Effect of Rent Control on Housing Quality: Evidence from New York *

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Abstract

Using data from the 2014 New York City Housing and Vacancy Survey, this study employs two different models to examine the effect of rent control on housing quality in New York City, including a logistic model and a random forest classifier model. While previous literature has not reached an agreement on how rent control affects housing maintenance and improvements, this study provides evidence that rent control has a negative impact on housing quality.

keywords: Rent control, housing quality.

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1 Introduction

Rent control has been an important housing policy in cities like New York City. While the goal of such a policy is to make housing more affordable, studies have found that rent control may have an unexpected negative impact on the housing market. More specifically, previous literature has come to a disagreement in terms of how rent control affects housing quality: while some literature finds that rent control has a negative impact on housing quality (Moorhouse, 1972; Albon & Stafford, 1990; Gyourko & Linneman, 1990), some literature suggests that such impact is limited (Rydell, Barnett, Hillestad, Murray, & Neels, 1981; Olsen, 1988). To contribute to this discussion, we would like to provide empirical analysis to answer the question: does rent control in New York City has a negative impact on the housing quality of rental units?

Especially when the rent control policy makes efforts to limit the increase of rent caused by home improvement, we conjecture that such a policy would have some impact on the housing quality in the local rental market. This is exactly in the rent control policy of New York City. The rent control in New York City has specific requirements on rent increase in response to home improvements. The Rent Act of 2011 also made specific changes to such requirements. Compared with prior versions of rent control policy, the Rent Act of 2011 includes some amendments that further protect tenants against rent increases. In particular, there would be less rent increase if apartment improvements were made. The landlord can permanently increase the legal regulated rent by 1/60 of the cost of the improvements if the building has more than 35 apartments. This rate used to be 1/40 under the prior Rent Law (*Rent Act of 2011*, n.d.). Thus, it is important to investigate how these specific measures influenced the housing quality of rental units in New York City as such effects may fall outside the intention of the policy.

Using data from the 2014 New York City Housing and Vacancy Survey (NYCHVS), this study employs both a traditional logistic model used by previous literature and a more computationally enhanced random forest model to study the impact

of rent control policy on housing quality. Both of our logistic model and our random forest model confirm that rent control has a negative impact on housing quality and the housing quality of rental units in New York City varies by borough.

2 Related Literature

The study of the housing market is not new in any way. In particular, the private rental market has been a focus of study for decades. As dwellings for rent are also a kind consumer good, the price and quality of such good influences both the demand side and the supply side. For renters, rent and its fluctuations are in no doubt a key factor in household decision making. Renters constantly need to make decisions and try to find a balance between better housing quality and higher rent. As renters are more likely to be pushed into the market by changes in their own life and changes in the market (Kendig, 1984), the search for high-quality housing at an affordable price is a non-stop process for many renters. Landlords, on the other hand, need to maximize their profits when setting and changing the rent. As the probability of finding a tenant decreases as the rent increases for a rational landlord with a vacant unit (Stull, 1978), landlords also need to seek a balance between providing better quality housing and higher cost.

What determines the rent is a mechanism where many variables contribute to the process, including variables that naturally influence the rent as a part of the market features and measures that are imposed on the market to regulate and adjust the rent. The natural influencing factors, such as each of spatial factors (Dubin & Sung, 1987), vacancy rates in the local market (Igarashi, 1991), and quality of the dwellings have a certain level of impact on rent. In studying these factors, many studies have focused on the hedonic analysis of rent (Buchel & Hoesli, 1995; Hoesli, Thion, & Watkins, 1997). For example, Larsen and Sommervoll show that rent is also influenced by the characteristics of landlords and tenants and the interactions between them – small-scale landlords may be more willing to reduce rent for tenants with good credibility than large-scale landlords (Larsen & Sommervoll, 2009).

