominium prices. We call this effect the “income distribution effect”. Second, an increasing number of relatively rich individuals accept rental apartments in area B, which reduces the demand for condominiums in area A, putting a downward pressure on $p_A$. This is referred to as the “demand shifting effect”.

The demand shifting effect is likely to dominate if the left tail of the income distribution is relatively thin, so that the inflow of low income tenants is modest as \( p^R \) is lowered. Thus, if rent regulation binds in both areas, and the income distribution is thin in the left tail, the relation between \( p_A \) and \( p^R \) is likely to be positive. Even if actual income distributions do not have thin left tails common institutional arrangements may induce practically the same consumer behavior as if they did. In particular, income related housing benefits may drastically reduce the price sensitivity of low income individuals.

If there is only a small amount of rental housing available in area B, the demand shifting effect is of course less important. Consequently, if the stock of rental housing in area B is sufficiently small relative to the stock in area A, then the income distribution effect will dominate, so that the relation between \( p_A \) and \( p^R \) is negative.

**Proposition 3:** The effect of changes in the rent ceiling on the prices of condominiums in A is ambiguous. (i) For a zero supply of rental apartments in B, \( p_A \) decreases in \( p^R \). (ii) If the supply of rental apartments in B is positive, but small changes in \( p^R \) do not affect \( G[m_{AB}(p_A,0)] \) or \( G[m_{B0}(p^R,0)] \), then \( p_A \) increases in \( p^R \).

**Proof:** (i) If \( S^R_B = 0 \), and thus \( \theta_B = 0 \), then \( S^C_A = (1-\theta_A)(1-G[m_{AB}(p_A, p^R)]) \). Thus, \( p_A \) decreases in \( p^R \), since \( \theta_A \) increases in \( p^R \). (ii) Using that (7) implicitly defines \( \theta_B = \theta_B(p_A, p^R) \), as in Lemma 1, we find that \( \partial \theta_B / \partial p^R = \partial \theta_B / \partial p_A (\partial m_{AB} / \partial p^R) / (\partial m_{AB} / \partial p_A) \), since \( g[m_{A0}(p^R,0)] = g[m_{B0}(p^R,0)] = 0 \). Differentiating the rhs of (8) wrt \( p^R \) and substituting for \( \partial \theta_B / \partial p^R \) yields

\[
(1 - \theta_A) \theta_B \frac{\partial m_{AB}(p_A, p^R)}{\partial p^R} \frac{\partial m_{AB}(p_A, p^R)}{\partial p^R} \left( \frac{G[m_{AB}(p_A, p^R)] - G[m_{AB}(p_A, p^R)]}{G[m_{AB}(p_A, p^R)] - G[m_{B0}(p^R,0)]} - 1 \right) > 0.
\]

Consequently, since \( S^C_A \) is fixed \( p_A \) must increase in \( p^R \). □

The above proposition suggests that the relationship between \( p^A \) and \( p^B \) may be non-monotone. It does not, however, say anything about the effects of radical changes in \( p^B \). The next step is to analyze the consequences of a complete dismantling of rent control.
Proposition 4: A complete dismantling of rent control could increase $p_A$.

Proof: Let us compare two extreme situations (i) $p^R = 0$ and (ii) an unregulated market so that $p_A^R = p_A^C$ and $p_B^R = p_B^C$. In (i) $G[m_{AB}(p^R,0)] = G[m_{AB}(p^R,0)] = 0$. Equations (6)-(8) then yield the following market clearing condition

$$S_A^C = 1 - G[m_{AB}(p_A, \bar{p}_B)] - (1 - G[m_{AB}(p_A, \bar{p}_B)]) S_A^R - \left(1 - \frac{G[m_{AB}(p_A, \bar{p}_B)]}{G[m_{AB}(p_A, p^R)]}\right) S_B^R$$

In (ii) the market clearing condition for area A is $S_A^C = 1 - G[m_{AB}(p_A, \bar{p}_B)] - S_A^R$

First, let $S_B^R = 0$. Suppose $p_A$ is equal in both cases. Then demand for condominiums in A is higher under (i) than under (ii) which is inconsistent with equal prices. Thus, $p_A$ must be higher in the unregulated case. If instead $S_A^R = 0$, the opposite is true. □

Hence, if the stock of rental housing in area A is small in relation to that in area B then the demand shifting effect may dominate also for radical changes in $p^R$.

3. Discussion

Most economists would not consider rent control to be an efficient way of redistributing income or avoiding segregation. Nevertheless, it seems to be relatively easy to gain political support for regulated rents. This is not surprising in cities where tenants are an important voter group. However, if owner occupied housing accounts for a large share of the housing stock, it is not obvious that rent control would be supported by a majority. A reduction in the prices of owner occupied housing represents a capital loss. Therefore, condominium owners as a voter group are likely to be opposed to any public policy resulting in lower condominium prices.

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8 Although we do not focus on welfare issues it is worth mentioning that rationing, in our model, has the standard efficiency drawback that the consumption pattern is distorted relative to the consumers' marginal valuations of housing quality. From a distributive point of view, welfare is transferred from landlords to relatively poor tenants.
Our analysis suggests that condominium owners are likely to vote for rent control if it is moderate, if the stock of rental housing in the less attractive area is small or if housing qualities are identical (since there could be no demand shifting effect in that case).

On the other hand, condominium owners are likely to vote against rent control if it is substantial or if the stock of rental housing in the attractive area is small. Under those circumstances the demand shifting effect is strong relative to the income distribution effect and there will be a positive relationship between the regulated rent and the prices of owner occupied housing.

Introducing a system of income related housing benefits may also have the effect of weakening the income distribution effect thus reducing the support for rent control. Sweden, for example, has an ambitious rent subsidy programme where marginal changes in the rents are, to a large extent, balanced by changes in the subsidy. Housing demand is therefore quite insensitive to changes in the rent level.

It is interesting to note that the increase in aggregate demand that follows from a reduction in the regulated rent will manifest itself through the construction of new housing in the less attractive area. Thus, contrary to what is often argued, rent control may have a positive effect on the size of the aggregate housing stock.

In the formal analysis we have disregarded the fact that the production of housing is essentially irreversible. The political implication is that once rent control is imposed, it expands the stock of housing in the less attractive area which, in turn, may make it more appealing to go back to an unregulated regime from an income distribution perspective. The reason is that after a period of rent control the market determined rent in the less attractive area will be lower than the marginal construction cost. In that sense rent control might bear the seed of its own destruction.

References


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Figure 1

Figure 2
**Figure 3**

**Figure 4**