Besides these natural influencing factors that are crucial to the determination and changes of rent, another significant instrument that influences rent changes is the policies designed to control and adjust the rental market. More specifically, rent control policies have been implemented in various social settings with the general goal of suppressing rent increases. However, there have been heated debates about the nature and effect of such rent control policies among policymakers and scholars (Epstein, 1988). From an economic perspective, studies have shown that rent control may have some negative impact on the local housing market, such as misallocations (Glaeser & Luttmer, 2003), reduction in rental supply (Diamond, McQuade, & Qian, 2019), housing gentrification ("Reassessing Rent Control: Its Economic Impact in a Gentrifying Housing Market", 1988; Diamond et al., 2019; Asquith, 2019), and unsound housing quality (Moon & Stotsky, 1993). It is interesting to see two recent studies on this topic of Diamond et al. and Asquith coming to similar conclusions about the San Francisco rental market using different data and models. Diamond et al. conduct a quasi-experiment where the treatment group consists of renters with rent control and the control group consists of renters without rent control. Combining data from multiple sources, including address history, property records, and parcel data, Diamond et al. find that landlords in San Francisco respond to the imposition of rent control by converting the properties or redeveloping the building to be exempt from rent control (Diamond et al., 2019). Asquith, on the other hand, uses data from different government agencies to test if landlords tend to evict the tenants under rent control. He finds no evidence of landlords evicting their tenants when facing rent control, but there is evidence that landlords tend to redevelop their properties for rent control exemptions (Asquith, 2019).

Although it is exciting to see such consistency in the findings of recent work, questions remain unsolved regarding the impact of rent control on housing quality. Scholars have made efforts to understand whether or how rent control policies influence the level of housing maintenance, yet the results are mixed. Some studies show that landlords tend to ease the burden of rent control by lowering the level of maintenance of their dwellings (Moorhouse, 1972; Albon & Stafford, 1990; Gyourko

& Linneman, 1990), while others question such results and argue that rent control has limited impact on the level of housing maintenance (Rydell et al., 1981; Olsen, 1988)).

It has been shown that if the rent control policy allows housing maintenance to be evaluated at its market price, then landlords under rent control are expected to provide the same level of housing maintenance as when there was no rent control (Kutty, 1996). But the assumption made here seldom holds. In reality, one of the many forms of rent control is to limit the increase in rent caused by housing maintenance. And this is exactly the case in New York City.

Thus, we need more empirical analysis to further explain how rent control affects housing maintenance and housing quality as there has been no clear answer to this question. Another contribution that this study aims to achieve is to further study the case of New York City with recent data and computational methods. In the past, many scholars have focused their attention on New York City and use the data of New York City to study the effect of rent control, where the private housing rental market is an important part of life and also a significant part of policymaking (Desalvo, 1971; Olsen, 1972; Gyourko & Linneman, 1990; Early, 2000; Glaeser & Luttmer, 2003). Most of these studies use data from the New York City Housing and Vacancy Survey conducted by the New York City Department of Housing Preservation and Development for decades (Desalvo, 1971; Olsen, 1972; Gyourko & Linneman, 1990; Early, 2000). But since many of these studies were published some time ago, they used relatively old data without the help of current computational methods. Thus, this study uses more recent data to capture the current market characteristics and uses proper computational methods to achieve better accuracy and efficiency.

3 Data

For this study, we use the data from the 2014 New York City Housing and Vacancy Survey to study the effect of rent control on housing quality. Our motivation for choosing data from the year 2014 comes from the Rent Act of 2011, which specifically

changed how home improvement costs should be reflected in the rent.

The New York City Housing and Vacancy Survey (NYCHVS) is conducted every three years by the Department of Housing Preservation and Development (HPD) together with the U.S. Census Bureau. The first round of the survey was conducted in 1965. The survey asks questions about various features of apartments and houses in New York City. In terms of the quality of these dwellings, the survey asks about different aspects of housing quality, such as the condition of windows and floors and whether the kitchen supplies function well. The survey also asks about the rent control or rent regulatory status *.

This data source has been used by many of the previous literature on housing in the specific context of New York City (Desalvo, 1971; Olsen, 1972; Gyourko & Linneman, 1990; Early, 2000; Glaeser & Luttmer, 2003). In particular, Gyourko and Linneman use this dataset to study the effect of rent control on housing quality in New York City, and they find that a rent controlled or regulated unit is more likely to be in unsound condition (Gyourko & Linneman, 1990).

This study makes use of the data on the occupied rental units in New York City from NYCHVS. The total sample size is 8791, with 4966 rent-controlled units and 3825 uncontrolled units.

4 Models and Estimation

4.1 Variables

To study the effect of rent control on housing quality, the key question we need to answer is how to categorize a housing unit as in good condition. Gyourko and Linneman use the condition of the building as a representation of the condition of the housing units within it (Gyourko & Linneman, 1990). In the NYCHVS data, condition of the building is documented for each housing unit as "Sound", "Dilapidated" or

*In the specific case of New York City, rent control is implemented in two ways: rent control and rent regulation. In the rest of this paper, rent control units include both rent-controlled and rent-regulated housing units.

"Deteriorating", and the last two are considered to be "unsound".

Although there should be some connection between the condition of the units and the condition of the building, it is possible that the condition of the building cannot fully reflect the condition of each unit within it. The efforts made on individual apartment improvements cannot be well captured by the condition of the building. Thus, we consider using more detailed information about each unit from the survey to measure the condition of individual units. The NYCHVS asks about various features of each housing unit. We make use of ten features of housing quality to compute a score for each unit. We first set a score of 0 for each of the housing units and then change this score by the quality of each feature. For example, the survey asks each unit if there have been any heating equipment breakdowns. If there have been heating equipment breakdowns, we deduct one point from the score. If no heating equipment breakdowns have occurred, we add one point to the score. Table 1 in the Appendix provides details of these features and how the score is calculated. Thus, we obtain a housing quality score for each of the occupied units in our sample.

Although the score of an apartment can take various values, we argue that the quality of housing is hardly a continuous variable in nature. It is difficult to find a way to construct a continuous variable of housing quality and how we weight each of the apartment features is a relatively subjective process. Therefore, we categorize each of the housing units as "in good condition" or "in bad condition" based on their score. One way to do this is to compare the score of a unit with the mean score of all units. we categorize each housing unit as "in good condition" if the score is higher or equal to the mean score.

Table 1 provides cross-tabulations of rent control status with the apartment condition that we coded.

Table 1: Housing Condition by Rent Control Status

Unit Condition	Rent Control Status		Row Sums
	Controlled	Uncontrolled	
	2942	2763	5705
In good condition	(51.57%)	(48.43%)	(64.90%)
	(59.24%)	(72.24%)	
	2024	1062	3086
In bad condition	(65.59%)	(34.41%)	(35.10%)
	(40.76%)	(27.76%)	
	4966	3825	8791
Column Sums	(56.49%)	(43.51%)	

Simply comparing the proportion of units in good conditions, as is shown in Figure 1, we see that there is a higher proportion of units in "bad" condition among the rent-controlled units. This observation indicates the possibility that rent control negatively affects the housing quality in New York City. We shall use the two models to further examine this hypothesis in the following sections.

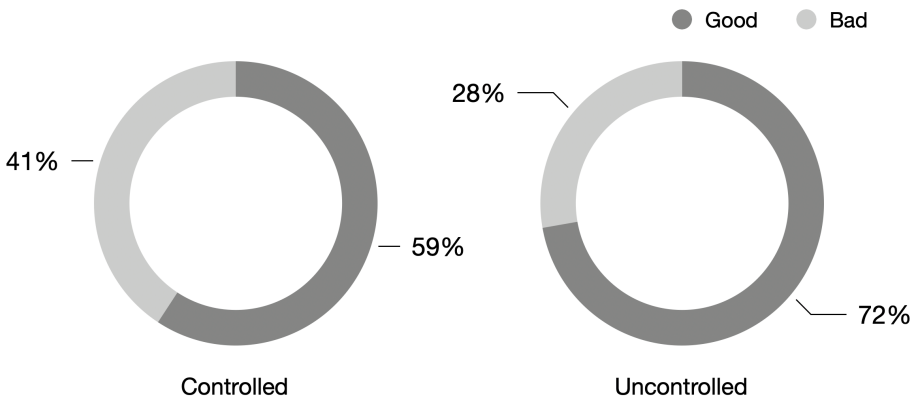


Figure 1: Comparison of Controlled and Uncontrolled Units

In terms of the explanatory variables, we modified the variables used in Gyourko and Linneman's study. Gyourko and Linneman use location (borough), building age,

rent control status, high-rise status (number of stories), and a subsidy variable that they compute (Gyourko & Linneman, 1990). In our model, we continue to use location (borough), rent control status and high-rise status as the explanatory variables. We change the high-rise status (number of stories) to the number of units in the building. There are two reasons behind this change: first, one can expect a strong connection between a building's number of stories and the number of units; second, the Rent Act of 2011 changed the criteria for rent increase due to home improvements: improvements made to units in buildings with more than 35 apartments allow landlords to increase the rent by 1/60th of the cost, while this rate used to be 1/40th. The rate is still 1/40th for buildings with less than 35 units. In other words, how rent increases due to home improvements differs by the number of units in the building rather than the height of the building. Thus, the number of units in the building is a more reasonable explanatory variable than the number of stories. Gyourko and Linneman also computed a subsidy variable for the units, which is the difference between the rent controlled price and a predicted rent if the unit was not rent controlled (Gyourko & Linneman, 1990). However, in their results, this variable has a relatively weak impact on the condition of the building ($\beta = 0.00003$). Moreover, there is no guarantee that the accuracy of the computation of this subsidy variable would not influence our estimation. Thus, we exclude the subsidy variable in our model. Table 2 provides more details on how we define the explanatory variables in our model.

Table 2: Explanatory Variables

Variable Name	Values
(I) Borough dummies	(a) Bronx (b) Brooklyn (c) Manhattan (d) Staten Island (e) Queens (the omitted category)
(II) Building age dummy - Old	(a) Old = 1 if built before 1947 (b) Old = 0 if built after 1947
(III) Rent control status dummy - Control	(a) Control = 1 if rent controlled (b) Control = 0 if uncontrolled
(IV) Number of Units in Building dummy - More_units	(a) More_units = 1 if building has at least 50 units (b) More_units = 0 if building has less than 50 units

4.2 Models

Because of the discrete nature of the housing quality variable, Gyourko and Linneman use a logistic model to estimate the effect of rent control (Gyourko & Linneman, 1990). This could be an effective model, but it should not be the only model that we can employ. More computationally enhanced methods enable us to construct other models, such as Decision Trees.

For this study, we first consider a logistic model similar to the one used by Gyourko and Linneman in their study. We then use a random forest classifier model and compare their results.

The logistic model that we estimate takes the traditional form, where the variables are constructed as discussed above.

$$P(\text{In Good Condition} = 1) = \frac{e^{X'\beta}}{1 + e^{X'\beta}}$$

Here, $P(\text{In Good Condition} = 1)$ is the probability that the housing unit is in good condition.

5 Results

5.1 Logistic model

Table 3 provides the results of estimation. In this sample, housing units in Queens are more likely to be in good condition compared with Brooklyn, Manhattan, and the Bronx. With the largest coefficient in absolute value, we may infer that housing units in the Bronx are more likely to be in bad condition. Without surprise, older units are more likely to be in bad condition. Rent control has a significantly negative effect on the quality of the housing unit. Although the positive coefficient suggests that apartments in buildings with more units are more likely to be in good condition, no evidence suggests that this effect is significant.

These findings are consistent with the findings of Gyourko and Linneman (Gyourko & Linneman, 1990). Our estimates again confirm that rent control has a negative impact on housing quality, which is not what the policy intends to achieve.

Table 3: Logistic Regression Results

Explanatory Variables	**coef**	**std err**	**z**	**P** $>\|z\|$	**[0.025**	**0.975]**
Const	1.4141	0.066	21.469	0.000	1.285	1.543
Brooklyn	-0.2572	0.066	-3.915	0.000	-0.386	-0.128
Manhattan	-0.2179	0.067	-3.229	0.001	-0.350	-0.086
Staten Island	0.2386	0.166	1.433	0.152	-0.088	0.565
Bronx	-0.5131	0.075	-6.811	0.000	-0.661	-0.365
Old	-0.4737	0.056	-8.432	0.000	-0.584	-0.364
Control	-0.4657	0.050	-9.401	0.000	-0.563	-0.369
More_units	0.0834	0.054	1.545	0.122	-0.022	0.189

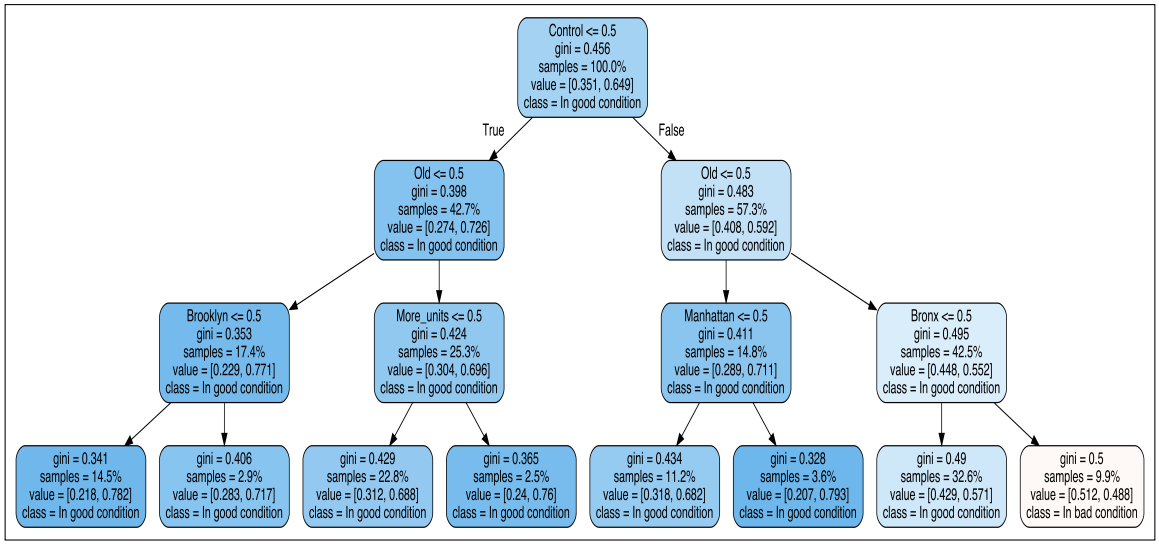
Pseudo R = 0.02984
n = 8791
Log-Likelihood = -5527.3

5.2 Random forest

Using the same sample and variables, we construct a random forest classifier with the help of the Scikit-learn package in Python. Using the RandomizedSearchCV method, we find the optimal tuning parameters and construct the random forest classifier accordingly. Figure 2 shows an example of the decision tree that we construct.

These results are consistent with the results of the logistic model. More specifically, a rent-controlled housing unit built before 1947 and located in the Bronx is more likely to be in bad condition.

Figure 2: Example of a Decision Tree from the Random Forest



To further examine the significance of the impact of rent control, we build a random forest without the rent control variable – the MSE of the model increases from 0.347969 to 0.351041.

Thus, both the logistic model and the decision tree model suggest that rent control has a negative effect on the housing quality in New York City.

6 Discussion

To compare the performance of the two models, we fit the logistic model using k-fold cross validation with $k = 5$ folds and obtain the average MSE across the $k = 5$ test sets (MSE ≈ 0.348652). The random forest classifier model with the optimal tuning parameters reports a slightly smaller MSE (MSE $= 0.347969$).

Although both of these two models confirm that rent control in New York City negatively affects the housing quality of rental units, there are still limitations in our study and space for further studies.

First, we were not able to distinguish the maintenance or improvements made by the landlords and by the tenants. Thus, we are not able to discuss whether the negative impact of rent control policies on housing quality is due to the reluctance of

the landlords to provide more maintenance or improvement services or the reluctance of tenants to maintain and improve their living quality in a rent-controlled unit. The New York City Housing Vacancy Survey does not ask about the preferences of landlords and tenants. Future studies may conduct surveys and other types of field work to further investigate this matter.

Another limitation of our study is that we are not able to obtain longitudinal data on individual rental units, and thus we are not able to compare the housing quality before and after the Rent Act of 2011 came into effect. Our models can only show that rent control has a negative impact on housing quality, but we are not able to determine whether such negative impact is due to the specific measures to limit the increase of rent caused by home improvements, or some other features of the rent control policy. After all, rent control is a system of regulations rather than a single line of requirement. It would be interesting to study the effect of a specific measure if more data are available.

Overall, based on the existing data, our models can prove that the negative impact of rent control on housing quality exists in the case of New York City, but we are not able to explain how or why such an impact occurred. Future studies should examine the mechanism behind such an impact to provide more specific policy implications.

7 Conclusion

This study contributes to the discussion on the impact of rent control by answering the question: whether rent control has a negative impact on housing quality in the case of New York City.

Using data from the 2014 New York City Housing and Vacancy Survey (NYCHVS), this study uses a logistic regression model and random forest model to study the impact of rent control policy on housing quality. Based on the survey, we code the quality for each occupied rental unit in our sample and select the variables that are most likely to affect the quality based on previous literature. Both of our logistic model and our random forest model confirm that rent control indeed has a negative

impact on housing quality and the housing quality of rental units in New York City varies by borough. Through identifying the limitations of this study, we also point out potential directions for future studies on this topic. With more data available, we should further investigate the mechanism behind such a negative impact to provide more specific policy implications.

Rent control has been an important housing policy. While the purpose of this study is not to criticize or deny the effectiveness of rent control in making housing more affordable in cities like New York City, the unexpected negative impact on housing quality should be taken into account in future studies and policy makings.

References

Albon, R. P., & Stafford, D. C. (1990). Rent control and housing maintenance. *Urban Studies*, *27*(2), 233-240. Retrieved from https://doi.org/10.1080/00420989020080191 doi: 10.1080/00420989020080191

Asquith, B. J. (2019, May). Housing supply dynamics under rent control: What can evictions tell us? *AEA Papers and Proceedings*, *109*, 393-96. Retrieved from https://www.aeaweb.org/articles?id=10.1257/pandp.20191025 doi: 10.1257/pandp.20191025

Buchel, S., & Hoesli, M. (1995, August). A Hedonic Analysis of Rent and Rental Revenue in the Subsidised and Unsubsidised Housing Sectors in Geneva. *Urban Studies*, *32*(7), 1199-1213. Retrieved from https://ideas.repec.org/a/sae/urbstu/v32y1995i7p1199-1213.html

Desalvo, J. S. (1971). Reforming rent control in new york city: Analysis of housing expenditures and market rentals. *Papers in Regional Science*, *27*(1), 195-228. Retrieved from https://rsaiconnect.onlinelibrary.wiley.com/doi/abs/10.1111/j.1435-5597.1971.tb01512.x doi: 10.1111/j.1435-5597.1971.tb01512.x

Diamond, R., McQuade, T., & Qian, F. (2019, September). The effects of rent control expansion on tenants, landlords, and inequality: Evidence from san francisco. *American Economic Review*, *109*(9), 3365-94. Retrieved from https://www.aeaweb.org/articles?id=10.1257/aer.20181289 doi: 10.1257/aer.20181289

Dubin, R. A., & Sung, C.-H. (1987). Spatial variation in the price of housing: Rent gradients in non-monocentric cities. *Urban Studies*, *24*(3), 193-204. Retrieved from https://EconPapers.repec.org/RePEc:sae:urbstu:v:24:y:1987:i:3:p:193-204

Early, D. W. (2000). Rent control, rental housing supply, and the distribution of tenant benefits. *Journal of Urban Economics*, *48*(2), 185 - 204. Retrieved from http://www.sciencedirect.com/science/article/pii/S0094119099921630 doi: https://doi.org/10.1006/juec.1999.2163

Epstein, R. A. (1988). Rent control and the theory of efficient regulation symposium: Rent control and the theory of efficient regulation. *Brooklyn Law Review*, *54*, 741.

Glaeser, E. L., & Luttmer, E. F. P. (2003, September). The misallocation of housing under rent control. *American Economic Review*, *93*(4), 1027-1046. Retrieved from https://www.aeaweb.org/articles?id=10.1257/000282803769206188 doi: 10.1257/000282803769206188

Gyourko, J., & Linneman, P. (1990). Rent controls and rental housing quality: A note on the effects of new york city's old controls. *Journal of Urban Economics*, *27*(3), 398 - 409. Retrieved from http://www.sciencedirect.com/science/article/pii/009411909090009C doi: https://doi.org/10.1016/0094-1190(90)90009-C

Hoesli, M., Thion, B., & Watkins, C. (1997). A hedonic investigation of the rental value of apartments in central bordeaux. *Journal of Property Research*, *14*(1),

15-26. Retrieved from https://doi.org/10.1080/095999197368735 doi: 10.1080/095999197368735

Igarashi, M. (1991). The rent-vacancy relationship in the rental housing market. *Journal of Housing Economics*, *1*(3), 251 - 270. Retrieved from http://www.sciencedirect.com/science/article/pii/S1051137705800361 doi: https://doi.org/10.1016/S1051-1377(05)80036-1

Kendig, H. L. (1984). Housing careers, life cycle and residential mobility: Implications for the housing market. *Urban Studies*, *21*(3), 271-283. Retrieved from https://doi.org/10.1080/00420988420080541 doi: 10.1080/00420988420080541

Kutty, N. K. (1996). The impact of rent control on housing maintenance: A dynamic analysis incorporating european and north american rent regulations. *Housing Studies*, *11*(1), 69-88. Retrieved from https://doi.org/10.1080/02673039608720846 doi: 10.1080/02673039608720846

Larsen, R., & Sommervoll, D. E. (2009). The impact on rent from tenant and landlord characteristics and interaction. *Regional Science and Urban Economics*, *39*(3), 316 - 322. Retrieved from http://www.sciencedirect.com/science/article/pii/S0166046208001154 doi: https://doi.org/10.1016/j.regsciurbeco.2008.10.004

Moon, C.-G., & Stotsky, J. G. (1993). The effect of rent control on housing quality change: A longitudinal analysis. *Journal of Political Economy*, *101*(6), 1114-48. Retrieved from https://EconPapers.repec.org/RePEc:ucp:jpolec:v:101:y:1993:i:6:p:1114-48

Moorhouse, J. C. (1972). Optimal housing maintenance under rent control. *Southern Economic Journal*, *39*(1), 93–106. Retrieved from http://www.jstor.org/stable/1056228

Olsen, E. O. (1972). An econometric analysis of rent control. *Journal of Political Economy*, *80*(6), 1081–1100. Retrieved from http://www.jstor.org/stable/1830211

Olsen, E. O. (1988). What do economists know about the effect of rent control on housing maintenance?. *Journal of Real Estate Finance & Economics*, *1*(3), 295 - 307. Retrieved from http://proxy.uchicago.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=17324449&site=eds-live&scope=site

Reassessing rent control: Its economic impact in a gentrifying housing market. (1988). *Harvard Law Review*, *101*(8), 1835–1855. Retrieved from http://www.jstor.org/stable/1341438

Rent act of 2011. (n.d.). Retrieved from https://rentguidelinesboard.cityofnewyork.us/resources/rent-regulation-laws/rent-act-of-2011/

Rydell, P., Barnett, L., Hillestad, C., Murray, M., & Neels, K. (1981). Impact of rent control on the los angeles housing market. *The Impact of Rent Control on the Los Angeles Housing Market*. Retrieved from https://www.rand.org/pubs/notes/N1747.html

Stull, W. J. (1978). The landlord's dilemma: Asking rent strategies in a

heterogeneous housing market. *Journal of Urban Economics*, *5*(1), 101 - 115. Retrieved from http://www.sciencedirect.com/science/article/pii/0094119078900396 doi: https://doi.org/10.1016/0094-1190(78)90039-6

Appendix

Table 1: Housing Features and Quality Score Calculation

Item Name	Description	Score (default= 0)
Condition of External Walls	Missing bricks, siding, or other outside wall material	-1
	Sloping or bulging outside walls	-1
	Major cracks in outside walls	-1
	Loose or hanging cornice, roofing, or other material	-1
	None of these problems with walls	+1
	Unable to observe walls	0
Condition of Windows	Broken or missing windows	-1
	Rotten/loose window frames/sashes	-1
	Boarded-up windows	-1
	None of these problems with windows	+1
	Unable to observe windows	0
Condition of Stairways	Loose, broken, or missing stair railings	-1
	Loose, broken, or missing steps	-1
	None of these problems with stairways	+1
	No interior steps or stairways	0
	No exterior steps or stairways	0
	Unable to observe stairways	0
Condition of Floors	Sagging or sloping floors	-1
	Slanted or shifted doorsills or door frames	-1
	Deep wear in floors causing depressions	-1
	Holes or missing flooring	-1
	None of these problems with floors	+1
	Unable to observe floors	0
Toilet Breakdowns	Yes	-1
	No	+1
	No toilet in this apartment	0
	Not reported	0
	Not applicable (no plumbing facilities)	0
Kitchen Facilities Functioning	Yes, all functioning	+1
	No, one or more is not working at all	-1
	Not reported	0
	Not applicable (no kitchen facilities in unit)	0
Heating Equipment Breakdown	Yes	-1
	No	+1
	Not reported	0
Cracks or Holes in Interior Walls or Ceiling	Yes	-1
	No	+1
	Not reported	0
Broken Plaster or Peeling Paint on Ceiling or Inside Walls	Yes	-1
	No	+1
	Not reported	0
Water Leakage Inside Apartment	Yes	-1
	No	+1
	Not reported	0

†These features and their descriptions are from the 2014 NYCHVS Survey.